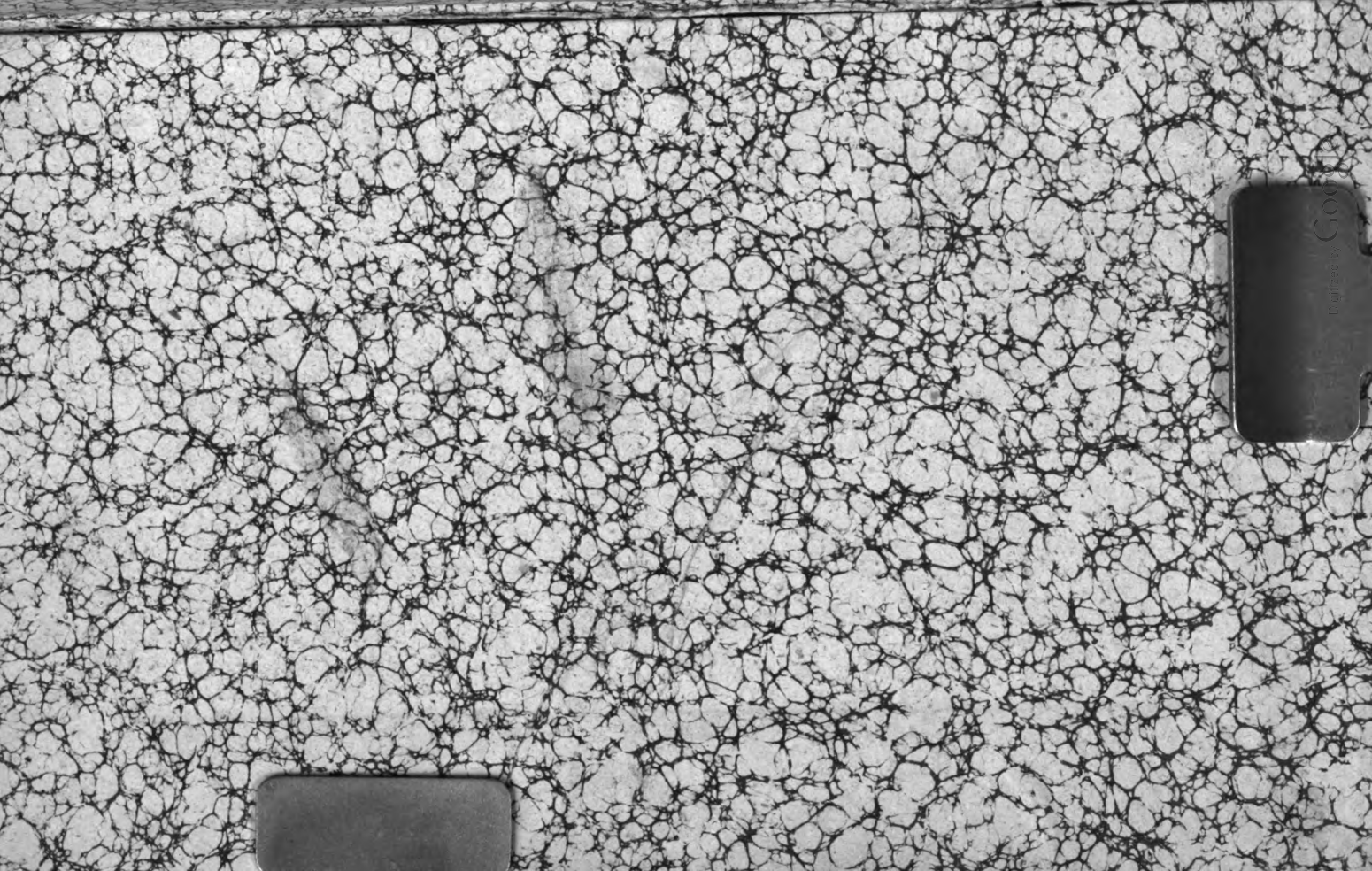

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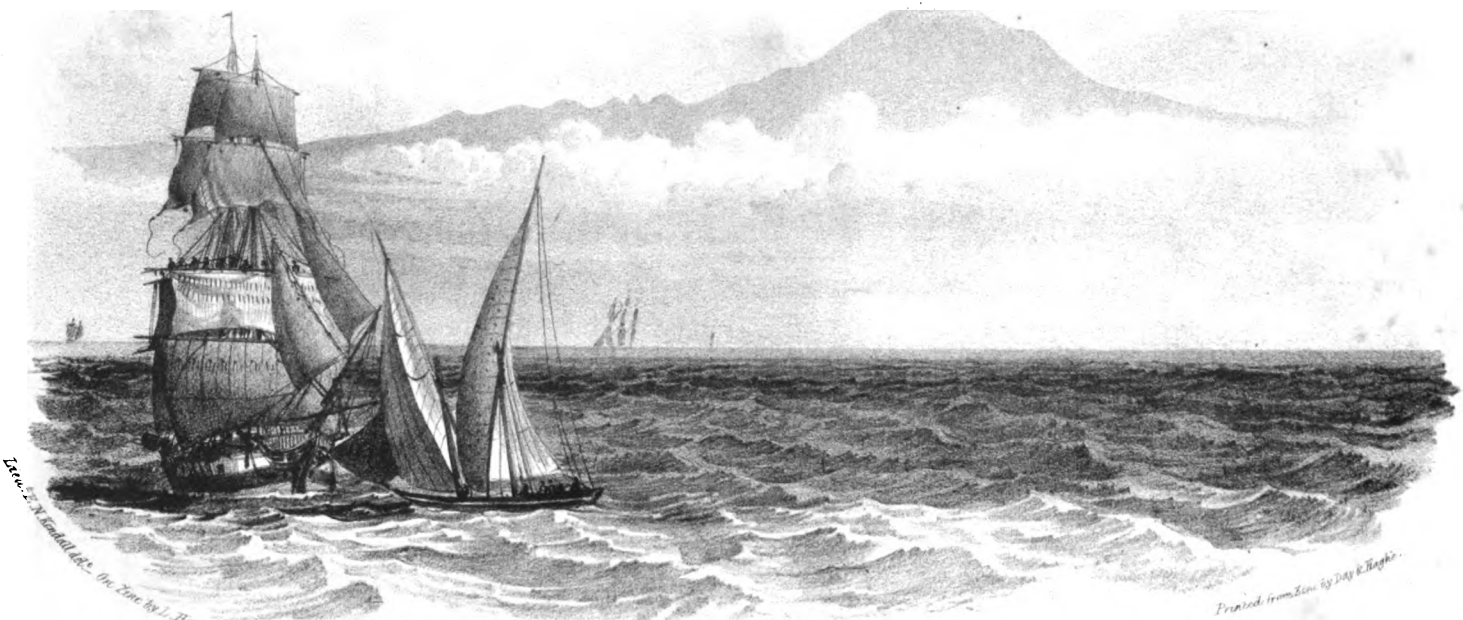


PEAK OF TENERIFFE, S.W. 50 Miles.

THE

NAUTICAL MAGAZINE,

ETC.

ORIGINAL PAPERS.

JANUARY, 1836.

LIGHT AT CAPE COAST CASTLE, *Western Coast of Africa.*

Hydrographical Office, Admiralty, 1st Dec. 1835.

THE Committee of Merchants appointed by his Majesty's Government for superintending the grant annually voted by Parliament, for the support and maintenance of the Forts and Factories on the Gold Coast of Africa, have transmitted to the Lords Commissioners of the Admiralty the following information :—

Preparations are now making for exhibiting a light at Fort William, Cape Coast Castle, and notice is hereby given, that the light will be exhibited on the 1st October next, and thenceforth continued every night from sun-set to sun-rise, for the guidance of vessels bound for the forts of Saint George d'Elmina, Cape Coast Castle, Anamaboe, or the adjacent settlements.

This light will burn at an elevation of 204 feet above the medium level of the sea, and at a distance from the beach of 760 yards.

It will be visible to vessels in every direction, whether approaching or sailing parallel to the line of coast. The light will be a Steady White Light, and will be the only one upon the coast.

In steering for the anchorage of Cape Coast Castle, vessels ought to bring the light to bear N. ¼ W., keeping the lead going, and to anchor in six or six and a half fathoms water; the light being then distant from the vessel about two miles.

In ordinary weather the light will be visible at the distance of about seven leagues, and will be of great service in preventing vessels being carried to leeward of their port, by the strong south-westerly current which runs off the coast about ten months in the year.

(Signed,)

GEORGE MACLEAN, President.

Cape Coast Castle 27th August, 1835.

REMARKS ON HAVANA HARBOUR IN 1822. *From the Remark Book of H.M. Ship North Star, Captain Hon. G. R. Trefusis.*

THE revolving light at the entrance may be seen a great distance off, and is an excellent mark for the harbour in the night, as the current runs two or three miles an hour to the eastward, and it will be found necessary to bear up to counteract its effects.

In coming from the eastward during the day, the morro and town are not always discernible, being on with the land behind, but there is a quarry on the south side of the entrance, which is seen a long way off; and there are also two remarkable pans, or sugar-loaf hills, inland of the harbour, which are excellent guides: when, bearing S. by E. ½ E. by compass, they will be directly on with the harbour's mouth.

You ought to lie up on the larboard tack, E. S. E. by compass, to run up the Narrows.

In the morning you frequently are able to lie up the harbour; but if you cannot get in early, you will have to lie off and on till to the sea-breeze of the evening.

In going in, you frequently are close hauled on the larboard tack, or nearly so. The pilots give the Morro Point a very close shave, to have more way and room, to clear the bank on the starboard side a little further in, in case of being headed off, but immediately, when past the Morro Point, they haul a little off, to pass outside the buoy with a flag off the larboard shore going in. A buoy, with a flag, has been lately placed on the edge of the bank, on the starboard side going in; this bank runs a long way over, and you shallow suddenly on it. This part may be called the Narrows of the harbour; and the wind heading frequently obliges you to drop anchor here.

After opening the Sheers and Admiralty House, round away to the southward, and anchor in five fathoms, between the church of Paulo on the town side, and Regla pier-head, when the latter bears by compass E. by N. ½ N., and is at least twice the distance off, that the bastion under Paulo church is. The advantages of this situation are, that you are clear inside of all the shipping in the Narrows, as well, probably, as the contagious effects of this vicinity. You have also good room for getting under way, and, in consequence of the almost incessant prevalence of easterly winds, you have likewise time to cat the anchor, while the head-yards are abox; then, while shooting over towards Regla, to fish also, which is a necessary precaution.

There is water enough over towards Regla. Do not stand very close, because you must beware of Regla Shoal on the other tack going out; to clear which, do not open the Morro to the northward of the town side. You will generally have the wind free enough to thread the shipping, and clear the harbour.

The Seringapatam was anchored by the pilot between the two shoals of La Luz on the Admiralty chart, but sounded all about without finding them.

Further Remarks on the Havana, in H. M. Ship Larne, by Mr. H. J. Ennis, Acting Master.

We made this port in thick and cloudy weather; the iron hills which lie to the eastward of it being our first guide. We then saw the Maiden's Paps, which we afterwards found to bear exactly S. by E. ½ E. (mag.) from the lighthouse. The city may in clear weather be seen from the deck at the distance of twenty miles. It is advisable with the common trade-wind to get to the eastward of the harbour, for there is an eddy close in-shore setting strongly to the westward, and the wind frequently scants. The ground is foul at the entrance. The western point must be carefully avoided, a rocky shoal extending from it the distance of half a cable. Ships have been totally lost there. The day we went in, a brig grounded on it, and, though the weather was very fine, and she had the assistance of our boats, it was six hours before she could be hove off; had there been any wind, she must have gone to pieces. The particular difficulty in heaving off being from the rugged nature of the rocks, and the great depth of water outside.

A buoy on the eastern side of the harbour points out the place of a wreck, on which there is only two fathoms water: this buoy must be always passed to the westward. The first time we entered Havana, we anchored close to this buoy, in eight fathoms, and then warped up to a berth off Regla, in four fathoms and three-quarters. In June, the sea-breeze set in about 10 A.M. and lasted till 5 P.M. The weather was very hot, and we were much troubled by the mosquitos.

It is stated in the Columbian Navigator, that a forty-four-gun ship can scarcely enter Havana; this cannot be correct, as there were two Spanish seventy-fours lying there with us in the upper part of the harbour, off the city, one of which came in with all her guns and stores on board. The soundings in the entrance are from ten to eight fathoms, and in the upper part of the harbour from four to six fathoms. I inquired particularly for the shoal said to lie one mile north-north-east from the Mona, and which is mentioned in a note in the Columbian Navigator, but the Havana pilots denied its existence.

River Middle Sand, &c.

Trinity-House, London, 30th Nov. 1835.

Notice is hereby given, that this Corporation has caused a Buoy, coloured Red and White in Stripes, to be placed on the shoal part

of the River Middle Sand: the buoy is marked "*East River Middle*," and lies in seven feet at low-water spring-tides, with the following marks and compass bearings, viz.:—

Shellhaven House and Trees, on with the S. S.W. part of the Scar Houses on Canvey Island, bearing	N.W. by W. ½ W.
A Barn (having a remarkable round-topped Tree close West of it) upon the Isle of Sheppey, on with the Easternmost Windmill at Mile-Town, bearing . .	S. ½ E.
Leigh Church	N. by W. ½ W.
Prittlewell Church	N. N. E.
Nore Light	S. E.

Notice is also given, that Beacon Buoys have been placed at the following stations, and the ordinary buoys previously there taken away, viz.:—

East End of the Spaniard Sand, a Beacon Buoy, bearing an inverted Cone upon its Staff.

North-East End of the Whiting Sand, a Beacon Buoy, having a Globe upon its Staff.

By Order, J. HERBERT, Secretary.

REMARKS ON THE COAST OF PORTO RICO, *in H. M. Ship Arachne*, 1834, *Captain J. V. Baker, R.N.*

Passage between St. Thomas's Island and Culebra, and Crab Islands.

IN this channel there is soundings, with twenty fathoms on the west side of it, and, approaching either the island of Culebra or Vieque, it is shoaler. We had ten fathoms, with the following bearings: East end of Crab Island, S. by W. ½ W.; East end of Culebrita, N. by W. ½ W.; and Sail Rock, E. by N. ½ N. The current sets through this channel strong to the westward, which would render it necessary, in case of being becalmed, to anchor before you are drifted on the western shore.

The Island of Caxa de Muertos.

This island is on the south side of Porto Rico, and bears E. ½ S. thirty-six miles from Cape Roxo. When made, it appears in the form of a wedge. The north end is high, the centre low, and the south end has a sugar-loaf mountain, which, at a distance, appears a detached island. The anchorage is on the west side, off the low land, half a mile off shore, in eight fathoms, in the following bearings: South-East point of the small island, connected to Caxa by

a reef above water, S.W.; the only sandy bay, S. by E.; the North-West point and Northern peak in one, East. There is no danger on the west side of this island, and off the low land the soundings are regular; but, to the northward of it the water is deeper, and you will have seventeen fathoms close to the shore. Off the southward of the island, there is a shoal which breaks about half a mile off shore.

From Caxa de Muertos to Cape Mala Pasqua.

With the island of Caxa de Muertos bearing west, three or four miles off, we had six fathoms, and observed the breakers very heavy, extending from the north-east point, apparently to the shore of Porto Rico; and, from this part of the coast to Cape Mala Pasqua, we had soundings two and three miles off shore from ten to seven fathoms. The shoal mentioned in the Columbian Navigator, three or four leagues to the westward of the cape, we approached within one mile, and had soundings in thirteen fathoms. This reef renders the anchorage off the town of Yanema, which is to leeward of it, very secure.

Ponce Harbour.

About five miles to the westward of Caxo Muertos is Ponce Harbour; approaching within four miles of it, we observed that it was open to southerly winds. The village or town is small; a little to the westward of it, on the beach, is a fort and flagstaff. There is a small sandy key, with brushwood on its top, and breakers off its east end, lying off this fort about three quarters of a mile from the shore. The water appeared discoloured two or three miles to the southward of the town, but no appearance of breakers, excepting the before-mentioned reef off the sandy key.

Cape Roxo.

When made east or west, appears like a number of small islands; a near approach shews it a bluff headland; it is surrounded by a bank, upon which the Columbian Navigator has placed dangers, which either do not exist, or which are misplaced. That called the Media Luna, said to be above water, and about five miles from the coast, has certainly no existence as laid down; by our bearings we were not a quarter of a mile from this reef, but could not see either rocks, broken-water, or any appearance of danger: we had at the time six fathoms. We were a great deal on this bank, always keeping a good look-out, and the lead going in from nine to six fathoms, but we never discovered any danger; had those mentioned in the Col. Nav. been correctly laid down, we must have seen them, approaching, as we several times did, very near their imaginary positions. On one particular spot, Cape Roxo bearing S.E. by E. eight or nine miles, we always found a

cross and heavy squall, in eighteen and twenty fathoms; this may arise from inequality of the ground, but it was certainly very singular, as the water surrounding it was smooth. The bottom may be seen in twelve and thirteen fathoms. The outer edge of the bank bears N. by W. ½ W. from Zanhio: it is very steep.

Mona Island.

This island is nearly level, and of a moderate height. We could not see it farther than eighteen miles on a clear day. Its north-east, south-east, and south-west sides, are bounded by a reef a quarter of a mile off shore. At the distance of two miles, we ran along these sides, but saw no other danger than a reef which extends one mile and a half off the south point.

The south-west point (to the northward of which is the anchorage) is sand, long and low, with brushwood and small trees on it. There is a reef off this point, about a quarter of a mile in length, to the westward.

We anchored here in his Majesty's ship Arachne, with the sandy point bearing S. by W. one mile and a half; island of Monica, N. ¼ E.; North-West point of Mona, (high and bluff,) N.E. ¼ N.

We came to our anchorage from the northward, passing Monica to the westward within six miles, but had no soundings; neither could we see broken water, or any danger between it and Mona. This island is the resort of innumerable quantities of boobies; its sides are very white, and are inaccessible. Our anchorage was off the sandy bay formed by the south-west point, (bearings as above mentioned,) sandy bottom; this, the north-west side, is also bounded by a reef, about three cables' length from shore; the passage through it is nearly in the centre of the bay, but it is narrow, and a boat must pick her way through. The soundings are very regular; we found four fathoms close to the reef; and there would be no danger in anchoring within a quarter of a mile of it, bearing in mind it is open to all westerly, and from south to south-east winds.

We landed on the sandy beach, and found the west end of the island, which is low, covered with small trees, brushwood, and, at a few cleared spots, with grass; in the latter of which were small pools of fresh water, apparently dug, but of a bad quality; around these we found the print of the hoofs of cattle and horses, or mules, very recently made, as was evident by the sun not having hardened the soil. These pools of fresh water were on the south-east side of the sandy point, about one mile and a half from the landing. We did not find any signs of habitation or inhabitants; and, excepting the before-mentioned fresh-water pools, we saw no possibility of obtaining water. A small quantity of fire-wood might be obtained, but with labour. The remarks on this island in the Columbian Navigator are imperfect; they give the anchorage in the following

bearings: Monica Island, N. by W.; South-West point of Mona, S.E.; but it is not possible to bring these bearings on.

Mona Passage.

We found the winds generally light in this passage, and but little current. The island of Zanhio, bearing W. by N. ½ N. eleven miles from Aguadilla Bay, may be seen on a clear day from any part of it. It is high, and very bold. We frequently approached it very close, without observing any danger, or getting soundings near it. Off the north and south ends there are a few rocks, but close to the shore it is covered with small brushwood, and the landing place is on the south side.

Aguadilla Bay

Is on the west side of Porto Rico. The only danger in approaching this anchorage is a reef running off half a mile from Point Palmas—a long low point; it is one mile to the southward of Point Brujuen, the south-west point of the island. Between Point Palmas and Point Gueigew, the south-west point of the bay, the coast is perfectly clear, and you can approach any part of it within a quarter of a mile. The town of Aguadilla lies on the north end of a large sandy bay, extending from Point Gueigew. The best anchorage is with the church bearing E. by S. half a mile off shore, in fourteen or fifteen fathoms, during the months of January and February, when the northerly winds are prevalent. This is a very rough anchorage, as a heavy sea rolls in, rendering it difficult, and at times impossible, to land. The watering place is in the centre of the town, through which a small river runs; rolling your casks over the beach into the village, when the water is smooth, you can procure it quickly; but the least northing in the wind makes a heavy surf on the beach. Fresh provisions are cheap; good beef 4½d. sterling per pound, large turkeys one dollar each; vegetables cheap. The island of Zanhio, bearing W. by N. eleven miles from the town, will give its true position, as it is under high land, and cannot easily be seen to the northward of. On the north end of the town is a small fort, raised on the beach, mounting seven guns. The country is well wooded, and we purchased fire-wood at two dollars a cord.

By observation on shore, we found the latitude of the town in 18° 26′ 10″ N., and we found our chronometer correspond with its longitude 67° 10′ 20″ W. Vessels generally anchoring for the purpose of watering, it should have been mentioned the watering place is close to the only large yellow house lying in the centre of the town. This bay is sheltered from all easterly winds, and from south to south-west.

Number.	Observatories.	Country.	Latitude. +When North —When South			Longitude +When West —When East.			Authorities for Longitude.
			°	′	″	°	′	″	
1	Aberdeen (1)	British Islands	+57	8	58	+ 2	5	42	Astr. Nachr.
2	Abo	Finland	+60	26	57	—37	17	12	Argelander.
3	Altona	Germany	+53	32	45	— 9	56	39	Gauss.
4	Armagh	British Islands	+54	21	13	+ 3	38	52	Rev. Dr. Robinson.
5	Bedford	Ditto	+52	8	28	+ 0	28	0	Cp.W.H.Smyth,R.N
6	Berlin	Prussia	+52	31	13	—13	23	53	Berlin Tahrbuch.
7	Biggleswade	British Islands	+52	5	25	+ 0	15	52	Mr. Maclear.
8	Bremen	Hanover	+53	4	36	— 8	49	0	Dr. Olbers.
9	Buda	Austria	+47	29	12	—19	3	10	Zach.
10	Bushey Heath	British Islands	+51	37	44	+ 0	20	13	Mem. Astr. Soc.
11	Cambridge	Ditto	+52	12	51	— 0	5	52	Prof. Airy.
12	Cape Good Hope	Africa	—33	56	3	—18	28	45	Mr. Henderson.
13	Christiania	Norway	+59	54	5	—10	45	0	Astr. Nachr.
14	Copenhagen (2)	Denmark	+55	40	53	—12	35	0	Ditto.
15	Cracow	Poland	+50	3	50	—19	58	6	Ditto.
16	Dorpat	Russia	+58	22	47	—26	43	45	Bessel. Tab. Reg.
17	Dublin	British Islands	+53	23	13	+ 5	50	30	Astr. Nachr.
18	Edinburgh	Ditto	+55	57	20	+ 3	10	54	Mem. Astr. Soc.
19	Florence (3)	Italy	+43	46	41	—11	15	54	Zach.
20	Geneva	Switzerland	+46	11	59	— 6	9	24	Astr. Nachr.
21	Gotha (4)	Germany	+50	56	5	—10	34	6	Bessel. Tab. Reg.
22	Gottingen	Ditto	+51	31	48	— 9	56	39	Ditto.
23	Greenwich	British Islands	+51	28	39	0	0	0	
24	Kensington (5)	Ditto	+51	30	13	+ 0	11	42	Mem. Astr. Soc.
25	Kew	Ditto	+51	28	37	+ 0	15	45	Bailey's Astr. Tab.
26	Konigsberg	Prussia	+54	42	50	—20	30	9	Bessel. Tab. Reg.
27	Kremsmunster	Austria	+48	3	29	—14	8	4	Astr. Nachr.
28	Madras	Hindostan	+13	4	9	—80	15	57	Taylor. Astr. Ob.
29	Makerstoun (6)	British Islands	+55	34	45	+ 2	31	0	Astr. Nachr.
30	Manheim	Germany	+49	29	14	— 8	27	51	Ditto.
31	Marseilles	France	+43	17	50	— 5	22	15	Ditto.
32	Milan (7)	Italy	+45	28	1	— 9	11	48	Ditto.
33	Modena	Ditto	+44	38	53	—10	55	48	Effem. Astr. Mil.
34	Munich (8)	Germany	+48	8	45	—11	36	38	Astr. Nachr.
35	Naples	Italy	+40	51	47	—14	15	4	M. Cacciatore.
36	Nicolœff (9)	Russia	+46	58	21	—31	58	46	Astr. Nachr.
37	Ormskirk (10)	British Islands	+53	34	18	+ 2	54	0	Mem. Astr. Soc.
38	Oxford	Ditto	+51	45	40	+ 1	15	23	Trig. Survey.
39	Padua	Italy	+45	24	2	—11	52	18	Astr. Nachr.
40	Palermo	Ditto	+38	6	44	—13	21	24	M. Cacciatore.
41	Paramatta	Australia	—33	48	50	—151	1	33	Philos. Trans.
42	Paris	France	+48	50	13	— 2	20	23	Ditto.
43	Petersburgh	Russia	+59	56	31	—30	18	57	Astr. Nachr.
44	Portsmouth (11)	British Islands	+50	48	3	+ 1	5	58	Trig. Surv.
45	Prague	Germany	+50	5	18	—14	25	28	Astr. Nachr.
46	Rome (12)	Italy	+41	53	52	—12	28	40	Ditto.
47	St. Fernando	Spain	+36	27	45	+ 6	12	16	Ditto.
48	St. Helena	South Atlantic	—15	55	26	+ 5	42	30	Lieut. Johnson.

(1) Marischal College.
(2) University.
(3) S. Giovanni.
(4) Seeberg.
(5) Sir James South.
(6) Sir Thos. Brisbane.
(7) Brera.
(8) Bogenhausen.
(9) Capo di Monte.
(10) Rev. W. Dawes.
(11) Church.
(12) Roman College.

BRITISH SHIPS AND BRITISH SEAMEN.—No. I.

IN the latter part of last summer, when returning to the metropolis from an excursion to the Isle of Wight, snugly wrapped up on the roof of the Portsmouth night-coach, my fellow-travellers were all jovial sons of Neptune, just paid off from a ship-of-war, after a three years and a half station in India. Fun and glee of course prevailed, and many and good were the jokes that passed amongst these light-hearted and happy beings. Much of their discourse turned on the service on which they had been last employed; the characters of their captain and officers, the other ships on the same station, and even the old Admiral himself, came in for a share of their witty and shrewd remarks. As often as we changed horses, the landlord was called to freshen hawse, as they termed it, and it was with difficulty that the coachman and I declined their pressing offers to share their beverage. "What, not share my grog, sir?" said one, handing me a glass; "then call for what you like better. I'll pay the damage."

There were two among them of a more sedate cast, who did not seem to enter into the spirit of the fun, but still without producing the ill-will of their companions, who treated them rather with a degree of respect. There was something striking in their appearance, and, from the moment I saw them, I felt a great desire to become better acquainted with them; for they seemed to me to want nothing but the long pigtail, or club-tie, to make them the very prototype of thorough-bred English seamen, the "Jack Stedfast" and "Steerwell" of the sailor's poet. They were both of Herculean build, and tanned a deep bronze. The elder, by allowing for the element he had been reared in, and the hard service seen, might have passed for about forty-six or eight years, and the younger for ten years less.

The coach rolled merrily on, and their shipmates, by repeated doses of their favourite nectar, sang, and sometimes roared, and at length talked themselves to sleep, so that I had an opportunity of learning the history of my two new acquaintances. Stedfast, as I shall hereafter designate him, had served seven years in the Jamaica trade, and just as his time as second mate was expired, had been passed into a man-of-war. It had been his misfortune to be placed on board a ship commanded by a proud young man, who considered that good order and discipline consisted in white decks, taut ropes, and reefing topsails in fifteen seconds; and who thought as little of flogging by the watch or station bill, by daylight as by lanthorn light. The noble spirit of Stedfast was driven to desperation, and his valuable services were lost to his country, through the caprice of a man who had no pretensions to the name of a seaman. The ship was in Prince Rupert's Bay, Dominica,

and he swam on shore, and took to the bush, without his clothes, trusting to Providence for the result. In spite of sharks and musquitos, he reached the hut of a poor negro woman, who gave him shelter and nourishment until he got a ship, in which he returned to England, waited upon his employer, who received him with open arms; and, when on the point of going out again in a fine ship, as chief mate, was again impressed, through an information laid against him.

However, he had better luck this time, for he soon found himself on board a fine frigate, with one of the smartest officers and best seaman in his Majesty's service. In this ship he shared the glory of two single actions, both successful, and conducted himself so well, that he was rated Quarter-Master, and steered the Captain's boat. Prize-money was plentiful, liberty was never refused when the duty would admit of it, and he served contentedly and happily until paid off in 1815; when, having passed three months in the most delightful of all occupations, in visiting and providing for the wants of his aged parents, and getting his sister settled with the man she loved, and comfortably established according to her station in life, he went to sea again. He now made several trips to India, in the last of which he became acquainted with his more youthful companion, Steerwell.

Stedfast being an intelligent and shrewd fellow, was not blind to the improvement daily making in the king's service; the amelioration in the general treatment of the men, and the superior advantages held out for steady and faithful servitude; so he made up his mind at once to join it, and stick by it as long as he was able "to crack a biscuit." He had little trouble in persuading Steerwell to do the same: on his return to England, an opportunity soon offered, of which they availed themselves, and had continued in the service, with little intermission, ever since. Stedfast had been rewarded with a medal and premium for good conduct, and was going to take his time out, which would entitle him to a good pension for life, of nearly thirty pounds per year, his time having been all petty-officer's ratings: he had refused the boatswain's and gunner's warrant on a West India station.

Steerwell, who had served seven years in the coal and Baltic trade, was a hardy and finished seaman, had served nearly fourteen years with zeal and credit, and was only going to see his friend Jack comfortably laid up in ordinary, when he intended to choose his ship and captain, and follow in his wake, looking forward to the same reward.

Daylight discovered to our view the dense cloud of fog and smoke which eternally hangs like a huge extinguisher over the mammoth metropolis, and I felt a strong desire to be useful to my two interesting fellow-travellers; they had received nearly £90, part in hand and part remitted to London, through the navy-office. I told them

who I was, and where I lived, and offered to take them to good, cheap, and honest lodgings. They appeared grateful for my offer, and accepted it in the same frank manner that I had made it. I took them in a hackney-coach to the house of a worthy couple in my own neighbourhood, where they were provided with good beds, their windows looking into some fields where cattle were grazing, which quite delighted them; they settled their board and washing at 14s. per week. I assisted them in putting their money in a saving-bank, instructed them how to get it when wanted, and left them in strict charge of their landlord. I am glad to have it in my power to say that their conduct was exemplary throughout; I saw them frequently, always with pleasure; they thanked me from their hearts, and told me the most piteous tales of their poor shipmates, many of whom had been plundered of their hard-earned wealth by a set of heartless wretches, who, to the disgrace of our legislators and ship-owners, are allowed to fatten on their plunder. How easy would it be for the latter to patronize, by municipal license, a number of honest and respectable boarding and lodging houses, and instruct their ship-masters, brokers, and pilots to recommend their men to them, and not allow any others to put foot on board their ships when returning from a voyage; they might also prevail upon them to put part of their wages in the savings-bank, as a stand-by, to fit themselves out when times prove bad.

Being much occupied by business, I had little opportunity of seeing my two worthy fellow-travellers; but, on reading the Nautical Magazine for October, 1835, in which "A Master of a British Merchant Ship" writes on the defective state of discipline in ships of the merchant service, I was taken by surprise at the picture drawn of our country's defenders and pride, and which was so diametrically in opposition to all I had imagined, and so palpably distinct from what I had seen in my two heroes, that I was determined to sift the matter to the bottom, for the credit of British sailors, and my own consolation. My two friends were still living quietly and respectably in their old quarters; I called on them early in the day, and, finding them perfectly at leisure to attend to me, I told them in a few words the object of my visit, and craved their attention to the article. I was requested to read it, which I did in the most distinct and emphatic manner possible, during which their honest and weather-beaten countenances underwent all the changes of Falconer's dying dolphin.

By the time I had finished, Steerwell had bitten his lips till they bled; and Stedfast, who had left his seat to conceal his emotion, exclaimed hastily, "Can it be possible, Mr. Ernest, that any one calling himself a master of a merchant ship, who, to be capable of fulfilling the duty of so responsible and important a situation, must have passed through the degrees of an apprentice, foremast-man, and mate of a ship, could have had the heart to compose and pub-

lish so monstrous and glaring a scandal as that, and in a work generally read, and perhaps which even His Gracious Majesty, through his regard for every thing that belongs to his profession, may condescend to look into. Surely the writer could not at the time have known or thought of the thousands of honest and hardy seamen who navigate at the risk of their lives our numerous coal, coasting, and Baltic traders. Those men, sir, who have to brave the dangers of an iron-bound coast, through a long, dreary, and tempestuous winter, when the very sands on the shore are whitened with their bones, and their widows and orphans left in thousands to deplore their loss; are they to be spoken of thus? And are those poor fellows, sir, who man our West India and North America ships, the former of whom die by hundreds of the plague-spot, and become food for sharks and land-crabs, while the latter are left to famish and subsist on their fellow-men, on the wrecks of the rotten tubs so often, when unfit for any other than the timber trade, sent to return no more; are they to be spoken of thus? when the owners are too parsimonious to save them from their miseries, by having a quantity of bread, pork, and water, secured on deck for a stand-by, and a good axe in the fore and main chains, to cut away a mast, if wanted to enable a water-logged ship to righten. And, sir, are the men employed in our enterprising South Sea and Greenland fisheries, saying nothing of the thousands of men, like Steerwell and myself, serving with zeal and credit in our ships-of-war; are we all, sir, to be described to our countrymen, by one of ourselves, who must be supposed to know us, as Buccaneers and determined villains? are the tens of thousands of British seamen to be doomed to perpetual ignorance, and told that they would as soon join in acts of lawlessness and bloodshed, as they would go to dinner? because one man finds himself at sea with a bad crew, which must have arisen from his own neglect; for, if he had proper and good seamen for his mates, and allowed them to ship his crew in the docks, by fleeting his stays and standing rigging, and fitting his spare sails, he would have had an opportunity of knowing his men; when, most likely, instead of which, he received them from some crimp at Gravesend, and sailed with one half of them drunk in their hammocks. And, because one of such a gang behaves in a violent manner, and two others of his gang break into his state-room, and steal his wine, most likely from the neglect of his mates or steward, are all the seamen in the country to be branded as lawless villains, and the Government called upon to enact laws to transport for life or seven years, for what every master of a ship may choose to call mutiny or general abuse? That will never do, sir, depend on it; but I allow, sir, that laws are much wanted in merchant-vessels, and let them be made; but do not let them be made by angry masters of ships, but let them be made by a committee of admirals, captains, elder brethren, with a

hint or two from the ship-owners' society; and it will be better to all parties, and none will benefit more than seamen; for, believe me, my worthy friend, that, for one act of mutiny on the part of a seaman, there are hundreds of brutal tyranny on the part of masters and mates; and, for one case of stealing wine from a captain, there are a thousand instances of the seamen being half starved, or fed upon decayed and unwholesome provisions; and, for one instance of a seaman refusing duty, there are many where they are unjustly imprisoned in foreign countries, (especially when there is not an Englishman for a consul.) And, as for many lawyers, what is a poor sailor to do to get redress, when, sir, if there was a court at every port, consisting of magistrates who had been to sea, or were well acquainted with sea affairs, to see justice done to us at the end of a voyage, we should be better off, and have no occasion for them; but the long and the short, sir, is this, the person who wrote that is no regular master of a merchant-man; in fact, he says as much himself, that he has passed as much of his life on shore as at sea. Now, there is no regular master of a ship can afford to do that; therefore, take my word for it, he is sailing under false colours, sir."

Steerwell, who had been all this time staring with astonishment at Jack's eloquence, turned round on his heel, as he instinctively hitched up his trowsers, and exclaimed, "Him a master of a merchantman, no such thing; take my word for it, he is some half and half chap, that just knows the difference betwixt a marlin spike and a soldier's musket. Why, sir, how should a regular master of a merchantman know any thing about the march of intellect, and man being an ungovernable animal, and the slave trade, and such stuff; or, if he be master of a merchantman, he has been brought up one of your guinea prigs, or walking candlesticks; one of them fellows that never takes any regular mates, but has a quarter-deck full of officers and gentlemen, as they call them, with a gang of midshipmen, not like Mr. Hamilton Moore and Femeris, or Ned Femeris, as they called him, that we had in our old barky we've just left. These chaps, sir, were always star-gazing, and crying out now, and stop; and if they got a fog for two or three days, in a sowester, in the channel, they would know no more where they were than Jonas did when he was thrown out of the whale's belly; fellows, sir, that couldn't find their way between the Bell of Portland and the Gasketts without a pilot."

It was pretty evident that my friends were waxing warm on the subject, and that Steerwell's youthful spirit would outbalance his prudence; so, wishing to see none of the dark side of what had always been my favourite picture, I took my leave of my friends, with a promise to meet the next day, and talk the matter over coolly.

On my way home, I could not help seriously reflecting upon the

conversation, and felt a particular interest and desire to come better acquainted with so important a subject: what, thought I to myself, can it be possible that in this great maritime country, whose very existence as a nation depends upon the number, value, and courage of her seamen, that we are without well-defined laws to support the captains and officers of a merchant-ship in the due execution of their duties, and insure a prompt and respectful obedience to their orders, for the government and preservation of the ship, cargoes, and lives, entrusted to their care; and, at the same time, to protect the seamen from ill-usage by word or deed, and secure him in his long and fatiguing voyages a liberal allowance of wholesome provisions and water, and a comfortable place to sleep and mess in; surely, amongst the numbers that are continually standing up, advocating their worth, and soliciting the public for subscriptions toward hospitals, asylums, orphan schools, and other laudable objects, there might be found some one individual of sufficient weight and talent to bring their general condition before parliament, and, to the numerous commissions, add one more, to inquire into the present state of the seamen employed in our mercantile navy. I cordially agreed with the "Master of a Merchant Ship," that here is a field for an independent member of parliament to build lasting reputation and honour upon, besides obtaining the gratitude of commanders, officers, and every honest seaman in the country.

Full of the idea of even making myself an humble instrument in this great work of regeneration, I went on 'change, where I met with a very old friend, who had been nearly his whole life on the ocean. Besides serving his apprenticeship when young in the merchant service, Lieut. Staysail had been impressed, and, without a single friend to assist him, had risen by his zeal and good conduct to the rank he held, and the peace of 1815 found him First Lieut. of one of our most active cruisers on the western station. From this period he had been constantly employed in the command of some merchant vessels on distant voyages; his numerous applications for active employment in the navy having been unheeded. We agreed to dine together, and to discuss the subject of the merchant service in general in the course of the evening.

"Depend on it, Mr. Ernest," said Lieut. Staysail, on our way home, "that Great Britain, with all her vaunted excellence and wisdom, is in danger of losing the right arm of her strength in the breed of tars, and, unless something is speedily done, we shall never be able to man a fleet fit to contend with either France or America, to our ruin and disgrace."

I pointed out to him the article in the Nautical Magazine, and related to him my conversation with Stedfast and Steerwell.

"Both are right, sir, both quite right," he continued; "nearly all the sailors employed in our East India and foreign trade are

monopolized, and in the power of crimps, who keep them back until the ships are on the point of sailing, so that their bad qualities may not be too severely scrutinized; and few ships sail without having one or more bad characters on board, who generally contrive to contaminate the younger hands, and seduce them to their party. This, and the want of properly qualified officers, combined with the parsimony of many of the ship-owners in the equipping and provisioning their ships, is the cause of most of the disturbances which too often disgrace our merchant navy."

Lieut. Staysail saw that I was much concerned in the subject, and, taking from his pocket the abstract of Sir James Graham's bill for the amendment and consolidation of the laws relating to the merchant seamen, and a little anonymous tract, called "Proposed Regulations for the Mercantile Navy," "Here, Mr. Ernest," he continued, "here are two productions, planned with the best intentions in the world; and one of them is from the senate of this country. But, sir, the advice of practical men is wanted in both of them."

Humboldt's Ascent of the Peak of Teneriffe.

The heat of Santa Cruz, which is suffocating, is in a great measure to be attributed to the reverberation of the rocks in its vicinity; but as the travellers approached Laguna they became sensible of a very pleasant diminution of temperature. In fact, the perpetual coolness which exists here renders it a delightful residence. It is situated in a small plain, surrounded by gardens, and commanded by a hill crowned with the laurel, the myrtle, and the arbutus. The rain, in collecting, forms from time to time a kind of large pool or marsh, which has induced travellers to describe the capital of Teneriffe as situated on the margin of a lake. The town, which was deprived of its opulence in consequence of the port of Garachico having been destroyed by the lateral eruption of a volcano, has only 9000 inhabitants, of which about 400 are monks. It is surrounded by numerous windmills for corn. Humboldt observes, that the cereal grasses were known to the original inhabitants, and that parched barley flour and goat's milk formed their principal meals. This food tends to show that they were connected with the nations of the Old Continent, perhaps even with those of the Caucassian race, and not with the inhabitants of the New World, who, previous to the arrival of the Europeans among them, had no knowledge of grain, milk, or cheese.

The Canary Islands were originally inhabited by a people famed for their tall stature, and known by the name of Guanches. They have now entirely disappeared under the oppression of a more powerful and more enlightened race, which, assuming the supe-

riority supposed to be sanctioned by civilisation and the profession of the Christian faith, disposed of the natives in a manner little accordant with the character of a true follower of the cross. The archipelago of the Canaries was divided into small states hostile to each other; and in the fifteenth century, the Spaniards and Portuguese made voyages to these islands for slaves, as the Europeans have latterly been accustomed to do to the coast of Guinea. One Guanche then became the property of another, who sold him to the dealers; while many, rather than become slaves, killed their children and themselves. The natives had been greatly reduced in this manner, when Alonzo de Lugo completed their subjugation. The residue of that unhappy people perished by a terrible pestilence, which was supposed to have originated from the bodies left exposed by the Spaniards after the battle of Laguna. At the present day, no individual of pure blood exists in these islands, where all that remains of the aborigines are certain mummies, reduced to an extraordinary degree of desiccation, and found in the sepulchral caverns which are cut in the rock on the eastern slope of the Peak. These skeletons contain remains of aromatic plants, especially the *Chenopodium ambrosioides*, and are often decorated with small laces, to which are suspended little cakes of baked earth.

The people who succeeded the Guanches were descended from the Spaniards and Normans. The present inhabitants are described by our author as being of a moral and religious character, but of a roving and enterprising disposition, and less industrious at home than abroad. The population in 1790 was 174,000. The produce of the several islands consists chiefly of wheat, barley, maize, potatoes, wine, a great variety of fruits, sugar, and other articles of food, but the lower orders are frequently obliged to have recourse to the roots of a species of fern. The principal objects of commerce are wine, brandy, archil (a kind of lichen used as a dye,) and soda.

Leaving Orotava, Humboldt and his party passed by a narrow and stony path, through a beautiful wood of chesnuts, to a place covered with brambles, laurels, and arborescent heaths, where, under a solitary pine, known by the name of Pino del Dornajito, they procured a supply of water. From this place to the crater they continued to ascend without crossing a single valley, passing over several regions, distinguished by their peculiar vegetation, and rested during part of the night in a very elevated position, where they suffered severely from the cold. About three in the morning they began to climb the Sugar-loaf, or small terminal cone, by the dull light of fir-torches, and examined a small subterranean glacier or cave, whence the towns below are supplied with ice throughout the summer.

In the twilight they observed a phenomenon, not unusual on high mountains,—a stratum of white clouds spread out beneath

concealing the face of the ocean, and presenting the appearance of a vast plain covered with snow. Soon afterwards another very curious sight occurred: namely, the semblance of small rockets thrown into the air, and which they at first imagined to be a certain indication of some new eruption of the great volcano of Lancerota. But the illusion soon ceased, and they found that the luminous points were only the images of stars magnified and refracted by the vapours. They remained motionless at intervals, then rose perpendicularly, descended sidewise, and returned to their original position. After three hours' march over an extremely rugged tract, the travellers reached a small plain callad La Rambleta, from the centre of which rises the Piton or Sugar-loaf. The slope of this cone, covered with volcanic ashes and pumice, is so steep that it would have been almost impossible to reach the summit, had they not ascended by an old current of lava, which had in some measure resisted the action of the atmosphere.

On attaining the top of this steep, they found the crater surrounded by a wall of compact lava, in which, however, there was a breach affording a passage to the bottom of the funnel or caldera, the greatest diameter of which at the mouth seemed to be 320 feet. There were no larger openings in the crater; but aqueous vapours were emitted by some of the cervices, in which heat was perceptible. In fact, the volcano has not been active at the summit for thousands of years, its eruptions having been from the sides, and the depth of the crater is only about 106 feet. After examining the objects that presented themselves in this elevated spot, and enjoying the vast prospect, the travellers commenced their descent, and towards evening reached the port of Orotava.

The Peak of Teneriffe forms a pyramidal mass, having a circumference at the base of more than 115,110 yards, and a height of 12,176 feet.* Two-thirds of the mass are covered with vegetation, the remaining part being steril, and occupying about ten square leagues of surface. The cone is very small in proportion to the size of the mountain, it having a height of only 537 feet, or $\frac{1}{23}$ of the whole. The lower part of the island is composed of basalt and other igneous rocks of ancient formation, and is separated from the

* Various measurements have been made of the height the Peak of Teneriffe; but Humboldt, after enumerating fourteen, states that the following alone can be considered as deserving of confidence:

Borda's, by trigonometry . . .	1905 toises.
Borda's, by the barometer, . . .	1976
Lamanou's, by the same, . . .	1902
Cordier's, by the same, ...	1920

The average of these four observations makes the height of 1926 toises; but if the barometric measurement of Borda be rejected, as liable to objections particularly stated by our author, the mean of the remaining measurement is 1909 toises, or 12,208 English feet. It is seen above, that the height adopted by Humboldt is 1904 toises, or 12,176 English feet.

more recent lavas and the products of the present volcano by strata of tufa, puzzelana, and clay. The first that occur in ascending the Peak are of a black colour, altered by decomposition, and sometimes porous. Their basis is wacke, and has usually an irregular, but sometimes a conchoidal fracture. They are divided into very thin layers, and contain olivine, magnetic iron, and augite. On the first elevated plain, that of Retama, the basaltic deposites disappear beneath heaps of ashes and pumice. Beyond this are lavas, with a basis of pitch-stone and obsidian, of a blackish-brown or deep olive-green colour, and containing crystals of felspar, which are seldom vitreous. In the middle of the Malpays or second platform are found, amongst the glassy kinds, blocks of greenish-gray clinkstone or porphyry-slate. Obsidian of several varieties is exceedingly abundant on the Peak, as well as pumice, the latter being generally of a white colour; and the crater contains an enormous quantity of sulphur.

The oldest written testimony, in regard to the activity of the volcano, dates at the beginning of the sixteenth century, and is contained in the narrative of Aloysio Cadamusto, who landed in the Canaries in 1505. In 1558, 1646, and 1677, eruptions took place in the isle of Palma; and on the 31st December, 1704, the Peak Teneriffe exhibited a lateral burst, preceded by tremendous earthquakes. On the 5th of January, 1705, another opening occurred, the lavas produced by which filled the whole valley of Fasnia. This aperture closed on the 13th of January; but on the 2d of February, a third formed in the Canada de Arafo, the stream from which divided into three currents. On the 5th May, 1706, another eruption supervened, which destroyed the populous and opulent city of Garachico. In 1730, on the 1st September, the island of Lancerota was violently convulsed; and on the 9th June, 1798, the Peak emitted a great quantity of matter, which continued to run three months and six days.

North Atlantic Hurricanes.

Although those violent tempests called hurricanes are experienced in most part of the West Indies, from the tropic to the twelfth, and occasionally to the ninth degree of latitude north, it is highly probable, indeed almost certain, that they originate in the *variable* latitudes to the northward of the tropic. Their course, too, is not direct, but, on the contrary, eccentric; the aërial current, as it were, seeking to escape by pursuing a devious path through vacuities. This property, which appears extremely curious, and, on first reflection, improbable, seems nevertheless to be consonant with the truth, and arises probably from the superior and colder stream suddenly flowing into different and unequal portions

of the lower atmosphere, rarefied to a much greater degree than the surrounding medium, which latter has been the consequence of a continuance of light airs and calms, admitting the full power and effect of a vertical sun in those *particular* parts where this diminution of wind takes place; but *why* in those *particular* parts, unmarked by any divisional boundary, this want of action in the air should originate without becoming general, or extensively diffused over the circumjacent sea, is a question we cannot pretend to solve, neither has it, we believe, been fully and philosophically considered in the abstract. In treating of wind, and *calm*, over the ocean, we look for solutions alone above the surface; may it not be as well to consider that something beneath may have influence in these cases also? Wind we know often lessens on approaching extensive submarine banks. The subject, if taken up by practical men, may lead to results at present not contemplated.

Before the fact was known, who would have conceived that a mass of (apparently) mere rock on the land, would, even at some distance, disarrange the polarity of the compass magnet? These *local* calms are undoubtedly a curious circumstance, as are also the regressive nature of the sea-breeze,* and the opposite currents of air often observed in these seas.†

The theory of hurricanes does not seem to be yet arrived at perfection, and perhaps never will; the causes may in a great measure be understood, but the *modus operandi* of nature has never been clearly explained. There is no reason for doubting, that in the first instance, the principal agents in the mystery are—heat, cold, and electricity; but our familiarity with such scenes hitherto has produced little more than that of tracing the causes, and describing the effects; and, until very lately, no one seemed to be sensible of the extraordinary deviations from a direct course, which many, if not most, of these storms pursue.

* On the coasts of Jamaica, this is principally observed between the east end and Port Royal. We have several times seen vessels in-shore running down with the sea-breeze, whilst others farther in the offing have been without a breath of wind. Its occurrence is early in the day, and may proceed from the sea-air *nearest* the land being *first* attracted when the difference of temperature changes. As the land gets *heated*, which it does rapidly, the now *cooler* air over the sea moves towards the warmer over the land; and the "trade," which had, as it were, been checked, soon assumes its wonted energy, and comes blustering on, an agent of true delight to man.

† We do not allude to those aërial currents which are observed at unequal altitudes, but to opposite veins of wind moving on the same plain. In the first instance, the currents seem to move in horizontal strata, and, by their motions, the clouds to slide along amicably, as it were, one over the other; but those winds which blow in contact with the earth's surface, on the contrary, (except very near land,) may be said to move in narrow vertical strata, passing without interruption side by side: these we have several times experienced. We have in a ship been steering west, and another east, at a short distance apart, both with studding-sails set; again, we have seen two ships approaching in direct line, both *before* the wind that filled their sails!

The calculations which have been made respecting the age of the moon determining the days on which hurricanes fall, appear to be unsatisfactory, in as much as in twenty-one cases nine only were coincident. We confidently believe it will be found, that the sun's place, and his effect, has more to do with the phenomenon than the "silvery queen" of night.

In these storms there is generally, if not always, a shift of wind from the point the gale commences; but in none of those we have experienced did the wind "fly round" the compass in the extraordinary manner which it does in the furious squalls in the vicinity of the "Enchanted Isles," the Bermudas.*

Although we may be satisfied that differences of temperature, &c. are prevailing causes in the production of hurricanes, yet it appears difficult to account for the manner in which the aërial currents of the middle regions of the atmosphere descend toward, or flow into the lower, and perform their gyrations. The shifting of the wind to an opposite point is a curious circumstance, as it blows towards the direction whence the storm arises, and the colder air descends; may we not account for the reaction, by supposing the aëriform fluid to be susceptible of a *convolving* motion;† that, whilst in its descent, it repercusses, and pursues a course nearly opposite to that which it follows in its entry to the spaces rendered light by heat and calm, without the power of alteration, by the pressure of the denser air which follows, until the equilibrium be restored? We merely put this as a question, (let the theorists decide,) having never seen any notice of it, and we do not at present perceive any other way of accounting for the shift of wind, in this particular instance, to a point opposed to its original source.

It seems also extremely probable from all the accounts, that, independent of the actual course of the prevailing wind, there is a *divergent* motion of the whole body of the agitated aërial fluid, wrapped, as it were, in an envelope, fluctuating as a bubble does,

* These sudden and violent gusts of wind, which alternately proceed from all points of the compass, appear to owe their origin to a similar cause to that which one of the intelligent writers in the Naut. Mag. (see Sup. Dec. 1834) supposes the tropical hurricanes near the line to do.

A rapid rarefaction of the atmosphere in a particular space, would seem sufficiently obvious upon these occasions, to account for the extraordinary fact of the wind rushing towards a centre. The phenomenon may be considered as a sort of whirlwind in an incipient state; the veins of denser air in the extreme boundary of the gyrating circle *darting in* with extreme *violence* towards the most attenuated part; and the intervals of *dead calm* would seem to stamp it such. But the subject requires to be handled by the practical natural philosopher, or by some of our clever nautical savants. ‡

† We do not conceive this quere undue; the wind, or air, when in motion, we know has the property, occasionally, of a spiral motion; why not a convolving one?

‡ How much science would benefit, if Sir J. Herschell were to make the detour of the world on his return home.

now towards this point, and now to that, without interrupting the progressive motion. The reader who has paid attention to the convolutions of a whirlwind, when its progress becomes visible, from the particles of gross matter it takes up in its course, will fully understand our meaning; and he who has read the various accounts of West India hurricanes will probably agree with us, that something of this sort must take place. It would be possible, under this circumstance, for a baloon that starts from Barbados (for instance) in a hurricane blowing, (say west, due,) to be dropped on St. Domingo, to the north-west, instead of the Musquito shore, which lies in the parallel of the former isle, and without the wind having altered its first direction. The whirlwind, as every body knows, has two motions* coincident, a lateral and a progressive one, and the hurricane is but an effusion of air gyrating on a larger scale.

In some hurricanes the extreme violence of the wind appears to be confined to certain narrow limits. In a frigate, we felt the "tail" of the furious storm experienced by H.M. ships Hercule and Theseus in September, 1804; and, although not at any great distance apart from those ships, it was considerably less severe with us than with them. The weather portending a storm, we anchored in Cumberland harbour, in Cuba. At noon on the 5th the hurricane may be said to have set in, with the two ships of the line, from the north-east. It did not reach us until midnight of the 6th. Our distance from the scene of action might be taken at about 300 miles, and, as the velocity of the wind during hurricanes has been estimated at eighty miles an hour, it ought to have reached us in rather less than four hours, whereas it did not do so until the lapse of thirty-six hours; it came first from the same quarter, (north-east,) and afterwards shifted to the south-south-east, continuing to blow strongly until the 9th. I shall not pretend to offer a solution of this curious circumstance, but leave it to those who are versed in pneumatics.

A Spanish and an American schooner came in, in great distress, on the 7th; they were caught by the storm between St. Domingo and the Bahamas. For a week before the 5th the winds had been extremely variable, and generally light, varying from east to south-south-east. The *thunder* which accompanied the lightning shewed that we were on the *very outskirts* of the storm; which was the fact, as it did not reach Jamaica, but crossed the eastern part of Cuba, making a sweep to the northward, and ultimately blowing from the west, upon the two line-of-battle ships named. It appears that the changes of wind were gradual; the ships were to the northward of the Square-Handkerchief Shoal.

There is reason for believing, that if the squadron under Commodore De Courcy had not entered the region of the *variables*, it would have evaded the hurricane. Perhaps the best course that

* In fact, it may be said to have three—the third spiral.

could be pursued during the season of hurricanes, by ships bound from Jamaica to Barbados, would be, in the first place, to work up along the north side of Hayti, and, proceeding through the Mona Passage, stretch away (supposing the north-east trade to be blowing) in the larboard tack. Southerly and variable winds may be expected at that season; and if met with, should there be no hurricane, the voyage will be greatly shortened; at all events, the *neutral* line, beyond which these storms *do not reach*, will be under the lee on the first onset, at no great distance—a consideration not to be despised.

In the route which we took, we were forty-two days out when overtaken by the storm, and were then 786 miles from our destination! a period double that which it ought to have taken us, as a single ship, to have reached England.

In February, a sloop-of-war made the passage from Port Royal to Barbados in twenty-four days, to the northward of the isles. She was, however, alone, and a swift vessel, having completed a voyage from Jamaica to England (from port to port) in four weeks and six days.

We are aware that the general route to Barbados is outside of the islands; but it is not improbable that prejudice, more than experience from fair trials, has given rise to this plan generally: the old adage, that sometimes "the *shortest* road home is the *longest* way round," may be advanced as applicable in this route; no doubt, during the *steady continuance* of the trade-wind it may be, and then perhaps the best plan would be, first through the Florida channel, and take the off-shot of the stream into the *variables*. During the season of hurricanes, however, we are of opinion that it can *no longer apply*; and we think all old West India voyagers would agree to this.

Hurricanes, although so much dreaded on account of their danger, and the devastation they carry over the lands they strike with their appalling force, are unquestionably a source of health and renovation, in the enervating clime, and often unhealthy state, of the weather of the West India islands. Individuals suffer, it is true, but

"All partial evil is universal good."

at least, the most sceptical may safely admit it in this instance.

The utility of the marine barometer has become so well known, that it would be superfluous to say any thing in advocacy of it, and although rather sluggish within the tropics, the approach of these violent storms seems to affect the sensitiveness of the mercury sufficiently to give due notice.

If, with the suspicious prognostic of light variable winds, the clouds should be seen gathering in dense masses, and eventually excluding every part of the blue sky, and the additional warning of the barometer, from the depression of the mercury, prompt mea-

sures should be taken to make every thing snug. Two days' meat should be cooked without loss of time, and a proportion of spirits got up. Topgallant-mast and yards down, jib-boom in, &c.; top-masts struck; and, in small vessels, topsail-yards sent down, or otherwise securely lashed; and the lower yards lowered, and topped up to leeward; guns double-breeched, and cleated; all the cutting instruments in readiness; chests, shot-boxes, &c. either well secured, or struck down into the holds; hatches battened down; pump-gear examined, &c.; and the lower rigging secured by a turn or two to the bulwark, the more readily to cut it, should the masts go: in short, every precaution taken to meet a furious tempest.

Such preparation would, in all probability, save the masts, unless the ship be unwieldy, as was the case with the Centaur; at all events, it would be satisfactory to the commander, though his masts should be carried away, to feel that all that human caution and foresight could effect had been done. In a sloop-of-war we once laid-to during a severe gale, with lower-yards and topmasts struck; the little ship behaving to admiration, evidently relieved by the top hamper being reduced.

Opinions may differ as to the propriety of laying to, or of scudding. Excepting in a steady gale, such as the American north-wester, scudding may be considered as perilous; seamen are well aware of this, especially where the seas are heavy, and shifts of wind sudden; and, with low-hulled vessels, the chance there is of being pooped makes it particularly so. In this class of vessels, it should perhaps be considered, that, once before the wind and sea, there will be no bringing to, without almost a certainty of being overwhelmed; it is a nice point to be managed in a good-sized ship. The Pert, a little war brig,* ran before it homeward from the West Indies, with something like expectation floating in the minds of the officers, that some of the topping hoary-headed aqueous pinnacles that aspired to her masthead, would wipe her away altogether from the face of the ocean. Every body wished she was lying-to, but there was no trying the experiment; a spar lashed to a hawser was veered a short distance astern, and served to divert the seas that menaced the little craft. Some have recommended a *whole* hawser upon such occasions: with deference to the opinions of others, we do not think it so well as a short scope, as the seas are apt to give it a twist to windward, and which may trouble the steermen, if it should not endanger the vessel. One of the most extraordinary, and indeed (for the moment) impressive sights we recollect to have witnessed, was that of a large sloop-of-war scudding in a tempest, being pooped and nearly broaching-to. She was not a mile from us, and we were looking at her at the time, and remarking on the want of caution in scudding with a lofty breaking sea on, without a topsail, her reefed fore-course

* She had been a Yankee "clipper."

being alone set, when a tremendous wave overtook her, the foresail at the moment being becalmed by her depression, and completely hid her hull from our view! It was a sight that made the heart leap; the foaming crest of the wave reaching full half-way up the mainmast. She spun round to windward (the helm's-men being washed away) like a top, but as speedily rounded back again, and, we speak it with feelings of delight, almost the same instant the men were upon the yard, and the maintop-sail sheeted home! It was altogether, though sudden, and of short duration, a beautiful and affecting circumstance; had her hatches not been battened down, she might herself have foundered; as it was, a good deal of water must have got below, as her scuppers were pouring it out as long as we had her in sight.

We hope we shall not be thought tedious by the *old hands*, to whom these things are familiar. They can pass, if it be their pleasure, our descriptions by.

We hold it good, however, Mr. Editor, to illustrate points; it has the utility of making these clearer, as well as often relieving jejune subjects of their deficiency to interest.

In hurricanes, to scud, or not to scud? that is the question. One point requires imperatively to be considered, and attended to —the shifting of the wind; if, therefore, you are determined to go before it, wait, if at liberty, until the wind gets round to the southward, which it generally has done in the West India hurricanes. When this crisis arrives, if you have not lost your masts, and it be your pleasure to start in the race, you will do so now perhaps with less risk. If you go off on the first setting in of the storm, you will have to surmount (or *succumb* to, mayhap) the very ugly incident mentioned above, the shift of wind; and if you go round (instead of *down*) you will run back nearly whence you came, and have the additional comfort, too, of companionship with the genii of the storm, besides the unpleasant, and often dangerous, chance of being pooped. In a hurricane, let no man build his exemption upon the height of his ship's stern, because it has been asserted that waves rise no higher than twenty feet; the St. George, 98, was *washed* clean fore and aft.

Perhaps lying-to will be found the safest plan; for, if the source, or rather entry, of the superior stream of wind *shifts*, as the spaces of rarefied air below become replenished, as also by the attraction of those still to be filled, of which there seems little doubt, then it would be preferable to the other. Experience ought to settle this point; but unfortunately it has not been attended to by our men-of-war, who have been together in these western storms. It seems highly probable, however, that, by not proceeding with the wind, you are the more likely to be relieved of its greatest fury, especially if the lateral movement be admitted; much will, too, necessarily depend upon the individual discretion, experience, and sound judgment, of the commander.

Venice, May 1, 1835.*

MR. EDITOR,—Having seen the Nautical Magazine lying on the table of the Marquess Paulucci, commander-in-chief of the Austro-Venetian navy, this morning, reminds me that possibly a letter from one of the principal Italian seaports, and more particularly from the head-quarters of the Austrian marine, may not be unacceptable to many of your readers.

It is not of Venice, queen of the Adriatic—conqueror of Constantinople—"Christendom's bulwark 'gainst the Ottomite"—that I would now write; albeit, not unmindful of her bygone glories. Nor is it of Dandolo, or Galileo, or Marco Polo, or of the brothers Zeno, or of Cabot, or even of the very curious maps of Andrea Bianco,† or of Frà Mauro,‡ although more legitimate subjects to employ a sailor's pen; but of Venice as she now is, as far as regards her naval establishments and maritime commerce.

To begin, then, with the arsenal of Venice, probably the most ancient in Europe, having been founded in 1104, about the time of the first crusade. It is situated at the eastern angle of the city, and covers an extent of about 80 acres, holding an intermediate rank between Portsmouth and Toulon, the former of which is 100, the latter about 60 acres: it is in form nearly square, the northern point washed by the sea, or laguna, the other three sides enclosed by canals, thus rendering it insular. It contains two large and two small basins, covering an extent of 30 acres, in which more than the Austrian navy might lie and refit; around are placed the building-slips, which at one time amounted to the extraordinary number of 55; all, excepting four, covered with standing roofs, under which the famous Venetian gallies were built. Many of these have since been converted into store-houses, &c. but upwards of 20 still remain, among others three for 80-gun ships; on one of which was built the Rivoli, (afterwards captured by the Victorious, in 1811.) Two communications with the sea exist, one at the north-east, the other at the south-west angle of the yard. Here are no docks, a great defect, but every convenience for heaving down; sail-loft, store-mast, and boat-houses, as requisite.

The rope-house is a fine building, of 1050 feet in length; the hemp chiefly used comes from near Ferrara, and is said to be superior to Russian; 1600 tons of it are annually exported to Great Britain. Here is a good park of artillery; the brass cannon are cast on the spot: those of iron come from Vienna.

* The letter of our esteemed correspondent, by some accident, has been delayed.—ED.

† The map of Bianco, under date of 1436, represents a large country in the Atlantic ocean, and names it "*Antilia*;" Columbus sailed to discover America in 1492.

‡ The map of Frà Mauro Camaldolese bears date 1459, and is the first that represents Africa with a southern termination; and, doubtless, contributed to the discovery of the Cape of Good Hope, by Bartholomew Dias, in 1486.

The model-room contains a collection of curious plans, &c. among others the model of the famous Bucentaur, upwards of 100 feet long, in which the Doge on Ascension-day embarked for the ceremony of espousing the Adriatic. The last of these magnificent gallies was burnt by the populace in 1797; a small piece of her main-mast is alone preserved.

In the armoury is a singular mortar, made of rope, with bands of iron; a first attempt at artillery, and said to have been used against the Genoese in 1349.

About 500 men are employed in the dock-yard. On the slips are two transports and four gun-brigs, building; a 46-gun frigate hauled up for repair, and another in the basin; besides a fine corvette ready for sea, and some small vessels.

No great supply of timber is in the arsenal, yet the stores, well arranged, have every thing ready for use; thanks to the exertions of Admiral Paulucci, the commander-in-chief, who is an active officer, and indefatigable in his attention to the dock-yard; nor would it be just, if I did not notice the extreme civility I have met with from him, from his flag-lieutenant, Baron Accurti, and all the officers connected with the public naval establishments here, and their readiness to give information in every thing relating to the profession. The navy coasists of 28 vessels of war: 4 frigates, of 46 guns; 6 corvettes, of 20 guns; 5 brigs, and the rest small craft; the whole manned by 3000 seamen, 800 marine artillery, under the immediate command of Colonel Vitaliani, who has suggested several valuable improvements in locks, sights, &c. and about 1000 marines.

Adjoining the dock-yard is the naval college, where 50 boys are instructed in every requisite branch of education; the course occupies five years, and two months of each year are passed cruising in a corvette, thus enabling them to add practice to theory. The superior professor, Emilio Tipaldo, is well known in the literary world in Italy; but the active superintendant is Signor Bordigni, Capitano di Fregata, and under his management the whole appears orderly and well conducted. The young men are obliged to learn French and English, or German; a rule not unworthy imitation nearer home; as to no one is the knowledge of foreign languages of such practical use as to a sailor. I conversed with several who spoke English fluently. The expense to government is about 1000 florins, or £100 per annum each boy; to which the parents contribute about £45: all who enter the navy are brought up here.

Venice, you may remember, was declared a free port in 1829; since which her trade has much revived. In 1831, the value of merchandise imported into Venice amounted to £850,000, of which £115,000 came from England, and £240,000 in olive oil from the Ionian Islands, during which time the exports were £350,000.

In 1833, the imports had increased to £1,460,000, of which £860,000 were from Great Britain.—Exports £528,000, of which £220,000 were to Great Britain.

In 1833, arrivals including coasters . . . 3162
sailings 2123

A steamer of 50 horse-power, fitted with Morgan's paddle-wheels, runs twice a week to Trieste, and in 1833 carried 7000 passengers to and fro. The port-charges upon a national vessel of 250 to 300 tons about 5 guineas; upon a foreign vessel 20 guineas, including a tonnage duty of 8d. per ton.

The population of the Venetian provinces, in the year 1832, was 2,011,852; of the city of Venice 113,364; in the province 17,000 sailors, including gondoliers and fishermen. In Venice are 149 canals, crossed by 386 bridges, and it is surrounded by three great lagunes, or salt-water lakes, covering upwards of 400 square miles; unfortunately these lagunes have very shallow water, so that large ships, as the Rivoli, &c. are obliged to be borne over the shoals upon camels to the port Malamocco, distant six miles. But if the great dyke, a colossal work, begun by the French at that port, should ever be finished as proposed, a deep-water channel will be obtained; an invaluable gift to a city so singularly situated in the midst of the sea as Venice.

Ever, Mr. Editor, your sincere well-wisher,

JOHN WASHINGTON.
Commander, R.N.

TEMPORARY RUDDERS.

To the Editor of the Nautical Magazine.

SIR,—H.M S. Pique having been brought home without a rudder, (some account of which I read in your number for this month,) reminds me of doing that which I have often before thought of; namely, requesting that you would give, or obtain for us, some information as to the best method of steering a ship with a temporary rudder. This is a subject which sea-going people are, generally speaking, little acquainted with; indeed, it is one of those remote contingencies which we speculate upon as too far distant to require our attention. Your Magazine should contain an article upon this subject, which, if none of your correspondents supply you with, you, Mr. Editor, can readily produce yourself; and I hope you will let us have a good account, with drawings, of the most approved plans. The account in this month's Nautical Magazine alluded to, mentions those of Captain Symonds and Pakenham, of both of which I confess myself quite ignorant; therefore, pray oblige us with an article on this head, which shall do for a reference or guide, when such a misfortune occurs as loss of a rudder at sea. Your valuable publication is indeed

already becoming a collection of such useful nautical information, that we have only to consult the index of the volumes already published, to find one's knowledge increased on almost any subject connected with nautical affairs, and I expect to see it acknowledged, (and, what is better, adopted,) as a complete seaman's library; therefore, pray give us something on rudders that shall embrace all the existing knowledge on that point.

As I praise your work, it must be supposed I read it, and therefore it cannot have escaped me, that you have given upon one occasion a very complete description and drawing of a "real seaman's" rudder; the proper production of a boatswain. Mr. Unwin is an ingenious man, and no doubt a good boatswain, his rudder is just what a man of his station would naturally think of, and is, in description, a very seaman-like and especially *boatswain-like* job; a rudder produced upon the forecastle—but little, I think, fit for the other extreme of the ship. To say nothing of the whole mass becoming soon in the state of old rope in a paper mill, there is nothing in the shape of a rudder, so completely depending upon rope both for its security and guidance, as Mr. Unwin's; it would be adrift in twenty-four hours bad weather, from chafing. I have myself been steering (the main-piece of the rudder being broken) with rudder, pendant, and tackles, brought over the quarters to the capstan; and any one who has ever had to depend upon such means, knows that nothing will long stand the chafe of rope so used; much less, when, as in Mr. Unwin's plan, the rudder itself has to be attached to the stern-post with a multitude of brackets, and guys, and tackles; the brackets, crossed, would not endure twenty-four hours, however parcelled and served. I fear, indeed, that more or less all the schemes for temporary rudders, to be fixed in the place of the original one, must be too much dependent upon guys, pendants, &c. for any great reliance to be placed upon them, which, however, may perhaps be in some measure obviated by the substitution of chain for rope; but I question even if this would stand long, as it must necessarily be small: the chafe in every thing connected with a temporary, and necessarily in some degree a *loose rudder*, is beyond any thing that can be provided against; and this, no doubt, was found to be the case in the Pique, when she was obliged to cut away two temporary rudders—and those doubtless of the best known construction.

Pray tell us, Mr. Editor, how was the Pique steered "one thousand four hundred miles without *rudder*."* She seems to have gone like a witch, and without difficulty, when before the wind, and when found broached to by the French brig, and by her got before the wind, she was off like a shot without saying good-by. Your information might have been a little more complete, and

* Perhaps an officer of the Pique will answer our correspondent.

have told us how she was steered "one thousand four hundred miles across the Atlantic:" you do inform us, that when she weighed, and left the position where she anchored off the Casketts, that she was steered by a cable with a gun-carriage at the end of it; this said gun-carriage, (if such with the cable was the rudder by which she was steered "one thousand four hundred miles,") must have kicked up "the devil's own delight" when towing in bad weather.

I will only now add my own idea about steering a ship by temporary means—and that is with a moderate scope of iron stream cable, without any thing attached to the end, payed out over the stern right amidships, rove through a large iron viol, or rouse about block, lashed to the taffrail (a block large enough, and fit for this purpose, all ships should have) with tackles upon it, close into the side, and the falls brought to the wheel, or capstan, if necessary; if these tackles were attached to an out-rigger, say a spare topmast passed through the two aftermost ports of the quarter-deck, so much the better, a *smaller helm* would then be required.

I don't see why a ship may not be as well steered by such means, as with the ordinary rudders; she could hardly broach to, with much way upon her; and if in a lull she loses her way, as the Pique appears to have done, and becomes unmanageable, the chain hanging up and down, the ship's head must pay off when there is the least wind; or even the sea alone, if running heavy, would prevent the necessity of recourse being had to towing, as in the case of the Pique, to get her before it again.

If it should become necessary to heave to in a vessel so steered, rouse in the chain abaft, and pay out of the weather hause a small scope of the bower chain; which will keep her to, without any after sail. This plan, however, of managing a ship after loss of rudder, I only submit to the criticism of such of your readers as may take the trouble of favouring the public with something better; to obtain the knowledge of which, is the object of this communication.

A Master of a British Merchant Ship.

November, 1835.

We thank our correspondent, and will adopt his suggestions; indeed, we had meditated collecting some materials on this important subject, and, in the mean time, shall be thankful to any of our readers who will forward us their own plans of a temporary rudder.—Ed.

Suspension Pier.

To the Editor of the Nautical Magazine.

Sir,—The several projects now in agitation for the erection of landing piers on the banks of the Thames, although matters of great public convenience from the increasing adoption of steam-boat traffic, will probably be productive of some inconvenience to the navigation of the river Thames. It therefore becomes a consideration of great importance to take such measures for effecting the desired object, as will be the least liable to the creation of the evil above alluded to; and, having myself, on the first agitation of these projects, given much consideration to the subject, perhaps the following remarks may be acceptable to some of your readers.

As obstacles to the current of the river Thames is an evil which should be particularly avoided, it is unnecessary to make any mention of piers built of brick or stone, as they must necessarily occupy much space below the surface of the water; wooden piers must also be excluded, from their want of durability; and I have, therefore, confined my observations entirely to a comparison of the merits of those on the suspension principle, and of cast iron, both of which have been proposed.

Since the first introduction of suspension bridges, although a late period, their application has increased very rapidly, and we are much indebted to Captain Brown, and others, for the service thus rendered to the country. They possess the advantage of being independent of the bed of the river, and may thus be constructed over chasms, and in situations where it would be impossible to construct any other bridge. Another valuable quality is, the facility and expedition with which they can be built, the small amount of materials required, and the consequent economy.

These advantages, as Drewry remarks, in his work on this subject, added to the elegant lightness of suspension bridges, have combined to throw a degree of charm over them, which is, perhaps, becoming exaggerated, and may lead to their adoption in unfitting situations.

The economy of suspension bridges proceeds chiefly from the great spans of the arches which may be employed, and the saving of intermediate supports or piers which in stone bridges form commonly the chief part of the expense; in chain bridges, no other masonry being required than is sufficient to form a proper support for each end of the chains on the banks of the river, and where the shores are rocky, and afford natural facilities, the economy of these constructions is very great.

A pier jutting out into a river has, however, none of these advantages; the length is short, and an artificial support has to be constructed below low-water mark, to retain one end of the

chains; and, as in the river Thames the rise and fall of the tide is very great, and, consequently, the height of the pier-head very great, its magnitude, to give it sufficient weight to act as an efficient support, must be such as to create a considerable expense, and to offer a most injurious obstruction to the current. Chain piers have certainly been employed with some advantage on the sea-shore, but here a great length is required; and, although the pier-heads are of large dimensions, the great length compensates for the additional expense; and the obstruction they offer to the motion of the water is a matter of no consequence.

A pier of cast-iron arches, and supported upon iron pillars, might certainly be built at less expense, in such situations as the shores of the Thames offer; and, by the introduction of iron ties to take off the abutting force, no greater pier-head would be required than is sufficient to afford proper room for landing; and, the pillars having to support simply a vertical dead weight, might be made so small as to offer less resistance to the motion of the water than could possibly be effected in a chain pier, where there is a great horizontal stream to contend with.

Having thus pointed out, generally, the simple facts upon which my opinion in favour of a cast-iron pier is founded, I do not conceive it necessary to consume any further space of your valuable journal; but beg to state, that the same opinion is borne out by a detailed examination of the subject, and that there are several other important points decidedly in favour of the plan I propose, which the limited space of this article have not permitted me to describe.

I am, Sir, your obedient servant,

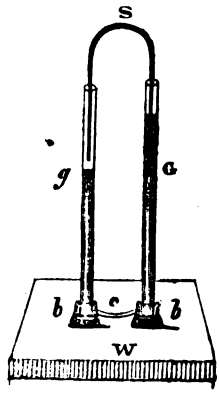
PETER W. BARLOW, Civil Engineer.

2, Manchester Buildings, Westminster.

OCEANIC CURRENTS.

To the Editor of the Nautical Magazine.

SIR,—In the 43d number of your magazine, and in an article on currents, I described, in a summary way, an experiment made to shew, that in channels of communication between seas whose waters were of unequal densities, a surface current of the lighter fluid ran in one direction, and an under current of the denser medium ran in an opposite direction, at the bottom. One of your correspondents, in his endeavours to repeat the experiment, has been unsuccessful; he has invited me to describe more fully the apparatus and mode of making the experiment. In compliance with his wishes, the following diagram and brief description will enable him, as well as others, to make the experiment with success; and, at the same time, he will probably discover the cause of his previous failure.



W is a wooden stand, about 14 inches square, and 2 or 3 inches thick.

G *g* are two glass tubes, closed at the bottom, and firmly fixed in brass sockets *b b*.

C is a small glass tube, communicating with G and *g* at the bottom.

S is a glass syphon filled with oil, forming a communication between the surface of the fluids, and represented in the diagram as being ready for use.

The apparatus being prepared, water is to be poured into one of the tubes, and allowed to pass through the channel of communication C, until both tubes are nearly half full, and the surfaces on a level. Oil is now to be poured upon the surface of the water, in one of the tubes, say in G. The oil, resting upon the surface of the water and not mixing with it, will exert a force equal to its weight, and will cause the water to descend in G, and pass through the communication C into *g*. Continue to add oil, until all the water passes into *g*, stopping in time, lest oil also should pass through C, and rise through the water as a floating body!

We have now nothing but oil in one tube, and water in the other; and it will be seen that the surfaces stand at heights inversely proportional to the specific gravities of the fluids. The glass syphon is now to be filled with oil, and its ends inserted into the tubes G and *g*, as shewn in the diagram; now, the surface of the oil being higher than the surface of the water, a current of oil will flow throw the syphon to a lower level, and rest upon the surface of the water in *g*. This circulation diminishes the weight of the column in G, and increases that in the adjacent tube, destroying the equilibrium of pressure at the bottom. The water will now be seen returning through C and rising in G; and this circulation will continue until the equilibrium is restored, when there will remain an equal column of water and oil in each tube.

The oil being the lightest fluid, its surface stands highest; it flows through the syphon to a lower level, and represents a *surface current*. The water being specifically heavier than oil, its surface is lowest when their pressures are in equilibrium in C, but the surface current destroys this equilibrium, and produces the *under current* through C, in an opposite direction to that at the surface.

Some attention and care is required in conducting this experiment. If the syphon be very small, oil will not flow through it, on account of adhesion or capillary attraction. The oil should be warm, thin, and clean. The water should be completely saturated with salt, to increase its density. But the most easy and elegant

way of making this experiment, is by using quicksilver and water. The surface of the water will stand about fourteen times higher than that of the mercury; consequently, the syphon of communication would require to have longer legs, in order to allow the water to be drawn off so as to have an equal volume of mercury and water in each tube. W. W.

Devonport Dockyard, November 10, 1835.

On Mr. Henwood's Calculations on Ships of the British Navy.

Sir,—In the number for November last of the United Service Journal, is inserted an article by Mr. Henwood, containing the results of calculations made by him on several ships of the British Navy, with critical observations on the forms of some of them. As these calculations are dependent on a theory partly developed by that gentleman in Nos. 33 and 34 of the Nautical Magazine, you will perhaps allow me an opportunity of investigating the correctness of the grounds on which that theory is founded, in the pages of the same work.

Mr. Henwood has here made a public assertion, that "*all* ships hitherto built, (with *possibly* a few *accidental* exceptions,) although not lop-sided, are nevertheless lop-ended, in consequence of the want of a method of determining the best position for the axis of rotation;" that he has discovered this method, and that if ships were to be constructed according to the principles propounded by him, they would be distinguishable from ships hitherto built, in the same manner that a just balance is distinguished from a false one: the axis of rotation being placed where it ought to be in *the one case*, which it NEVER has been in *the other*. As Mr. Henwood has here pointed out the monstrous deficiency of correct principles displayed in the construction of *all* our navy, and has claimed the merit of supplying the desideratum, the lack of which he so much deplores; it is but just that this system should be submitted to a fair and impartial examination, to ascertain if it be entitled to the unlimited eulogium which its author bestows on it, as the first and only correct method ever brought to light; and whether the test, to which those twenty ships have been subjected, is that by which their relative qualities may be judged, or of those not yet built, predicted. If on such investigation this system should prove to be that splendid discovery, which is to enlighten the, until now, dark science of naval construction, it is but justice to its inventor that it should be followed in future designs for ships: if, on the contrary, it can be shewn that the theory is based on false deductions from false premises, it is but equally just that the good performances of those ships, which have been tried at sea, should be attributed to some other cause than their *accidental* agreement with fallacious calculations; and the prediction of bad qualities for those ships yet

untried, deprived of that weight thus endeavoured to be attached to them.

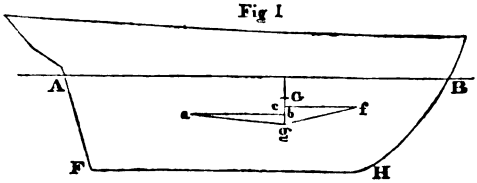
The theory under consideration is founded on the assumption of the truth of the three following points: 1st. That the axis of rotation of a ship, under *all circumstances*, passes through its centre of gravity. 2dly. That the *tendencies* of a ship to the motions of pitching and 'scending, arise from, and are measured by, the moments of inertia of the fore and after bodies. 3dly. That to however great an extent, the pitching and 'scending may be carried, the bulk of fluid displaced is never more than the displacement of the ship when floating quiescent, or to use the words of the author, that " when a ship pitches, the increase of displacement at the fore end, must be precisely equal to the diminution of displacement at the after end. These are not the only errors which I could point out in this article; but I shall only *at present* endeavour to prove that *these* are erroneous.

In support of the first of these points, Mr. Henwood has quoted a proposition from Whewell's Dynamics, to prove that the axis of rotation of *any* revolving body must pass through the centre of gravity of that body: this problem, like all purely theoretical investigations, supposes the revolving body to move *freely* and *in vacuo*, or in a non-resisting medium, and cannot, of course, apply to the motions of a ship, which are not performed *freely*, but in a fluid of high resisting power. That Chapman was aware of the fact, that a ship's evolutions are not *always* performed around an axis passing through its centre of gravity, might be proved from many passages in his works, but as he was deficient in mathematical acquirements, he has not always succeeded in *proving* what his experience convinced him to be true: nevertheless, from our knowledge of this great man's talents, observation, and generally sound judgment, we should carefully examine and duly weigh his assertions, although they may be deficient of proof and apparently incorrect, before we reject them as totally false. In his Architectura Navalis Mercatoria, he lays down the following axiom—" that a body put in motion turns round its centre of gravity, as long as it is not prevented from doing so by any external force, and provided the effort by which it is first put in motion does not force it to move round any other point." Now, this is precisely the case of a ship's motion in a sea; it would turn round its centre of gravity, but that it is *almost* always prevented from doing so by an external force, and that the effort by which it is first put in motion *does* compel it to move around some other point. The error into which Mr. Henwood and others have fallen, in their investigations of the place of the axis of rotation, has arisen from their neglect of the due consideration of those disturbing forces which urge a ship to move round some point distinct from the centre of gravity. That gentleman's calculations having reference

to the motions of pitching and 'scending only, I shall at present consider under what circumstances those motions occur, endeavour to investigate around what point they take place, and prove that that point never can be coincident with the centre of gravity. The examination of a ship's rotation about a longitudinal axis, and the stability depending thereon, I shall defer to some future opportunity.

It is too well known, to require a proof here, that any body floating freely on a fluid can only be at rest when it has displaced a bulk of the fluid equal in weight to itself, and when the centres of gravity of the body and of the displaced fluid are in the same vertical line, consequently, should a change occur in the position of any weight in the floating body, so as to alter the place of its centre of gravity, or a disturbance of the surface of the fluid, so that a change takes place in the position of the centre of gravity of the displacement, it is evident that as the line joining these two points cannot be perpendicular to the horizon, a rotation of the body must ensue and continue, until they are again in the same vertical line. To apply this to a ship, let A B H F, (Fig. 1.) represent the body of a ship; A B, the water-line when the ship is at rest,

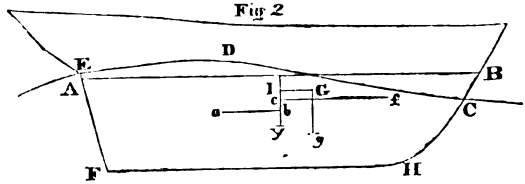
Fig I



G, its centre of gravity, g, the centre of gravity of the displaced water; let f be the centre of gravity of the fore, and a that of the after body; draw fc, ab, perpendicular to Gg, and consequently parallel to A B; we may then correctly suppose (as may be seen by reference to any elementary work on Mechanics) the whole of the parts before and abaft the line Gg, to be collected in, and acting at, the points f and a, their respective centres of gravity: we then have the downward pressure of the fore and after bodies of the ship acting at f and a, exactly counteracted and kept *in equilibrio* by the upward pressure of the supporting fluid concentrated in the point g: the case may therefore be justly assimilated to that of a bent lever agf, of which g is the fulcrum, on which the weights, viz. the fore and after bodies of the ship, balance each other at the extremities of the arms fg and ga; and from the property of the lever (putting x to represent the fore body, and z the after,) $x \times fc = z \times ab$. It is therefore evident, that, while the above mentioned conditions are fulfilled, that is, while the positions of G, g, and the water-line A B, are unaltered, no motion of pitching or

'scending can take place, nor can there be any *tendency* to such motions.

Fig 2



Now, let the water-line be supposed to be brought into the situation C D E, (Fig. 2.) by the action of a wave, let γ be the centre of gravity of the now displaced volume of water C D E F H, into which the whole upward pressure arising from the buoyancy of the fluid may as before be supposed to be collected; the fulcrum of the imaginary lever (*in fact*, the centre of motion) will then be transferred to γ, and consequently the equilibrium destroyed. We have then $x \times fc$ representing the *tendency* of the fore body to descend, $z \times ab$ that of the after body to do so, and the difference between these two moments, $x \times fc - z \times ab$, (or what is the same thing, the whole weight of the ship multiplied by Gg) will represent the moment which causes the ship to pitch. This point γ is then the centre of rotation at the *commencement* of the vessel's pitching; as the ship's head descends, the water-line C D E approximates to A B, and γ approaches to g, with which it coincides when C D E and A B are together: the vessel, however, does not then stop in its descent, the moment of inertia with which it descends (of which I shall have occasion to speak more hereafter) will cause it to plunge deeper forward than the line A B, the line of quiescent floatation, and will consequently bring the point γ to the other side of Gg: when the resistance of the water has overcome this moment of inertia, the ship will begin to ascend forward, commencing its revolution around that point to which γ shall ultimately have arrived, and which will again approach to g as the ship approaches to a state of rest.

In the above investigation I have endeavoured to demonstrate that the axis of rotation *does not* pass through the centre of gravity, that it is not to be found in *any fixed* point, but that its situation may be determined at any instant of time from the mean direction of the upward pressure of the water at that time, and which is dependent on the *then* displaced volume C D E F H. The motion of 'scending arises from precisely a similar cause; to produce it, the water must be lower abaft than it is forward, in which case it is evident that γ comes *before* G, the moment $z \times ab$ is then greater than $x \times fc$, and their difference, viz. $z \times ab - x \times fc$ measures the ship's *tendency* to 'scend.

(To be concluded.)

Table XXV.

For reducing French Feet to English Feet, and English Feet to French.

1 French Foot = 1·06576543 English Foot.
1 English Foot = 0·93829277 French Foot.

French or Engl. Feet.	English Feet and Dec. parts.	French Feet and Dec. parts.	French or Engl. Feet.	English Feet and Dec. parts.	French Feet and Dec. parts.	French or Engl. Feet.	English Feet and Dec. parts.	French Feet and Dec. parts.
1	1·066	0·938	40	42·631	37·532	79	84·195	74·125
2	2·132	1·877	41	43·696	38·470	80	85·261	75·063
3	3·197	2·815	42	44·762	39·408	81	86·327	76·002
4	4·263	3·753	43	45 828	40·347	82	87·393	76·940
5	5·329	4·691	44	46·894	41·285	83	88·459	77·878
6	6·395	5·630	45	47·959	42·223	84	89·524	78·817
7	7·460	6·568	46	49·025	43·161	85	90·590	79·755
8	8·526	7·506	47	50·091	44·100	86	91·656	80·693
9	9·592	8·445	48	51·157	45·038	87	92·722	81·631
10	10·658	9·383	49	52·222	45·976	88	93·787	82·570
11	11·723	10·321	50	53·288	46·915	89	94·853	83·508
12	12·789	11·260	51	54·354	47·853	90	95·919	84.446
13	13·855	12·198	52	55·420	48·791	91	96·985	85·385
14	14·921	13·136	53	56·486	49·730	92	98·050	86·323
15	15·986	14·074	54	57·551	50·668	93	99·116	87·261
16	17·052	15·013	55	58·617	51·606	94	100·182	88·200
17	18·118	15·951	56	59·683	52·544	95	101·248	89·138
18	19·184	16·889	57	60·749	53·483	96	102·313	90·076
19	20·250	17·828	58	61·814	54·421	97	103·379	91·014
20	21·315	18·766	59	62·880	55·359	98	104·445	91·953
21	22·381	19·704	60	63·946	56·298	99	105·511	92·891
22	23·447	20·642	61	65·012	57·236	100	106·577	93·829
23	24·513	21·581	62	66·077	58·174	150	159·865	140·744
24	25·578	22·519	63	67·143	59·112	200	213·153	187·659
25	26·644	23·457	64	68·209	60·051	250	266·441	234·573
26	27·710	24·396	65	69·275	60·989	300	319·730	281·488
27	28·776	25·334	66	70·341	61·927	350	373·018	328·402
28	29·841	26·272	67	71·406	62·866	400	426·306	375·317
29	30·907	27·210	68	72·472	63·804	450	479·594	422·232
30	31·973	28·149	69	73·538	64·742	500	532·883	469·146
31	33·039	29·087	70	74·604	65·680	550	586·171	516·061
32	34·104	30·025	71	75·669	66·619	600	639·460	562·976
33	35·170	30·964	72	76·735	67·557	650	692·747	609·890
34	36·236	31·902	73	77·801	68·495	700	746·036	656·805
35	37·302	32·840	74	78·867	69·434	750	799·324	703·720
36	38·368	33·779	75	79·932	70·372	800	852 612	750·634
37	39·433	34·717	76	80·998	71·310	850	905·901	797·549
38	40·499	35·655	77	82·064	72·249	900	959·189	844·463
39	41·565	36·593	78	83·130	73·187	1000	1065·765	938·293

The New Tonnage Bill.

To the Editor of the Nautical Magazine.

Sir,—The vast improvements in progress in our navy, under the direction of the present enlightened surveyor, and the new tonnage bill coming into operation on the 1st of January, which has been framed doubtless with the intention of similar improvements being produced in the merchant shipping of the country, seem to point out this as a fit time for drawing the public attention to such subjects, and induce me, as possessing some experience in nautical matters, to contribute the result of my observations thereon; flattering myself that, as respects men-of-war, they may not be considered unworthy of the attention even of Captain Symonds himself. Moreover, the suggestions contained in these remarks may be found, even by that able and intrepid seaman, such as will tend to complete the work of his own commencement, by extending his improvements, and bringing nearer to perfection the ships of the British navy, already become so infinitely indebted to him for the rapid advances he has made since he succeeded to the influential station which he holds.

Although far from thinking (as will appear in the sequel) that the new tonnage bill is the best measure that could have been devised for the purpose, yet, it being now about to become the law of the land, and all *new ships* are to be registered thereby; suffice it to say, that it must be acknowledged a very great improvement on the old method, the effects of which have been so extremely injurious to the merchant shipping of the country, and to the country itself.

I shall, however, point out some defects and inconsistencies in this bill, which, if not speedily obviated, will tend to render it nugatory in its professed views, if not indeed altogether a useless, and perhaps injurious effort of legislation. I think I can shew that erroneous conclusions have been come to, on the effect of the bill in different classes of shipping.

It appears there are 19,110 British registered ships, (I quote from a pamphlet written by one of the committee who formed the bill,) from 50 tons upwards,—that only 3414 of them are above 200 tons. Upon this class (which contains six divisions) it is admitted that the new method of estimating register tonnage will produce a very material nominal increase. The smaller class of vessels are embraced in three divisions, 200 to 100 tons, 100 to 50, and lastly those under 50 tons, the number of which last division is stated to be no less than 6542; there being, it would appear, more than one-third in number of the whole registered shipping of the country, consisting of vessels under fifty tons. Now, I may be in error in stating, that the average of this latter

class, (vessels under fifty tons,) as to the effect the new mode of measurement is to have upon it, *has been taken from a single example.* Some detail is gone into (vide pamphlet) to shew how the divisor has been obtained; and it is shewn how it is produced from the nine different classes of vessels into which the whole British shipping has been divided. With submission, I think that this divisor had much better have been fixed at any arbitrary rate, that would have produced a tonnage more like what the real burthen (or capacity rather) of a ship is, than the one adopted, (which makes the "Dunira," for instance, 1691 tons; yet, in capacity, to contain 156,248 solid feet; or, at 40 feet to the ton, 3906½ tons;) yet, as the committee have affixed great importance to this point, and have affected to have deduced their divisor very exactly, so that the adoption of the new method "should not disturb the aggregate tonnage as before existing," we have a right to conclude that their measurements have been taken, so as at least to satisfy themselves, and in page 24 a list of ships is given, from which they profess to have attained the end they had in view. Being in possession of this list as a groundwork, they have produced in page 22 another table, in both of which the "Ann" appears as the sole representative of the smallest class, (of vessels under fifty tons.) The table at page 22 is intended to shew what will be the effect upon the whole nine classes of British ships; and as it is given in an answer, or in opposition, to a statement made by Mr. Steele, (a gentleman of Greenock, whose opinions the pamphlet in question seems to have been published to overthrow,) it is fairly to be considered as intended to carry the real belief of the committee, as to what this effect will be. Let us see what the result is, and how came it. They make out, from the actual measurement of a certain number of ships down to the sixth class, inclusive, that is to say, from 200 tons upwards, an *increase* of 2782 tons. The number of ships in each class measured is unquestionably too few, for the purpose of accuracy, but large ships so much resemble one another, that it is just possible that the above may be somewhere near the truth.

The next class, No. 7, 100 to 200 tons, seems to have been neutral, neither to have gained nor to have lost by the new measurement, therefore does not come into the account at all, (or, more properly speaking, they have omitted it altogether.) Then comes the vessels from 50 to 100 tons, class the 8th, which class, be it observed, contains no less than 5212 vessels, much above one-fourth of the whole registered ships of Britain, to obtain the average of which only five have been measured, and the result is, that in this class the *decrease* is 1381·8 tons. Next comes class 9, or vessels under fifty tons; and here, to obtain an average of 6542 vessels, stands the effect produced upon *one!* which is no less than *eight tons decrease*, and which produces a

reduction in the aggregate of the proportion taken of the whole class, 1217 tons. To understand the reference that is here made to the table framed by the committee, it must be understood that they have assumed such a number of vessels to each class, as the classes really bear to one another in the whole number of registered ships; thus taken, it becomes necessary, in order to preserve such relative proportions, to distribute the above measurements over 444 ships, producing *an increase*, as above stated, in the first six classes, of 2782 tons. Class 7 remains neutral, (or omitted rather;) those of the two last, or the least vessels, shewing together a *decrease* of 2599 tons; which results in a difference only of 183 tons, upon 444 vessels, or less than half a ton to each, from which the divisor is deducted, and which of course leaves the whole tonnage of the kingdom pretty much the same as it was. I will only further refer to the above table, to observe, that in taking the average of the smaller classes of vessels, it is quite evident that sufficient care has not been taken; the average size of vessels of the last class is probably not more than thirty-two tons to each, upon which tonnage it has been determined there is an error of eight tons, or 25 per cent., and this on the measurement of one! though any body who has observed the different sort of small vessels round the British coast, must have seen that their variety in construction is almost endless.

In respect to the effect the new tonnage bill is to have on different classes of shipping, I cannot but come to a conclusion *directly contrary to the committee;* that is to say, in the actual difference upon the whole, which I contend *will be increased considerably*, and that in every class: and this conclusion I come to from pretty general acquaintance with the shipping of the country, added to which, I think it may very naturally be concluded, that the consideration of saving the tonnage dues by reducing the nominal measurement, has actuated the builders and owners of small vessels, as well as those of the larger class; and this conclusion, I think, may be the more relied upon when it is considered, as the committee justly remark, that "the smaller class of vessels are oftener in and out of port;" and wherefore, I add, being more "sensitive" of the charges, their owners have naturally taken care to have reduced as much as possible.

Although I feel quite convinced that the above view will be found correct, yet we will suppose that it should be otherwise, and that the committee have estimated the effect as to measurement of the different classes correctly; there yet remains difficulties, inconsistencies, and objections, somewhat formidable. In the first place, the 3414 ships whose tonnage upon remeasurement would be *increased*, will very naturally remain as they are,—all those that would *measure less*, embracing 15,696 vessels, would most assuredly be new registered. Now, how is the great deside-

ratum with the committee, namely, the national returns, as to tonnage, its increase, &c. &c. to be preserved? A confusion will ensue, that will defy all attempt even at estimate: this is an inconsistency, and of course, in the eyes of the committee, must be an evil. The next is worse; it is a *direct evil*, as it will perpetuate (as far as possible) the old ships, those upon the worst possible construction, the most; in as much as, to the amount they are undermeasured, in comparison with a new one upon the most improved principle of construction—say, perhaps, in reference to what each will carry, probably to the extent of from 20 to even 50 per cent.—in so much, I say, the owner of the old ship will possess an annuity equal to the amount such difference will produce him, upon all charges collected upon tonnage; and this is no trifle, should such charges be increased to a war standard. In such amount, as it is a premium upon the old ship, it must be admitted to be a drawback upon the production of a new one.

Now, continuing the supposition that the committee is right, and overlooking the positive injury, that an increase of nominal tonnage in new ships must, as compared with the old bad constructed ships, (which will not be re-registered,) entail upon them for many years to come; I say, overlooking this serious objection in the case, that the committee very properly have not lost sight of "protecting existing interests, and preserving good faith;" did it never occur to the committee, how easily their object of retaining the means of making the national returns, &c. &c. might have been preserved, and no existing rights interfered with? By recommending that, having adopted the best plan they could devise for obtaining the contents of the interior of a ship, (for, in despite of Mr. Brindley, they are assuredly right in selecting "capacity" instead of displacement,) they had recommended, that on a certain day the whole of the shipping in England should be remeasured and registered "de novo," reserving a note upon the new certificate of registry, a memorandum of the old tonnage; and continuing to collect the rates by such former registered tonnage: here the owners of existing ships would have been effectually protected.*

Still, supposing the committee right, the effect of this bill will be to give a *partial* advantage to one class of owners at the expense of another, it will alter the terms upon which existing ships compete, the one with the other: 15,696 vessels will be re-registered upon a smaller tonnage; the smaller classes thus gaining considerably in the payment of their rates, and in consequence *pressing upon the owners of the larger ships*, who decline

* The difference between the old tonnage and *the actual new*, being taken and preserved, this difference kept in view upon new estimates, the old account should be expunged, and the new preserved for the basis of fresh returns.

to remeasure: this would be something more than a negative injury to the large ships, and it has been overlooked by the committee.

Should this bill be revised, as I think it must be, and should it turn out, as I think it will do, that the tonnage of all classes of ships will be increased, and that the exceptions will be so few as not to be worth taking notice of, (and the advantages, when they do occur may well be given to the owners;) should this be found to be the case upon a revision of the bill, a better plan would be, that *all* ships be remeasured, the excess of the tonnage over the old (in the aggregate) being ascertained to be so much per cent., a similar reduction be made upon all charges collected upon tonnage; and then proceed and collect upon the new registered tonnage. I cannot help here also suggesting another improvement in the mode of taking the measurement of a ship when this subject is again under consideration, which is to treat the *foremost lower breadth* in the same manner as the *aftermost*, namely, to double it. The present plan is an inconsistency, for it prevents that attention, in constructing a ship to sail well, being paid to the *entrance* that may be given to the *run*, and will be felt in measuring those ships, especially steam-vessels, where the plan of great sharpness forward has been adopted; and, when reconsidered, every thing must be omitted that can possibly render it the interest of shipowners to thwart or obstruct the enlightened views the framers of the measure in question entertained, in producing an improvement in our commercial marine. It must not be lost sight of, that ships are constructed and owned for the purpose of *making money*. And in reference to the "packets of ship-owners," there yet remains to notice another provision of the bill. I believe that the measurement of the ships referred to above, and from which the conclusions I have come to have been drawn, have been made without any reference to "poops." Poops are *not* taken into account, in the measurement of ships *at present*, as is well known, but the new bill will embrace them; and in so doing, I am not about to find any faults on this score; it will tend to check the too general adoption of such unmerciful appendages built upon that part of a ship least adapted to sustain weight; that is to say, it will induce the builders of new ships to consider whether the enormous weight, and the space obtained by it, as it is to be included in the measurement of the ship, had not better be at once *put under the main deck*, in an increased height, or of the dimensions of the ship generally. But there is a considerable and growing trade, which employs a very large number of the best merchant ships in the country, where poops are perhaps absolutely a requisite, viz. that of India, China, New South Wales, &c. In the former especially there is one sweeping condition, without a compliance

with which no passenger will embark, an absolute necessity, a "sine qua non," that the ship shall have "a poop, a cow, and a doctor."

The Dunira's poop is stated to measure eighty-two tons by the new tonnage bill. The importance of the accommodations afforded by a poop has become of such paramount consideration, that the size has become increased to such an extent, that I don't hesitate to say, there are a great number of ships, not nearly half the size of the Dunira, whose poops will measure 100 tons.

Now, what will be the working of the new tonnage bill here? its effect in reference to poops will be an addition to all I have previously stated, when shewing how new ships will be taxed and the old ones remain free. The owner of a *new* ship, with a poop which adds 100 tons to her register tonnage, will have to pay for all the lights, dock-dues, &c. &c. for this extra measurement, from which the old ship is entirely exempt; and, to mend the matter, it will become an inducement to add this unwieldy appendage to all the old ships in existence, let them be ever so unfit to sustain the weight.

Every one must admit that this is *an unquestionable effect of the new tonnage bill;* with which, upon the whole, I think I have now found sufficient fault to induce those who have interested themselves in the framing thereof, to consider seriously, whether, or not, something be immediately required to obviate the effects described.

Now, Mr. Editor, I am not one who finds fault merely for the pleasure many experience in doing so: if a grievance exists, for which I cannot find a remedy, I think it is wisdom to submit; as Mr. Pitt required a member of parliament, who wished to repeal one tax, to be prepared with a new one, before he would attend to his suggestion. I have, however, pointed out, with the mischief, partial modes of remedy, and I am prepared to go further, and say, that I have a *specific* which shall remove the mischief altogether at once and for ever. I know how useless it would be to suggest any thing like the repeal of a measure of this kind: parliament is committed to it; the bill has passed, and comes into operation on the 1st of January, and must begin its working before parliament can interfere to control its effects, be they ever so injurious; and men don't like to be told that a measure which has cost no little trouble to bring about is bad, and must be repealed, even before it is tried; nor do I wish to put the consistency of honourable gentlemen to any such test. Let the bill stand just as it is, but so soon as parliament meets, a bill should be brought into the House of Commons (and sooner or later it must be,—too much has already been done to go back) to take off every duty, every charge of every description, collected upon register tonnage, raising an equal amount *upon the cargoes*;

parliament being pledged never again to raise a tax, or permit any charge to exist, that has reference to a ship's register tonnage. This plan I suggested in time to have saved a great deal of trouble already incurred about tonnage, and may be seen detailed in your Magazine for February last year: and I will conclude these observations on the tonnage bill, by repeating boldly my conviction, that these are the only means by which the difficulties are to be escaped from, which the new tonnage bill involves. This favourite measure, (favourite with me, because I see its good effects in almost all parts of the world,) I consider now more likely than ever to be carried into effect: it is a measure that, whatever are its defects, will certainly effect the end in view, namely, an improved construction in British merchant ships.

If, Mr. Editor, you find room for these observations in your next number, and think that they contain any thing like a promise of an extension of them being desirable, applied to ship's construction, and other matters connected with our marine, and will, in consequence, give me space in your very useful publication, I may probably go on, endeavouring to render myself of some use, in remarking upon these topics to your nautical readers, in two or three of your next numbers. I am, &c.

London, November, 1835. MERCATOR.

WRECK PLUNDERING.

IN another part of this Number will be found an account of the plunder of a wreck on the coast of France: our readers may be assured that we do not intend to *calumniate* our neighbours, (for whose *national character* we entertain the highest respect,) but we embrace the occasion which it affords us of stimulating benevolent individuals, *on both shores*, to exert themselves in the "righteous cause" of the abolition of this detested practice. We have two letters from most respectable correspondents, which have been in our hands nearly two months, with the view to publication, relating a similar occurrence on our own shores, in the month of September *last*; one of whom thus expresses himself—"The *lives* of the 13 sailors were saved, but they lost every thing, "nay, they were robbed even of their body-clothes by those "infernal sea-coast wretches who pray for and *promote* such "calamitous distressful accidents, that they may have the spoil. "What cruel criminality—what deep disgrace to the *Christian* "name!—the *Turks* do not act so."

And the other, thus—"The conduct of the (———) people, "when the American vessel was wrecked on their coast, was cruel "and villanous in the extreme; but the fact is, that the lower "orders of the (———) never say any thing which is disparaging

"to their countrymen. They are all very, very religious, and "*grace* sanctifies every thing they do; it casts an impervious veil "over what would be universally detested in the eye of the sun. "It is almost treason to whisper this; our statement is, never- "theless, true."

We have the same regard for our "national character" as others *pretend to*, (and plead as an apology for their silence), and, as we shall not put it in the power of any one to say that we are *mere pretenders*, by publishing what *may* be attended with benefit to the cause, but *may*, at the *same time*, lay us under some *appearance* of evil, or at least under the *imputation* of a desire to add to our own importance at the expense of others; we now, therefore, pledge ourselves to publish, in future, *whatever* may reach us equally well authenticated, or capable of proof, as the statement alluded to, which is from a high official source; and assure our friends, and the friends of humanity, here and in France, that the same impartiality which we boast of on other subjects shall be strictly observed on this. We undertand that Mr. Bate, of 21 Poultry, has already opened a subscription, and collected £10, in contributions of 5s. and upwards, to be applied towards the suppression of this disgraceful practice, and he may depend on the hearty co-operation of the NAUTICAL MAGAZINE.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

LETTERS TO A YOUNG MASTER MARINER, on some subjects connected with his calling. By Charles Lorimer. Second edition. Effingham Wilson, London.

IN a former number we noticed the first edition of this in the manner which we considered it to deserve, and the quick appearance of a second has justified our opinion. We shall merely say to the persons to whom it is addressed, take and read it, and you will not fail to profit thereby.

NARRATIVE OF DISCOVERY AND ADVENTURE in the Polar Seas and Regions, &c.; with an Account of the Whale Fishery.—Fourth edition. Simpkin and Marshall, London.

THIS volume forms the first of the Edinburgh Cabinet Library; a work which we have before now had occasion to mention in terms of praise. The present edition of the Polar Expeditions is peculiarly well-timed, more especially as it is accompanied with a comprehensive and interesting account of the whale fishery, the disasters of which in the course of last season are now the subject of general attention, and the immediate cause of a government expedition. The volume before us derives value from being completed up to the present time, and therefore includes the last memorable expedition of Sir John Ross and Captain Back. In another part of this number we have extracted from

the tenth volume of this useful work the account of Humboldt's ascent of the Peak of Teneriffe; a quotation which, while it serves to illustrate our view of the Peak, is a good sample of the useful as well as agreeable manner in which the subjects in it are generally treated.

NARRATIVE OF A VOYAGE ROUND THE WORLD, &c. By J. B. Wilson, M. D., Surgeon R.N. Sherwood.

IN two former numbers of this work we have noticed our worthy friend, Dr. Wilson's valuable "Narrative," and we have yet to take our leave of him. In doing so, we must regret not having sufficient space to give more than a general outline of his adventures, from the time of his escape in the launch of the Governor Ready to that of his return home. After making some interesting remarks on Coupang, Dr. Wilson sails in the Amity for Raffles' Bay, and, in the course of his stay there gives a very interesting account of the natives of the northern coast of Australia. We have said that the Doctor is a good lunarian, and has corrected our charts in more places than one: he has deliberately removed an island from the Australian charts, after having made the *amende honorable* by adding a new group to them, besides a shoal or two. We intend, however, returning to this subject in its proper department of our work.

From Raffles' Bay, our author returns to Coupang, and then visits Swan River, and makes some interesting excursions into the interior, after which he goes to King George's Sound, and from thence to Launceston, and to England after embarking at Sidney.

There is much original and useful information in this work on that interesting country, Australia; and not the least useful portion of the work is that part which contains the Doctor's experience and mode of treating the convicts on their voyage from England. The advice to emigrants is also useful; and, on the whole, we recommend the narrative as a work of reference to those whose attention is directed to Australian colonization.

LAND AND SEA TALES. By the Old Sailor. Illustrated by George Cruikshank. In 2 volumes. Effingham Wilson.

THESE are not the days of novels and romances. We want something more substantial and useful. However, the Old Sailor has been spinning yarns again, as he terms it; and, to use his own phrase, here is the result of his "shove-along (echelon) movements." The stories are good, and well told. The last is rather long, and might have borne clipping. That of the Great Belt is excellent, touching, and pathetic. On the whole, we are well pleased with them, and recommend them as a source of enjoyment and entertainment to our readers.

THE NAVAL SERVICE, OR THE OFFICER'S MANUAL. For every grade employed in H. M. ships, from the Volunteer of the First Class to the Captain of the Fleet. By Captain WM. GLASCOCK, R. N. Saunders and Otley. Price £1. 1s.

IN our last number we alluded to this valuable work under an erroneous title, and we have left ourselves little room to compensate for our mistake. We shall, however, take the present opportunity of confirming the opinion we have already given of it, as a Manual of the Naval Service, and shall occasionally hereafter snatch a treasure from its pages, for the benefit of our readers. Capt. Glascock illustrates his instructions on the subject in question by various little anecdotes, of which the following is one:—

BERTHING HAMMOCKS.—The author bears in recollection an instance of a lower-deck mate, who had imagined himself particularly expert and expeditious in the completion of his task, having made a sad blunder in "berthing" the ship's company's hammocks. The mate appearing on the quarter-deck, reported officially to the senior lieutenant the circumstance of his having "completed," as he termed it, "his troublesome task."—"Sharp work!" returned his superior. "Come, I'll accompany you below, to inspect your labours." The lieutenant repaired on the lower-deck, when, looking overhead, he discovered all the black numbers on *one* side, and all the red on the other. "Holloa! how is this? Red, starboard side; black, larboard!"—"All right, I believe, sir. You'll find each watch berthed on its *own* respective side."—"Then, sir," returned the lieutenant, "I shall find that the mate-of-the-lower-deck has made a most egregious blunder. So when the ship's at sea, the *weight* of the watch below is to be all on *one* side."—"I never thought of that, sir."—"So it seems." The brush of the painter was immediately put into requisition, to remedy the blunder.

A NEW AND IMPROVED LIVERPOOL TIDE TABLE AND ALMANAC, for the Year 1836, containing the Mean Time of High Water, &c. &c. By T. Bywater. Liverpool. Price 1s. 3d.

IN the formation of this Tide Table, Mr. Bywater has availed himself of a series of Tables constructed by Mr. Lubbock from a course of observations of the tides, and heights of the tides, at Liverpool, which extended through a period of eighteen years. With such superior means, he has produced a more perfect prediction of the tides than has yet appeared; and has been enabled to add the novel feature of the heights of the tide, as well as the time of high water. These times of high water coincide generally within a minute or two of those calculated by Mr. Dessiou, who has devoted a vast deal of perseverance and attention to this intricate subject. We congratulate Mr. Bywater on his being the first to publish a complete as well as a correct tide-table for his own port.

NEW CHARTS.

LOUGH NEAGH, surveyed and sounded by Lieut. Thomas Graves, R.N., F.R.A.S., F.G.S., Admiralty; sizehalf-double elephant. Price 3s. 9d. No. 95.

This plan defines the borders of the lake, on the scale of about an inch to the mile; it is well filled with soundings, which, we conclude, are referrible to some mark on shore by which its relative level with the depths in the plan can always be ascertained.

THE EAST COAST OF ENGLAND from the Farn Islands to Berwick. half-double elephant. Price 3s. No. 171.

Berwick Harbour; size quarto. Price 1s. 6d. No. 174.

Holy Island Harbour; size quarto. Price 1s. 6d. No. 173.

The above chart, with the two plans which follow it, are the result of surveys made by Commander E. J. Johnson R.N.; and exhibit an elaborate detail of part of our dangerous eastern coast. It is a compact and elegant chart, drawn up with much care and judgment, and the method of arrangement conspicuous in every part of it is exceedingly good. The lighthouses and beacons are

exhibited all on the same scale, which shows at once their relative proportions; the views and leading marks are neatly arranged, and the shoals and soundings are clearly expressed. To navigators it is a valuable little chart, and the plans which accompany it, are no less desirable.

WEST COAST OF SOUTH AMERICA, sheet 1 by Capt. P. P. King, R.N. Size half-double elephant. Price 3s. 3d.

This chart includes the coast from the entrance of the strait of Magalhaens to to the gulf of Trinidad, and exhibits tortuous channels and sounds, with names which remind us of the days of Sir Francis Drake and Sarmiento, of rival fame. Much of the seaface of the islands is left unexamined, but the principal capes are well defined, and the interior navigation clearly delineated, although destitute of soundings.

PORTS IN THE STRAITS OF MAGALHAENS. By Capt. P. P. King, H.M.S. Adventure and Beagle, 1826 to 30. Five sheets 4to. Price 1s. each.

We can adopt no better way of introducing these plans to our readers, than by enumerating their contents, and for this purpose shall take them numerically.

No. 1 contains Gregory Bay, Oazy Harbour, Packet Harbour, and Port Famine.

No. 2 contains Port San Antonio, coast and anchorages between Glascott Point and Cape San Isidro, Port Gallant, Cordes Bay and Port San Miguel, Woods Bay, and Labyrinth Islands.

No. 3 contains Deep Harbour, Marian Cove, Playa Parda Cove, Borja Bay, Harbour of Mercy, Valentine Harbour, and Port Tamar.

No. 4 contains March Harbour, Stewart Harbour, Townshend Harbour, Doris' Cove, Orange Bay, and Adventure Cove.

No. 5 contains Dislocation Harbour, Laura Harbour, Latitude Bay, Noir Road.

SCIENTIFIC EXPEDITION.—H.M.S. Sulphur, with her consort, the Starling cutter, Lieut. Kellet, and H.M.S. Ætna, attended by the Raven, Lieut. Bedford, have just sailed, for the purpose of completing the surveys of the African and American coasts. The Sulphur, under the command of Capt. Beechey, will proceed direct to the Pacific, where she will continue the survey of the western shores of America, from the termination of Capt. Fitz Roy's operations, and will probably visit some of those interesting islands of the Pacific ocean that Capt. Beechey has so well described, and with the nature of which he is so well acquainted. The Spanish charts of that coast are very imperfect, and on so small a scale as to be next to useless to a ship in-shore; and there being no others besides them, it becomes a matter of increasing importance every day, that we should be well acquainted with the hydrography of shores where British commerce is daily augmenting. We have heard of good harbours and anchorages on that coast by report, frequented by our ships, but of which places we are in a state of ignorance.

The Ætna, under the command of that enterprising officer, Capt. Vidal, whose name is already connected with Africa, will continue the survey of the coast of Africa from the Sherboro' river to Corsico bay, an extent which includes the whole of the Gold Coast, Grain Coast, &c. It is remarkable that this portion of the coast, which is the principal resort of our

Liverpool ships in the African trade, should have remained to the present day unsurveyed, and next to unknown. A recent instance of this occurred in the circumstance of H.M.S. North Star striking on a rock off Cape Palmas. Bearings of the projecting points were taken for the position of the rock; but they were of no avail as far as their application to the chart was concerned, for the most experienced officers on the coast differed in their opinion as to which was Cape Palmas; and if they had been agreed, the best chart was on so small a scale, as well as so incorrect, that it became useless; and yet this coast is the very seat of the slave-trade.

Submarine Register.—An instrument for the purpose of measuring the depth of the sea, has been submitted to our inspection, by Mr. Payne, of the Adelaide Street Gallery of Practical Science, which promises to combine convenience with efficiency. The principle is that of pressure, and the instrument consists of a tube, which may be either of glass or iron, constructed similar to that of the barometer; one end being closed, and the other provided with a cistern containing mercury, which is separated from contact with the water by means of a membrane of skin, while it readily obeys any external pressure by ascending in the tube. The tube is graduated in depths of fathoms, on the principle of one atmosphere giving a certain pressure, which pressure becomes increased in proportion to the depth to which the instrument is immersed. A float on the surface of the mercury, similar to that of a register thermometer, marks the division on the scale; and the whole instrument is to be contained in a cavity inside the deep-sea lead, the inventor considering that the weight of the mercury will compensate for the removal of the lead necessary to give it place. The idea in theory, although not entirely new, is good, and it has been put into practice by Mr. Payne with much tact and good judgment. But there are several minor considerations which will have to be removed, to prevent all chance of accident.—We wish Mr. Payne all the success he deserves, and are glad to find that he has already received an order from the Admiralty.

Loss of the Neva.—We have to record the loss of another convict ship in Bass Strait, and the appalling sacrifice of 224 lives to the number already lost in these ships.—We shall refrain now from entering into the particulars, as it is a subject of such deep importance, that we shall look at it, in all its bearings, in an early number. We have not seen the captain's account; but it is said the reef on which she struck is laid down in the Surveys of Capt. Flinders, published by the Admiralty, and we fully believe it.

Goray Harbour, Jersey.—We are glad to find, that a danger which has hitherto been a source of great anxiety to vessels frequenting the harbour of Goray, in Jersey, is at length likely to be removed, and the free navigation of the entrance of the harbour much improved thereby. It appears that a rock lies a short distance off one of the pier-heads of the harbour, causing a current between it and the pier nearly at right angles to the stream of the tide, by which vessels are set directly upon it. The Cracker cutter was drifted on this rock in November last, and also the Seaflower on another occasion; and, in consequence of the representations of Lieut. Roche and Lieut. Morgan, their commanders, the local government of Jersey have assigned the sum of 5,000l. for extending a quay from the present pier-head to the rock, thereby filling up the chasm between them. This appears to us a most judicious measure; and we have no doubt will give security as well as extent to the harbour, the good effect of which must hereafter be evident.

STEAM TO AMERICA.—Amongst other projects that have been laid before the public within the last two months, is one to which we most heartily wish success. We allude to that of the "British and American Steam Navigation Company. It has long appeared strange to us, that, while the small steam-vessels of 400 to 500 tons have so successfully supplanted the Mediterranean packets, the importance of a line of steam-packets between Great Britain and America should have been so long overlooked. The practicability of the passage by steam, and the advantages of the plan, are clearly demonstrable. If a steam-vassels of 400 tons can make a passage of 1000 nautical miles in 10 or 12 days, surely one of 1200 tons will have no difficulty in performing one of 3900 in a proportionate time. For ourselves, we have no doubt of its success, and, most assuredly, would be among the first to avail ourselves of the opportunity of thus expeditiously visiting our transatlantic friends.

LANG'S SAFETY KEELS.

To the Editor of the Nautical Magazine.

SIR,—In a letter written from Portsmouth on the occasion of H.M. ship Pique being taken into dock, the writer, after giving a short account of her extra-ordinary preservation, and of the state of the bottom of the ship, goes on to say,—"No greater merit is due to Captain Symonds, on whose plan she was built, than to Sir Robert Seppings, since both agree in the principle which proved her safety, namely, the entire solidity of the hull from the keel several feet upwards. Had she been built on the old plan, her wreck must have been inevitable."

Now, sir, as it is clearly to the solidity of that mode of construction which allows of a vessel's keel being broken, or even torn away, without endangering her safety, that the return of this ship is to be attributed, it certainly is matter of regret that in the universal commendations of the construction itself, the name of the inventor, to whom the whole merit is of course due, should be sunk altogether.

In a pamphlet published by Mr. Oliver Lang last year, enumerating his improvements in these matters, he gives in the first page a short account of the circumstances that first called his attention to the subject of keels, and of the reception of his projects at the hands of office. According to the statement of Mr. Lang, it appears that it was seeing several frigates, as the Blonde, the Druid, the Crescent, and others, coming into dock with part of their keels broken off, in the year 1793, that he turned his mind to a mode of construction by which the safety of the ship should not be endangered, if by any accident the whole keel should be carried away.

This idea, which seems not to have occurred to any one before, and which is too remarkable to be mistaken for or mixed up with any other, occupied Mr. Lang's attention, according to his statement, till the year 1818, that is, for twenty-five years, when he was suffered to carry it partially into execution in the Arctic ships Isabella, Dorothy, and others; since which time it seems the plan has been advancing by degrees towards general adoption.

Considering then the successful issue, in the present instance, of the trial to which this plan has been exposed, the severest perhaps that the fabric of any ship in the world has ever withstood, and that, on the other hand, a ship of the former feeble construction, when she had sustained the least damage in the keel, was considered unfit for service, there can scarcely be any improvement in naval architecture of which the inventor may be more justly proud.

Having no knowledge of Mr. Lang personally, I have no motive in writing to you, but the precept "honour to whom honour is due;" and which it is the privilege of your station, Mr. Editor, to cause to be obeyed. The world at

large gives itself little concern about the claims of inventors, but partizanship is clamorous and invariably unjust. The reputation of saving this frigate is worth a contest, and if the name of the man who deserves it be concealed, the credit will quickly be attributed to some one who has no right to it; and they to whom the world in its wisdom assigns the merit of works or discoveries not their own, do not generally consider themselves called on to start a controversy on the subject, and make up their minds to enjoy in repose the good provided for them.

A READER.

CHRONOMETERS.

To the Editor of the Nautical Magazine.

SIR,—Public attention having been again invited to the subject of chronometers, by a letter appended to capt. Ross's narrative of his second expedition to the Arctic Regions; the contents of that letter claim the notice of all who feel interested in a branch of science peculiarly connected with the enlargement of nautical skill.

It will be remembered that Messrs. Arnold and Dent made many experiments with a view of discovering how far the steel-balances, used in these instruments, were effected by magnetic influence; that they invented a glass-spring as a substitute for steel, because of its freedom from magnetic affection, oxidation, &c.; (see Naut. Mag. No. 14, vol. ii. p. 22,) and that this discovery is in progress of a trial, hitherto, I believe, satisfactory. They moreover stated the difficulty of arranging, even with the nicest mechanical exactness, elements liable to be affected by various causes, so as to produce an uniform effect under contrary circumstances. In reference to that point, it is remarked in the letter under consideration, that the writers "disclaim all "intention of insinuating that in the mechanical construction of their instru-"ments there is any thing superior to, or materially different from, those made "by other respectable makers;" and having previously admitted "that they "were far from imagining that, because so much had been done for the "improvement of chronometers, there is nothing left to be desired," it may be assumed there is so far no difference of opinion amongst practical artists.

But in the letter appended to capt. Ross's narrative, a public declaration is made of the discovery of a "peculiar principle of the highest importance, in "giving the final adjustment to chronometers, as by it we are enabled *in all* "*cases* to give permanence to the rates within the limits of exactness requisite "in navigation." If no further information than this had been given, I should have looked forward with no small impatience to the development of a plan which would have introduced a new era in the art of chronometer-making; but my expectations were materially abated by an avowal of this peculiar principle having been already put in practice for no less a space of time than fifteen years past, because I cannot account for the public ignorance of so great a desideratum having been attained. In asserting that this end is accomplished by a final adjustment having no reference to mechanical arrangement, but to the "physical condition" of the steel and brass of which the spring and balance is composed, instead of shedding any light upon a subject hitherto so obscure, it becomes to my apprehension involved in still greater mystery than if nothing explanatory had been attempted. The possessors of the supposed secret profess themselves willing to disclose it on first receiving an adequate reward; but they are not willing to confide in the justice or liberality of the Government or the country, though I am confident they might do so with perfect assurance of being amply compensated according to the value of any discovery made.

The improvement of chronometers being not only calculated to promote commercial interests, but, what is of far greater importance still, to diminish the loss of human life in the perilous business of navigation; I should be sorry to drop a word tending to chill the hopes or check the efforts of

those who devote their time and talents to that object; on the contrary, I shall hail with pleasure any advances made towards perfection, however small, and from all quarters. But at the same time every person must naturally expect, and indeed desire, to see his pretensions tried by every possible test, so that his claim may rest upon a durable and acknowledged basis; and, accordingly, as the peculiar principle under consideration has had the advantage of long trial, the public are referred to various proofs of its excellence. These I shall advert to, without entering at present into very minute details, because that, I apprehend, will appear to be unnecessary.

The first proof adduced, but without stating particulars, is a reference to the North Polar expeditions; but it must not be forgotten that the chronometers sent out with Captain Parry were claimed by Mr. Molyneux as his making; and supposing the physical condition of the spring to have been afterwards altered, yet, upon investigating the rates, I shall take it for granted it is not intended to rest a claim upon the performance of chronometers used in these expeditions.

The next proof adduced being that of the prizes obtained by those chronometers, on the new principle, at the public trials of 1831, 1832, and 1833, is stated in a more prominent manner. In attempting to verify the statements made in relation to this part of the subject, I am not less perplexed as respects the proofs of actual performance, than I am in regard to the principle of adjustment itself; for, on turning to the proceedings at Greenwich in the years mentioned, I cannot find a record of any chronometers at all entered for trial in the names of the parties who considered themselves entitled to a recompense for their superiority. The Nos. 1410, 679, 1600, 460, 1502, to which they refer, appear to have been sent by Messrs. Guy, and others, to whom the prizes seem to have been adjudged, on their having first qualified themselves to receive them, by signing the required declaration that they were the makers of the chronometers in question.

Did the inventors of a new principle, then, with the consciousness of its certainty to give them an advantage over all other competitors, generously allow others to reap the benefit due to their skill, and to receive honours and rewards to which they had no title? If so, that was an act of self-denial perhaps unexampled. But, at the same time, their present procedure of resuming the honour as being due to themselves, (as if only conceded as a kind of temporary loan, and leaving Messrs. Guy and others, in a position, as regards their signature, to say the least of it, very equivocal,) does not seem well to accord with such exalted sentiments.

But I must say, Mr. Editor, that if the proofs they have adduced pass my comprehension, a recent circumstance, so plain as to preclude mistake, still puzzles me much more:—The parties claiming a reward for this discovery, founded upon such proofs of its utility as have been mentioned, did not appear as competitors for the public prizes until 1834, when they sent two chronometers, both of which were withdrawn by order of the Astronomer-Royal, "having exceeded the limits of any reward." On the trial now pending, four chronometers have been placed by them, three of which having likewise exceeded those limits, are withdrawn, and the one remaining at present stands in the list for the last premium, which it yet has to win.

If, then, they are enabled in all cases to give permanence to the rates of their chronometers, one would have expected that upon an occasion where public attention is specially fixed upon them, such as that of the public trial at the Royal Observatory, they would not have failed to manifest their superiority in the most unequivocal manner. On the contrary, to use their own words, applied to another subject, it would almost seem that as to their peculiar principle, "without being a party to the bargain, the instruments were turned over to its benevolence, to pursue their vagaries without interference."

With regard to the detent on a spring, they are misinformed. That improvement was first applied by Mr. Arnold, as was proved before a committee of the House of Commons, and for which he received a reward from the Board of Longitude.

Again, Sir, we are told by no less an authority than capt. Sir John Ross, in the letter I have referred to, that chronometers are more portable when they are down than when wound up. Here again I am left as much in the dark as before; and, unless the worthy knight will give a mathematical demonstration of the truth of his statement, I must remain under my present belief, that as regards their mechanism, chronometers are in a more dangerous condition, when allowed to run down in order to be made portable.

"I am, Sir, &c. &c.

"AN OBSERVER.

THE VESSELS LEFT IN THE ICE.

Our readers are aware that several of our whaling ships were left in the ice in Baffin's Bay last season, and the following memorial has been transmitted from Hull on the occasion:—

(Copy.)

To the Right Hon. the Lords Commissioners of the Admiralty.

The Memorial of the undersigned managing and other owners of ships employed in the Davis' Straits Whale-fishery from the port of Hull—

Sheweth,—That the following six ships, Abram, Dordon, Duncombe, Harmony, Jane, William Torr,—all of the port of Hull; together with the ships Lady Jane, and Grenville Bay, of Newcastle; Norfolk, of Berwick; Viewforth, of Kirkcaldy; and Middleton, of Aberdeen; making in all eleven sail, were left on the 11th day of October, 1835, by the ship Alfred, of Hull, (since arrived,) closely beset in the ice, in lat. 69° to 70°, and long. 60° to 65°, with little prospect of their being speedily liberated; and, as the frost had then set in severely, and as nothing has since been heard of these ships, your memorialists are very apprehensive that they may be compelled to remain in that perilous situation, until the return of spring shall have broken up the ice, so as to allow of their escape.

That, although the ships belonging to your memorialists (and they have no doubt all the others) were, when they left the port of Hull, abundantly supplied with provisions, and every thing necessary for the comfortable subsistence of the crews considerably beyond the expected duration of the voyage, yet they are not sufficiently provided with the means of supporting life through the severities of an Arctic winter, particularly as the crews of two wrecked vessels are added to their original number; and your memorialists greatly fear that the crews, amounting altogether to upwards of 600 souls, will be exposed to dreadful sufferings in that inclement region, unless it should be found practicable to supply them with food, clothing, and fuel; and this, it is presumed, might be effected if a ship furnished with such necessaries could open a communication with them over the ice.

Your memorialists are informed that your Lordships have on various occasions supplied the wants of vessels falling short of provisions, &c., in consequence of being prevented reaching their port by adverse winds; and, as the present unhappy situation of their ships has not been occasioned by any deficiency in their original equipment, nor by imprudently venturing into places whither they had not been used to resort, but solely by the unprecedented accumulations of ice, owing to the extreme severity of the season, your memorialists cannot but view this as a case worthy of your Lordships' interference.

Your memorialists therefore pray that your Lordships will be pleased to take into your immediate and most serious consideration the case of these unfortu-

nate men, and adopt such measures as to your wisdom may seem fit and proper for granting them effectual relief, to enable them to stay by their ships, and either prosecute the fishery in the ensuing season, or return home in safety, whichever may appear most expedient, so that the anxiety unavoidably felt by the families of these poor sufferers may be abated, and that the losses already sustained by your memorialists through the total failure of the fishery, may not be aggravated by the destruction of such a number of their fellow-creatures, and the valuable property entrusted to their charge.

And your memorialists will ever pray, &c.

Hull, 4th December, 1835.

(Signed,)

Thomas Bell,	Robert Lee,	Henry Preston,
Joseph S. Egginton,	William Gibson,	Thomas-William Torr,
S. H. Egginton,	George Locking,	William Hopwood,
John Egginton,	Charles Patrick,	John Beadle,
Fr. Hall,	Edward Dannatt,	Edward Gibson,
Thomas Barkworth,	Samuel Cooper,	William Ward,
Thomas Shackels,	John Smith,	John Tall,
John C. Cankrien,	George Rudston,	James Bowden,
Philip Dannatt,	Thomas Ward,	William Burstall,
BenjaminStocks, jun.	W. S. Cooper,	William Manger,
S. T. Hassell,	Tidd, Mercer, & Co., Gainsbro',	Robert Dring.
John Shackels,		

To the foregoing Memorial the following reply was sent :—

(Copy.)

Admiralty, 7th December, 1835.

Gentlemen,—Having laid before my Lords Commissioners of the Admiralty your letter of the 5th instant, transmitting a memorial from the Greenland Ship-owners at Hull, praying for assistance and relief to be sent to the ships which have been detained in the ice at Davis' Straits, I am commanded to acquaint you, that, much as my Lords regret the unfortunate situation of the crews of these ships, they do not think that it is possible, from the advanced period of the season, to afford them the assistance required.

I am, Gentlemen, your most obedient servant,

C. Wood.

To Messrs. Lightfoot and Earnshaw, Hull.

In consequence of Mr. Wood's letter, the Memorial, of which the following is a copy, was transmitted immediately to the Board of Admiralty :—

"To the Right Honourable the Lords Commissioners of the Admiralty.—

The memorial of the undersigned owners of ships employed in the Davis' Straits whalefishery from the port of Hull,

"Sheweth—That when you memorialists had the honour of addressing your lordships on the subject of the ships detained in the ice in Davis' Straits, praying for assistance to the crews, they did not presume to specify any time as being in their opinion the most proper for affording that assistance, but left both the time and the means entirely to the wisdom of your lordships; feeling well assured, not only that your lordships would be disposed to grant the aid required, but also that your lordships possessed means of information on all matters of detail far superior to any which your memorialists could pretend to offer.

"That your memorialists feel grateful for the answer your lordships have so promptly condescended to return to their application, perceiving therein the readiness of your lordships to afford relief to those unfortunate men, did not the

lateness of the present season seem to preclude the possibility of reaching them at present. Your memorialists therefore venture to suggest to your lordships, as being the opinion of the oldest and most experienced masters of ships in the whalefishery belonging to this port, that if a ship or ships were to leave this country about the middle of the ensuing month (January) they would probably reach the edge of the ice about the time when some of those unfortunate vessels might be getting free, and when their crews (if then existing) must be in a state of extreme destitution, and when, consequently, a supply of provisions and other necessaries would be most timely, and might prove the means of saving them from utter destruction.

"Your memorialists have been informed that in the years 1826 and 1827 the ship Dundee, of London, passed the winter in Davis's Straits, being beset in lat. 73 or 74; that she drifted slowly down with the ice to about 62 or 63, until in February the ice opened and she escaped. The sufferings of the Dundee's crew were much alleviated by the wreck of a Dutch whaler (abandoned by her crew) being in their vicinity, from this wreck they procured provisions and fuel sufficient to eke out their own scanty means, and enable them to support their privations. But the crews of your memorialists' ships have no such resource to fly to, and must therefore be in a most deplorable condition whenever they shall regain their liberty.

"Your memorialists are the more urgent in their representaions from a conviction that if your lordships decline to interfere, any attempt at assistance which in that case your memorialists would see it their duty to make, would be greatly wanting in efficiency, they not having the ample stores which are at your lordships' command to resort to, nor (and which is perhaps of greater importance) would the officers of a private ship have sufficient authority to restrain excesses, and a spirit of insubordination, too likely to be found amongst such a number of men confined under severe privations, and suddenly restored to plenty and a sense of freedom, and whose anxiety to revisit their homes might induce the crews of the beset ships first relieved, to combine together, possess themselves of any private vessels sent out to them, and return home, thereby leaving their own ships and their less fortunate comrades to certain destruction.

"Your memorialists therefore earnestly beseech your lordships that you will be pleased to assure your memorialists, that this sad case shall remain under your lordships' favourable notice, and that you will order adequate relief to be forwarded to the poor sufferers so soon as the season will allow of the attempt being made with safety to those who shall be employed in that service.

"And your memorialists will ever pray, &c.

(Signed)	Edward Gibson	Geooge M'Kenzie	George Locking
	John C. Cankrien	Robert Dring	John Beadle
	John Egginton	William Ward	Robert Lee
	S. T. Hassell	William Burstall	John Tall
	Thomas Barkworth	Samuel Cooper	William Manger
	Henry Preston	Thomas William Torr	P. Dannatt.
	John Smith	Thomas Ward	Charles Patrick
	William Gibson	W. S. Cooper	Edward Dannatt
	Benj. Stocks, jun.	James Bowden	John Shackels
	Thomas Bell	William Hopwood	Thomas Shackels.

Hull, 10th December, 1835.

We must now refer our readers to the little polar-map which will be found in our third volume (p. 267) with which we shall be enabled to tell the precise situation of the frozen-up ships.

The following lie in *Home Bay*, on the western side of Baffin's Bay, (Cape

Kater forms its northern point,) and they are close in shore: viz. The William Torr, and Jane, of Hull; the Viewforth, of Kirkcaldy; and the Middleton, of Aberdeen.

Due east of Cape Kater, nearly midway between the two shores, lie the Abram, Dordon, Harmony, and Duncombe, of Hull; the Lady Jane and Grenville, of Newcastle, and the Norfolk, of Berwick, surrounded by the ice. The line of the ice, when it was last seen, extended from Women's Island towards Cape Walsingham, leaving a channel of water from those islands and Queen Anne Cape, varying from 50 to 120 miles wide.

There are eleven ships beset, each of which we may calculate to be manned by 48 seamen, making together 528 men. Then portions of the crews of the Mary Francis, the Lee, and the Isabella, which were lost, who are dispersed on board the different vessels, may be calculated at 60 or 70 men more, so that nearly 600 men are left on the ice.

If the men attempt to escape to the settlement of Wileyford, in lat. 67½, of to Leifde, which is situate in about 68½°, in their boats, it is to be feared, and there is every reason to believe, they will perish in the attempt.

The ships know nothing of their respective situations, so that there is no reason to believe that they will communicate with each other.

The nearest Moravian settlement is New Hernhut, situated in lat. 74; there is also another called Lichtenfeld, more to the south, in 62½°.

There is no possibility of assistance reaching the vessels till they get out of the ice themselves, which may be in March or April; but the ice takes such different turns, they may get out before that.

To the foregoing we shall add an extract from the reply of Captain Humphreys* to a letter from Captain Ross, as the opinion of that gentleman, from his great experience in the polar seas, may be looked on as of the highest importance.

"I cannot state the exact number of the respective crews, but as near as I can calculate I think you will find the following statement nearly correct:—Duncombe, 48 men—Abram, 48—Harmony, 48—Jane, 49—William Torr, 48—Dordon, 48—Mary Frances, lost, crew left, 41—Isabella, lost, crew left, 3—Lee, lost, crew left, 16.—Belonging to Hull 349
Viewforth, of Kirkcaldy, 47—Middleton, of Aberdeen, 48—Lady Jane, of Newcastle, 59—Grenville Bay, of Newcastle, 50—Norfolk, of Berwick, 50.—Belonging to various other ports..... 254

Total men left with the ships 594

"To state the exact quantity of provisions of each ship is impossible; but the average is about eight months full allowance. Some have only seven months, for the Harmony and Norfolk have had to borrow of the Grenville Bay and Lady Jane; but as to the quantity I cannot speak with accuracy. It would, however, be exceedingly erroneous to calculate upon the probable excess of provisions; for having got beset so late, they have been no doubt on full allowance up to the time, and hence the scantiness of the provisions left must necessarily be very considerable. If this be true, (and I think a careful examination of the question will show it to be so, it proves the imperative call upon the British government to adopt immediate and decisive measures for the relief of our suffering countrymen. When last seen, the Jane, Viewforth, and Middleton were five miles off the west land, near Cape Hooper; and the William Torr, south of the low land, close in-shore, in latitude 68°. The

* The same individual who commanded the Isabella, which saved Sir John Ross, and has since been lost. See No. 210 of our wrecks in last volume.

Duncombe was the easternmost ship when left by the Alfred, distant from the island of Disco 130 or 140 miles. The other six were left in a group, bearing from the Duncombe N.W. distant about fifteen or twenty miles. Young ice was then making rapidly, and a large body of ice was drifting from the northward, which would consequently render the effort more difficult to extricate themselves from their position. The latitude of the seven easternmost ships was 68° 57′, by Captain Brass's account.

"As you have freely made these inquiries of me, I trust you will not deem it presumption if I give you my opinion, as to the best manner of affording relief. By all means I should recommend the government to undertake the task. I should advise that two ships, of from 300 to 400 tons, or such size as may be thought most convenient, be fitted up, with doubling from the bends as far down as may be thought fit, fortified with ice-knees on the outside of the bows, and also a strong fortification within, as far aft as the after part of the fore-channels, with adequate provisions, clothing, coals, &c. as the case requires; with efficient officers and crew. I should by all means recommend that an ice-master and mate accompany each ship.

"The ships must be sent out without delay, and proceed immediately to the ice; after having passed cape Farewell, in long. 50 W., the ships should separate, one making the ice, in lat. 57 N. and the other in 60 N. and commence plying along the edge, and examining most strictly every bight; a strict look-out should be kept, as it is more than probable that the seven ships, left in the middle of the straits, may be separated by a variety of causes, known only to the men of great experience in those regions. After having, I hope, fallen in with and relieved the seven ships, the expedition will be at liberty to devote their united attention to render relief to the four which are in-shore.

"The plan to be adopted, on this occasion, is simple. As soon as the ice will allow, they must proceed either to the Holsteinburg or Leively, the Danish settlements. On their making known the object of the expedition, assistance will be given, and dogs and sledges in sufficient numbers must be taken on board, for conveying provisions, clothing, &c. over the ice to the four ships. Other arrangements may easily be made. I should have stated that the four ships will not be able to get out until the breaking up of the land-ice, which will not be until August.

"If the government undertake the expedition, it will be rendered more efficient, and better discipline will ensure greater certainty of success.

"I think, sir, that the present time cannot be deemed unsuitable; for before the expedition can be fitted out considerable time will have elapsed, and by the time it arrives at the ice, the seven ships will either be lost, or out of the ice waiting for succour, as they will not dare to attempt to cross the Atlantic in their enfeebled state. This is no time to stand with folded arms; the cries of suffering humanity—the distress which visits our doors, and the tears of wives—and, if decisive measures be not adopted, of orphans too—call loudly upon the philanthropy of the British nation to action. England, that is renowned among the nations of the earth for the exercise of Christian love and disinterested benevolence, is now summoned, by every motive which can sanctify her sympathy, to disregard at once the fears of probability, and at least make the effort to rescue her sons from the inhospitable climes of the North.

"R. W. HUMPHREY."

The following Resolutions have been passed by the Trinity House of Hull: That this Corporation do subscribe the sum of One Thousand Pounds, to be placed at the disposal of the committee of ship-owners, who have undertaken the care and management of providing and fitting out a ship or ships, for the above purpose.—And in order to alleviate as much as possible, at the present inclement season of the year, the distress to which many of the wives and

children of such of the seamen now detained on board the said several ships and vessels, as belong to this port, will be subjected;—

It was also resolved unanimously, That an investigation be instituted into the circumstances of the families of such seamen, with a view to affording relief to such as may appear to require it.

In consequence of these representations, we are glad to find that the government has determined on sending out an expedition, and has accepted the proffered services of Capt. Ross, to rescue the unfortunate crews of the ships, if possible.

The plan of proceeding will be as follows:—A ship adapted for the navigation of the Arctic seas is to be immediately fitted out, and despatched to the nearest point attainable, to the frozen-up vessels; she is to be commanded by the gallant Captain James Ross, the nephew of Sir John Ross, and his companion in the celebrated expedition to the northern pole. She is to be manned by a hardy crew of volunteers, men inured to the difficulties and the dangers attendant on the navigation of the northern seas, in the whaling ships. The vessel selected for this arduous service is the Cove, one well suited for it, possessing all the capabilities requisite, and the property of Messrs. Spyvee and Coopers, of Hull. She is now fitting out under the direction of Mr. Humphrey, late of the Isabella, the gentleman by whom the two Captains Ross, and their brave crew, were rescued from their dreary abode, and brought to this country in 1833. Numbers of volunteers have already offered their services to man the Cove, and aid in rescuing their brother mariners.

The primary object of Captain Ross will be to proceed, at once, in H.M.S. Cove, the vessel which, in pursuance of the above resolution, has been supplied to government for the *immediate* service; and endeavour to relieve those ships which may drift out of the middle ice, and the crews of which are supposed, even if the vessels are free, to be now suffering not only from hunger and fatigue but also from disease.

Two bombs, the Terror and Erebus, are, it is understood, to follow the Cove, being properly fortified to enter the ice, and it is to be hoped, by bodily exertion on sledges, drawn by dogs or deer, to effect the liberation of our unfortunate countrymen, should they be unable to extricate the vessels themselves.

The Terror and Erebus will not, in all probability, sail before the middle of February, as they will require peculiar strengthening* similar to the Arctic ships, in the event of accident compelling them to winter; and further, they cannot well attempt to take the ice before the middle of March.

The officers and crews of those vessels will, of course, be volunteers, and will be on nearly a similar establishment to our Arctic expeditions.

Since the foregoing was written, one of the ships from the middle of the Strait has arrived at Hull, and reports that the six others have got clear of the ice. Until we have further authentic record of these six, the bombs will certainly be advanced. But should they have escaped, it is possible that only one will join Capt. Ross. In either case, this second expedition will be fitted out, and conducted to the ice, with all possible despatch, under the command of that distinguished scientific officer, Commander Belcher; to whom, on the departure of the Cove from Hull, on the 3d of January next, will devolve the sole charge of equipping and conducting this expedition.

Lieut. R. M. Crozier, late of the Stag, will be first Lieutenant of the Cove, and Mr. Hallett will be clerk in charge, and we are happy to find that that experienced seaman, Mr. R. W. Humphrey, who volunteered for the expedition at the meeting at Hull, and who lately commanded the Isabella when she saved Captain Ross, is appointed acting-master and ice-master of the Cove.

* The reader will find a plate in our second volume, p. 260 describing the manner in which the Isabella was fitted for this purpose.

Naval Register.

Commissioners for executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland.

The Right Honourable Gilbert Earl of Minto.
Rear-Admiral Sir Charles Adam.
Rear-Admiral Sir William Parker.
Captain the Hon. George Elliott, C.B.
Captain Sir E. T. Troubridge.
The Right Hon. Archibald Lord Dalmeny.

Secretary—Charles Wood, Esq. M.P.

[For the names of the various Captains and Commanders, see former numbers.]

THE ROYAL NAVY IN COMMISSION—NOVEMBER 21ST, 1835.

At Home.

PORTSMOUTH.

Admiral, Sir Thomas Williams, G.C.B.—*Flag-Ship*, BRITANNIA, 120.

PLYMOUTH.

Admiral, Sir William Hargood, G.C.B., G.C.H.—*Flag-Ship*, ROYAL ADELAIDE, 104.

NORE.

Vice-Admiral, Hon. C. E. Fleeming.—*Flag-Ship*, HOWE, 120.

ASTREA—Falmouth.
BRITANNIA, 120—Portsmouth.
EXCELLENT, late BOYNE—Portsmouth, for the practice of naval gunnery.
HOWE 120—Sheerness.
OCEAN, 80—Sheerness.
PORTSMOUTH, *Yacht*—Portsmouth.
PRINCE REGENT *Yacht*—Deptford.
QUAIL—Portsmouth station.
ROYAL GEORGE *Yacht*—Portsmouth.
ROYAL SOVEREIGN *Yacht*—Pembroke.
ROYAL ADELAIDE, 104—Plymouth.
SCOUT—Sheerness, Com. R. Craigie.
SEAFLOWER, *Cutter*, 4 — Portsmouth station.
SPEEDY, *Cutter*—Portsmouth station.
WILLIAM AND MARY, *Yacht*—Woolwich.

Abroad.

LISBON STATION.

Rear-Admiral, W. H. Gage.—*Flag-Ship*, HASTINGS, 74.

CAMELEON, 10 — 16th Oct. arrived at Lisbon from Oporto.
CASTOR, 36—30th Sept. at St. Andero.
CLIO, 16—Nov. sailed from Lisbon for Mediterranean.
HASTINGS, 74 — In the Tagus 13th Oct.
MAGICIENNE, 26—10th Nov. arrived at Cadiz.
PEARL, 20—13th Dec. sailed for coast of Spain.
PHŒNIX—St.V.—North coast of Spain. 3d Oct. left Portsmouth.
RINGDOVE, 16—Oct. north coast of Spain.
ROYALIST, 10—Oct. north coast of Spain.
RUSSELL, 74—11th Oct. arr. at Lisbon from Corunna.
SARACEN, 10—Oct. north coast of Spain.
STAG, 46—24th Oct. arr. at Lisbon from the Gambia.
TWEED, 20—23d Oct. in the Tagus.
VIPER, 6—11th Oct. arr. at Lisbon from Corunna.
WATERWITCH, 10—See African station.

MEDITERRANEAN STATION.

Vice-Admiral, Sir Josias Rowley, Bart., G.C.B.—*Flag-Ship*, CALEDONIA, 120.

ALBAN, St. V.—21st Nov. left Malta for Alexandria.
BARHAM, 50 — 22d Oct. arrived at Malta from Corfu.
CALEDONIA, 120—16th Oct. arrived at Malta from Zante.
CANOPUS, 84 — 16th Oct. arrived at Malta.
CEYLON, 2—Malta.
CHILDERS, 16—8th Oct. at Cadiz.
COLUMBINE, 18—16th Oct. arrived at Malta.
EDINBURGH, 74—16th Oct. arrived at Malta.
ENDYMION, 50—8th Oct. at Cadiz.
FAVORITE, 18—8th Oct. at Smyrna.
JASEUR, 18 — 8th Oct. on coast of Spain.
MALABAR, 74—8th Oct. at Cadiz.
MEDEA, 6—14th Oct. at Malta.
ORESTES, 18—3d Nov. at Tripoli.
PORTLAND, 52—2d Oct. sailed from Malta.
PLUTO, St. V.—15th Sept. sailed for Odessa.
REVENGE, 78 — 16th Oct. arrived at Malta.
RODNEY, 92—14th Dec. sailed for Mediterranean.
SAPPHIRE, 28—8th Nov. at Corfu.
THUNDERER, 84—26th Sept. off Navarino.
TRIBUNE, 24—8th Oct. at Cadiz.
TYNE, 28—8th Oct. on coast of Spain.
VERNON, 50—26th Oct. off Navarino.
VOLAGE, 28—30th Oct. arr. at Malta.

CAPE AND AFRICAN STATION.

Rear-Admiral, P. Campbell, C.B.—*Flag-Ship*, THALIA, 46.

BRITOMART, 10—30th Aug. at Ascension.
BUZZARD, 10—June Bight of Benin.
CHARYBDIS, 3—24th July left St. Helena for the Cape.
CURLEW—Aug. at Sierra Leone.
FAIR ROSAMOND, *Schooner*—June in Bight of Benin.
FORESTER — 21st June off Prince's Island.
GRIFFON, 3—July in the Gambia.
LEVERET—24th Sept. sailed from Plymouth for Gambia and Cape.
LYNX, 10—June Bight of Benin.
PELICAN—4th July arrived at Cape from Ascension.
PYLADES, 18 — 3d Oct. sailed for Africa.
ROLLA, 10—Aug. at Sierra Leone.
THALIA, 46 — 15th Aug. at Ascension; 16th Aug. sailed for Cape.
TRINCULO, 18 — June in Bight of Benin.
WATERWITCH—16th Dec. sailed for coast of Africa.

EAST INDIA STATION.

Rear-Admiral, Hon. Sir T. B. Capel. *Flag-Ship*, WINCHESTER, 52.

ANDROMACHE, 28—15th July arrived at Mauritius from Madras.
HYACINTH, 18—23d June at Sydney.
RALEIGH, 16—17th June at Bombay.
RATTLESNAKE, 28 — 2d Aug. left Bombay on a cruize.
ROSE, 18—18th April at Singapore, from Malacca.
VICTOR, 18—7th June at Cape; 11th sailed for Mauritius.
WINCHESTER, 52—21st April sailed for Bombay.
WOLF, 18—5th Feb. sailed from Algoa Bay for India.
ZEBRA, 16—12th March sailed for Trincomalee.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral The Right Hon. Sir G. Cockburn, G.C.B. *Flag-Ship*, PRESIDENT, 52.

BELVIDERA, 42—7th Oct. arr. at Barbados from Bermuda; 11th Nov. remained.
CHAMPION, 18—28th Oct. arrived at Jamaica.
COLUMBIA, St.V.—11th Nov. at Barbados.
COMUS, 18 — 23d Oct. arrived at Jamaica.

CRUIZER, 18—22d Sept. arrived at Barbados from Para; 28th Nov. at Bermuda.

DEE, St.V. 4—22d Oct. at Jamaica.

DROMEDARY—Bermuda.

FLAMER, St.V.—Running with mails between Jamaica and Barbados.

FORTE, 44 — 26th Aug. arrived at Quebec.

GANNET, 18—1st Oct. at Jamaica.

LARNE, 18—29th July at Barbados.

MAGNIFICENT, 4—Port Royal.

METEOR, St. V.—4th Oct. arrived at Barbados.

NIMROD, 20 — 13th Dec. sailed for West Indies.

PICKLE, 5—27th Oct. left Jamaica for Chagres.

PIKE, 12—2d Oct. left Grenada for Jamaica.

PINCHER, 5—Tender to flag-ship, 20th Sept. left Jamaica for Nassau.

PRESIDENT, 52 — Vice-Admiral the Right Hon. Sir Geo. Cockburn, G.C.B., 26th Aug. arrived at Quebec.

RACER, 16—18th Dec. arr. at Portsmouth: left Bermuda 28th Nov. On the coast of Labrador the Racer got on shore, in Esquimaux Bay.

RACEHORSE, 18—23d Sept. arrived at Maranham from Para.

RAINBOW, 28—17th Oct. at Jamaica.

SAVAGE, 10—11th Nov. at Bermuda.

SCYLLA, 18—16th Aug. arr. at Vera Cruz from Jamaica.

SERPENT, 16—11th Oct. left Halifax for Newfoundland.

SKIPJACK, 5—7th Aug. at Port Royal.

SNAKE—9th Nov. arr. at Spithead and sailed for Port Royal.

SPITFIRE, St. V. — running between Jamaica and Barbados.

VESTAL, 26—10th Oct. left Grenada for Trinidad.

WASP, 18—1st Oct. off Jamaica, north side.

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hamond, K.C.B. *Flag-Ship*, DUBLIN, 50. 2d June.

ACTÆON, 28 — 5th Oct. arrived at Rio Janeiro.

BASILISK—20th Aug. arrived at Valparaiso, from Rio, by the Strait of Magellan.

BLONDE, 46—4th June at Callao from Valparaiso.

CLEOPATRA, 26—29th Nov. left Portsmouth for Rio Janeiro.

COCKATRICE, 6—Running between Rio Janeiro and Buenos Ayres.

DUBLIN, 50 — 30th August at Rio Janeiro.

HARRIER—19th Nov. left Spithead for South America.

HORNET, 6—Running between Monte Video and Rio Janeiro.

NORTH STAR, 28—6th July left Rio for Valparaiso.

RAPID, 10—6th July left Rio.

ROVER, 16—19 Aug. sailed from Bahia.

SATELLITE, 18—Ordered home; 18th June at Callao.

SPARROWHAWK, 18—25th July at Valparaiso.

TALBOT, 28—24th May left the Cape for Rio. Arrived 22d June.

WANDERER, 16—1st Nov. sailed from Plymouth for Rio.

TROOP SHIPS.

ATHOL, *Troop Ship*—9th Sept. arrived at Plymouth from Cork.

BUFFALO, *Store Ship*—Portsmouth.

JUPITER, *Troop Ship*—3d Oct. sailed from Spithead, with Lord Auckland and suite, for India; 13th Oct. arrived at Madeira; 17th sailed.

ROMNEY, *Troop Ship* — 18th Aug. arrived at the Cape.

STEAM VESSELS.

AFRICAN—Packet Station.

ALBAN—See Mediterranean Station.

BLAZER—Woolwich, ordinary.

COLUMBIA—See West Indies.

CARRON—Woolwich, ordinary.

COMET—Woolwich, refitting.

CONFIANCE, 2—Running with mails between Malta and Corfu.

DEE, 4—See North American Station.

ECHO—Woolwich, refitting. Ordinary, in dock.

FIREBRAND—Woolwich.

FIREFLY—Packet Station.
FLAMER, 6—See West India Station.
HERMES—See Packets.
LIGHTNING—Woolwich, ready for sea.
MEDEA, 6—See Mediterranean Station.
MESSENGER, 1—25th Oct. Woolwich, ready for sea.
METEOR—See West India Station.
PHŒNIX—See Lisbon Station.
PLUTO—Mediterranean.
RHADAMANTHUS—Woolwich. Ordinary.
SALAMANDER — Woolwich. Ordinary, complete.
SPITFIRE, 6—See West India Station.
TARTARUS—Woolwich, refitting.
EXPRESS, SWIFT } Sailing Packets, fitting.

SURVEYING VESSELS AT HOME AND ABROAD.

ÆTNA, 6—18th Dec. sailed for the survey of the Gold Coast.
BEACON—Archipelago.
BEAGLE, 10—Coasts of Patagonia and Chili.
FAIRY, 10—North Sea.
GULNARE, Hired Schooner—Gulf of St. Lawrence.
LARK—15th Nov. sailed from Portsmouth for West Indies.
MASTIFF, 6—Archipelago.
RAVEN—18th Dec. sailed with Ætna.
SULPHUR—Portsmouth, fitting.
THUNDER—28th Nov. at Bermuda.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; Assistants, Lieuts. J. Harding, G. A. Frazer.—Coast of Ireland.
Lieutenants, M. A. Slater; H. C. Otter.—East Coast of Scotland.
Lieutenants, W. L. Sheringham; A. Kortright.—Cardigan Bay.
Lieutenant C. G. Robinson.—North Coast of Wales.

PAID OFF.

STAG—16th Dec. Plymouth.

DESTITUTE SEAMEN'S ASYLUM.—The benevolent readers of the Nautical Magazine, (and we may surely conclude that we have many such,) will be gratified to hear, that on the 22d ult. the new building in Well-street, White Chapel Road, dedicated to the reception of destitute and houseless seamen, was opened. This event, for we may justly assume that it forms an era in the annals of our metropolitan charities, was solemnized with suitable religious observances. After a brief statement, by the Rev. Mr. Dodsworth, of the objects of the institution, the 41st Psalm was sung, in which the seamen present, and the children of the school for the orphan girls of seamen, were heard to unite their voices in an accord which could not fail to affect the heart. The reverend gentleman then read the third chapter of the First Epistle of St. John, and applied its divine precepts of benevolence to the occasion. After which, the Bishop of Isle aux Nois addressed the assembly, and with great earnestness and simplicity exhorted them on the duty of caring for their distressed fellow-creatures. He enforced particularly on the minds of his hearers, the indispensable regard which they should have to the spiritual as well as temporal wants of the necessitous. His address was followed by the simple and beautiful doxology, "Praise God from whom all blessings flow;" and, after this had been sung, a fervent prayer was offered up by the Rev. Mr. Dodsworth, for the blessing of God on the institution. The bishop then pronounced the benediction: and thus was dedicated by the word of God, by prayer and by praise, one of the most genuinely philanthropic establishments that has ever been reared in this metropolis, abounding as it does in noble charities.

The lower apartment of the asylum was occupied by a numerous company of highly respectable persons, who appeared to feel the sincerest gratification in the interesting object that had convened them. Nor will the expression of gratitude on many of the countenances of the poor sailors present, be easily forgotten: and to those who were more especially instrumental in raising funds

for the erection of this unpretending, but most interesting edifice, it must have been a rich reward. Such an institution as this is indeed worthy of national encouragement in the highest degree; and we cannot but trust that an asylum for destitute seamen, originated as this has been by energetic private benevolence, and advanced so far by *strenuous individual* exertion, will never be permitted to languish for want of public support. It may justly claim the friendly offices of any inhabitant of this sea-enriched, and, under Providence, sea-guarded empire, who has the power to befriend it. Nay, we may go further, and assert, that it may justly claim the countenance and assistance of every civilized state on the globe; for let it never be forgotten, that the Destitute Sailors' Asylum offers a shelter, not only to the distressed *British* seamen, but to the houseless mariner of *any* nation. Those, therefore, who have the opportunity, by foreign connection, to introduce it to the notice of persons residing in the different countries of Europe and America, may largely serve the cause of humanity, by thus exerting their influence in its favour. We would urge this hint on the attention of the readers of the Nautical Magazine, among whom it is highly probable that there are many who may possess the means of thus rendering efficient aid to the funds of this admirable institution.

Births.

At Brighton, the lady of Captain Sotheby, R.N., of a daughter.

At Were, the wife of Lieut. P. P. Inskip, R.N., of a daughter.

Marriages.

On the 23d Nov., at Tunbridge Wells, by the Rev. John-Stuart Horner, M.A., Captain Henry D. Trotter, R.N., son of Alexander Trotter, Esq. of Draghorn, to Charlotte, second daughter of the late Major-General James Pringle, H.E.I.C.S.

At All-Souls, Marylebone, London, Lieut. J. C. Grave, R. N., to Mary, widow of the late J. Treacher, Esq. of Chiselhurser, Kent.

On the 11th Dec., at Stapleton, Lieut. Warre-Squire Bradly, R.N., son of the late Rev. W. S. Bradly, rector of Chard, and vicar of Timberscombe, in the county of Somerset, to Sophia, only daughter of Captain Benjamin Smith, R.N., of Fishponds, near Bristol.

Deaths.

On the 24th Nov., at Boulogne-sur-Mer, Rear-Admiral Horton, aged 67.

At Tralee Spa, Captain Francis-Edw. Collingwood, of the Royal Navy.

At Downpatrick, J. M'Kitterick, Esq. Surgeon, R. N., in the 33d year of his age.

Drowned, in June last, in Montego Bay, Jamaica, C. Wilde, Midshipman, R.N., youngest son of the late Rev. J. Wilde, of Harnage, Shropshire.

At Dover, aged 31, Lieut. Francis Wodehouse, Royal Navy.

At Kilham, Richard Anderson, Esq., Master, R.N. (1795.)

In London, on the 8th of Dec., of scarlet fever, John Fillis, Esq., Purser, Royal Navy, aged 56.

At Percy-place, Plymouth, Captain Thompson, R.N., aged 61 years.

At Honduras, Lieut. J. C. Grigg, R. N., Stipendiary Magistrate at that place.

Lately, at Naples, Capt. Packwood, R.N. (1811.)

Near Greenock, Lieut. T. Carmalt, R.N., in his 60th year.

On the 19th Oct., at Constantinople, Mr. Hugh Corlyn, Purser of the Volage.

Lately, at Jamaica, Commander John M'Causland, of his Majesty's brig Cruiser.

Lately, on board H.M. ship Rainbow, Lieutenant Edward Grey, and Mr. W.H. Rudland, Surgeon, both of that ship.

At Dublin, Captain Westby Percival, Royal Navy.

At Park-place, Paddington, Com. Henry Hoghton, aged 47 years.

Lately, at Walworth, Lieut. William Martyn, (1815,) R.N.

In Clarendon, Jamaica, Lieutenant Standish Haly, R.N.

At Collan, near Fowey, Lieut. Jane, R. N., sincerely and deservedly lamented.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

NOVEMBER, 1835.

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	Su.	30·18	30·20	41	43	37	45	N.	N.W.	2	2	Omg.	Bm.
2	M.	30·26	30·20	36	47	32	48	N.W.	S.	3	3	G f.	Bc m.
3	Tu.	30·09	30·07	44	47	43	48	S.E.	S.E.	2	2	Gor'(1)(2)	Bc'm.
4	W.	30·06	30·04	41	43	39	44	E.	E.	5	6	O.	O.
5	Th.	29·98	29·94	39	41	36	42	E.	E.	4	4	Go.	Go.
6	F.	29·87	29·89	35	41	33	42	E.	N.E.	2	2	Fbc.	Fbc.
7	S.	30·05	30·01	42	47	31	48	S.E.	S.E.	2	2	O.	Bcmr (4)
8	Su.	29·96	30·00	42	46	40	46	N.	N.	3	3	Bcm.	Bcf.
9	M.	30·10	30·16	39	38	35	39	N.E.	N.E.	5	6	Oq.	Oqr (3
10	Tu.	30·30	30·36	36	37	35	38	N.E.	N.E.	7	7	Oq.	Oq.
11	W.	30·40	30·36	35	41	83	43	N.	N.	6	6	Qps (2	Oq.
12	Th.	30·20	30·20	37	42	34	44	N.E.	N.	5	6	Bcp (2)	Bcp (3
13	F.	30·36	30·36	38	42	36	43	N.E.	N.	5	5	Opd (1) (2)	Op (3)
14	S.	30·20	30·10	37	41	85	42	N.W.	N.W.	3	2	Og.	Or (4)
15	Su.	30·10	30·08	41	43	37	43	N.	N.	3	3	Om.	Op (4)
16	M.	30·02	30·00	39	42	36	43	N.W.	N.W.	2	2	Og.	Bcm.
17	Tu.	29·95	29·90	43	47	38	48	S.W.	S.W.	3	3	Ogd (2)	O.
18	W.	29·86	29·76	46	52	42	54	W.	S.W.	3	7	Bcm.	Oq.
19	Th.	30·00	30·06	38	56	36	48	S.W.	S.W.	4	3	Bm.	Bm.
20	F.	30·04	29·98	45	50	38	51	S.W.	S.W.	3	7	Bcm.	Bcmp (4)
21	S.	29·92	29·90	50	52	47	53	S.W.	S.W.	6	6	Op (1) (2)	Bcmq.
22	Su.	29·87	29·80	52	55	48	56	S.W.	S.W.	6	6	Oq.	Bcq.
23	M.	29·85	29·85	52	54	50	54	S.W.	S.W.	5	4	Or (1) (2)	Bcm.
24	Tu.	29·86	29·90	49	51	42	52	S.	S.	5	8	O.	Bcm.
25	W.	29·86	29·80	50	52	49	53	S.	S.	4	5	O.	Bc.
26	Th.	29·72	29·54	52	54	50	55	S.E.	S.E.	6	6	Bcqr 1)	Bcqr (4
27	F.	29·45	29·35	53	51	50	54	S.	S.W.	6	6	Oqp (2)	Bcqp (3) (4)
28	S.	29·34	29·47	47	50	45	51	S.W.	W.	2	4	O.	Bc.
29	Su.	29·55	29·47	47	51	43	52	S.	S.	5	6	Or (1 2)	Or (3) (4)
30	M.	29·17	29·17	50	54	48	55	S.E.	S.E.	4	6	Bc.	Op (3)

NOVEMBER—Mean height of Barometer=29·941 inches; Mean Temperature=43·9 degrees; Depth of Rain fallen=1·96 inches.

N.B. On the 18th, about 9 o'clock at night, the Northern Lights appeared very brilliant.

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.

Monument of the late Captain J. Cook, R. N.
In Great St. Andrew's Church,
Cambridge.

ORIGINAL PAPERS.

FEBRUARY, 1836.

CAPEL BANK.* *Discovered by H. M. Sloop Hyacinth, June 8, 1835, on her Passage from The Friendly Islands to Port Jackson.*

To the Editor of the Nautical Magazine.

H. M. Sloop Hyacinth, Sydney, N. S. Wales, June 24, 1835.

SIR,—The enclosed remarks (on various ports that I have lately visited in these seas) I have forwarded for insertion in your valuable work, should you think them worthy, or of any interest to the maritime world. I remain, your's most obedient,

WILLIAM FORBES, (Act. Master.)

JUNE 8, 1835, at noon.—Latitude by meridian alt. 24° 52′ 51″ S. long. 159° 32′ 00″ E., Port Jackson bearing 39° 40′ W., distant 698 miles. Steering S.W. by S. course until 2·40 P.M., when, observing the water to be a little discoloured, shortened sail to double-reefed topsails. Hove-to, and sounded in 37 fathoms, sandy bottom, with coral. Lowered the quarter boats, to sound; filled, and hove-to, occasionally sounding on the bank. Steering to W.S.W. had 37, 38, and 35 fathoms, fine coral. Steering E. by N. had 35, 33, 32, and 35 fathoms, coral and white sand. Then steering N.E. by E. until 4 P.M., sounded in 35, 38, and 40 fathoms, white and red coral. Fresh breezes, and squally, hoisted the boats up, and made sail to S.W. The boats sailed in a N.N.W. direction for 2¼ miles, and sounded in 34 and 32 fathoms, coral bottom. From the mast-head we could not distinguish any part of it to break. The least water was 32 fathoms. The length of this bank we did not determine. At 8 P.M. tried for soundings, but had no bottom with 65 fathoms of line.

By observations this day, and only three hours from noon, the latitude, where we first sounded, 25° 14′ 51″ S. and longitude, by chronometer, 159° 18′ 15″ E.; the chronometer's agreeing, with distances taken, between sun and moon and moon and stars, two and three days previous.

POSITIONS OF SEVERAL NEWLY-DISCOVERED SHOALS, REEFS, AND ISLANDS, IN THE SOUTH SEAS.

Neilson Reef.†—Lat. 27° 00′ S. long. 146° 16′ 45″ W. having only 12 feet water on some part of it. The ship Lancaster struck upon this shoal some time back.

* The captain, considering that this bank until the present was not known, called it Capel Bank, after the commander-in-chief.

† See p. 693 of our 2d volume. Same reef.—ED.

The Island of Nassau.—Discovered in March, 1835, by an American whaler, of that name, belonging to New Bedford. Lat. 11° 30′ 00″ S. long. 165° 30′ 00″ W. It is a low island; no appearance of inhabitants; water and wood plentiful. This position was communicated to me by Captain Sampson, of the ship Nassau, at Tahiti, May, 1835.

Shoal.—East 40 miles from the island of Rotumah, is a shoal, of unknown extent. Rotumah is in latitude 12° 30′ S., and long. 177° 00′ E. The information respecting this shoal, as well as Nelson's Reef, I obtained from Captain Eagleston, of the American ship Emerald, of Salem.

Shoal.—Discovered in 1835, by an American ship, and communicated to me by Captain Norris, of the English ship Sisters. Lat. 26° 00′ S. long. 177° 5′ W., 55 fathoms least water.

[It is with feelings of much satisfaction that we acknowledge the attention of Mr. Forbes, more particularly as we find by his letter that the beneficial influence of our work extends even to our antipodes. We have reserved his other communications for uture numbers.]

REMARKS ON SOME OF THE GALAPAGOS ISLANDS.

By Mr. R. C. Allan, R.N.

H.M.S. Conway, Saturday, Nov. 1, 1834.—At 7 h. A.M. made the land, Charles Island bearing N. by W. ½ W. Current set during the night to the N.W. about one mile and a half per hour. At 8 h. 30 m. saw Gardner Island, and at 9 h. 30 m. Caldwell Island, both small islands. At noon Charles Island (centre) N.N.W. distant twelve miles. Lat. by observation 1° 34′ S.

CHARLES ISLAND.—No landing apparently on the south side of the island. Rounded Saddle Point at the distance of three miles; steered direct for the west point of Post-office Bay; no bottom with fifteen fathoms the whole way; ship going six knots; rounded the last-mentioned point at the distance of half a mile; saw Albemarle and Duncan islands. At 5 h. 30 m. P.M. anchored in Post-office Bay, in seven fathoms, sandy bottom.

Bearings at Anchor { Middle and Highest Mount S. 11° E.
Extremes of the Bay . . E.30°N., W.7°N.

On the east side of the bay are several small, flat, rocky islets, off which a shoal extends a short distance, and has three fathoms and a half. This is a snug smooth anchorage, but there is nothing to be obtained.

Monday, Nov. 3.—Shifted our berth to Black-Beach Bay, on the west side of the island, about six miles N.N.E. from Saddle Point.

Bearings at Anchor { A Small Hut at the Landing Place E. 7° S.
Saddle Point (saddle) . . . . S. 13° W.
Saddle Point (extreme) . . . S. 19° W.
West Point of Post-office Bay . North.

Latitude of the anchorage, 1° 14′ S.; longitude, by chronometer, 90° 8′ W.; var. 9° Easterly. The tides are irregular; rise and fall about twelve feet.

The settlement cannot be seen by a vessel running past; it is situated about five miles inland, between two of the highest mountains. Water is scarce.

Nov. 4, 1834.—At 2 A.M. sailed from Charles Island, and steered north and N. by E. for Duncan Island. At daylight a group of small islands on our larboard beam.

CROSSMAN ISLAND.—This island is not laid down in its proper position in Captain Colnett's chart; its south end is in 0° 37′ south latitude, and it is about ten miles to the southward and westward of Duncan Island. There is deep water all round, and it has no harbour; but there is anchorage for vessels drawing twelve or thirteen feet in a small creek on the north side of the island. It appeared bluff and barren on all sides. The length of the island is about eight miles.

BEWEL ROCK. About six or seven miles to the S. E. of Crossman Island is a remarkable rocky islet called Bewel Rock, being near 150 feet high, and of a conical shape; it lies three or four miles off Duncan Island, and is steep to all around.

DUNCAN ISLAND. At 10 A.M. we sent our boats on shore on the south side of Duncan Island, to procure terrapin and turtles, and we then steered for the anchorage on the N.W. end of the island, keeping mid-channel between Bewel Rock and Duncan Island, and then direct for the N.W. end of the island, where we brought up at 1 P.M.

In the later charts of these islands, this has been called Indefatigable Island; Duncan Island is its original name. We found good anchorage in Duncan Bay, which is on the N.W. end of the island; it is formed by a group of small islands on the north, by the island on the east, and on the south by a high rocky island or islet.

Bearings at anchor { N. extreme of Crossman Island W. 21° S.
Extremes of Islet . . . . . { S. 3 E. / S. 53 W.
W. extreme of Guy Fawkes Group N. 3 W.

in 7½ fathoms sand. Two ship's length inshore of this berth is the outer edge of a flat extending out from the beach. Vessels sailing into this bay should take in their light sails, as very strong puffs of wind frequently blow over the land. There are two reefs of rocks extending off the south side of the island, which should not be approached nearer than two miles by strangers. There is good

landing for boats, and an abundance of terrapin and turtles may be procured.

Wednesday, Nov. 5, 1834. At six A.M. sailed from Duncan Island, and stood to westward, with a brisk wind from S.S.E. Passed Jervis Island on its south side, two miles distant.

JERVIS ISLAND. In Capt. Colnett's Chart of the Galapagos Islands, this island is laid down North of Duncan Island, and in the latest charts it has been omitted. Duncan Island has been named Duncan and Jervis Island, Jervis Island not being found in the position assigned to it by Capt. Colnett. Jervis Island lies three or four miles south of James Island, and it is about four miles in length; there is anchorage on the N.W. side of it, where whale-ships sometimes refit. Ships may anchor here, and send their boats straight over to James Island for terrapin and turtles, there being no anchorage on the south side of the latter island.

JAMES ISLAND. The passage between James and Duncan Islands is interspersed with numerous rocks and small islands, and should not be attempted.

Having passed Jervis Island, we hauled up for James Island; kept within a mile of the shore, no bottom with twelve fathoms: hove-to in the harbour; latitude of ditto, 0° 12′ S.

At 2 P.M. filled, and stood to the N.N.E. Wind S.S.E.

Thursday, Nov. 6, 1834. Passed between Abingdon and Bindloe Islands. Found a current setting to the westward at the rate of two and a half miles per hour.

December 15, 1835. ROBERT C. ALLAN.

REMARKS ON ST. JOHN NICARAGUA. *By Mr. G. Peacock, Act. Mast. in H. M. S. Hyacinth, Com. W. Oldrey.*

VESSELS bound to this port should get into lat. 11° 20′ before they steer to the westward, in order to guard against a strong S.S.E. current, which increases as you approach the coast, running at the rate of two and three knots. Coming in with the land on this parallel, you will first discover two high round mountains on your starboard bow, and one on your larboard; the former resemble the Monchigue mountains over Cape St. Vincent, the latter has the appearance of a turtle with its head to the southward; there is another mountain to the southward shelving down on its northern side, and being considerably nearer the coast, should you fall in to the southward, will be first seen, bring the turtle-shaped mountain to bear W. by S. and steer for it, and you will soon get sight of Point St. John, which may be known by its having some naked trees on it; the land about it is low, level, and covered with lofty trees. When the Point St. John bears N.W. or S.E. it has the appearance (in point of shape only) of the North Foreland.

Proceeding to the westward, you will perceive what at first-sight appears to be an extensive reef, but on a nearer approach you will discover it to be Point Arenas, with the sea breaking on its steep beach; having brought it to bear S. W. by S. steer S.W. until Sheppards, two white houses, (standing on the southern shore) are brought to bear S.E. by S. with their gable-ends touching them; steer from them until you bring a remarkable clump of trees mid-way between the north and south points of the upper end of the harbour, bearing E.N.E., you may haul up east; anchor with the southern point on with the naked trees over Point St. John, bearing E. by N. ½ N. in 4½ or 5 fathoms mud, Point Arenas bearing from N. to N. by W.

During the seasons of the norths it would be advisable, when the anchoring mark is on, to haul up for the northern point (or Point Mandeville,) and anchor with Point Arenas, bearing N.W. in 5 fathoms. The spit runs out in a S.S.W. direction from the northern shore, its southern extremity bears from Point Arenas S. ½ E. half a mile; it is about half a cable's length in breadth, commencing a little to the westward of Point Mandeville; this spit was formerly Point Arenas, the same having been washed away and formed again, where it now stands. A few years ago Mr. Sheppard had a house on its extremity, which was washed away with the point. This accounts for the error in the West India Directory and Colombian Navigator, respecting hauling up close round the point, and anchoring under it.

There is not more than three feet water in the entrance of the river St. John, the water of which is very good; wood is very plentiful, and easy to procure, not only fire-wood, but that of a hard dark colour, sawing into excellent plank for ornamental and other purposes. Alligators are very numerous in every part of the harbour, and particularly in Sheppard's and Freeman's. Fish are very plentiful, but the sein should be hauled with caution, as the sharks approach within a yard of the beach.

Proceeding out of the harbour, be careful of the current setting you down on the reef to the north-east of Point Arenas, also of that off Point St. John; you had better steer N. by E. as the current sets S. E. when you get round the point; after rounding Point St. John, it runs very strong (2½ knots) along the coast. Seven leagues to the southward of Point St. John is a remarkable hillock standing close to the coast, named Turtle Bogue; near it the principal branch of the river running from the Lake of Nicaragua (named Rio Colorado) disembogues; it commences a little above Fort St. John. It is, or was, generally believed by strangers to be a separate river, having no communication with the lake. From hence an E.S.E. course, 15 leagues, will bring you abreast of the river Cartago; a little to the northward of which stands a remarkable high mountain, called Mount Cartago;

16 leagues S.E. by S. from hence will bring you abreast of Boco del Draco, off which stand two remarkable rocks, one has the appearance of a sail. Proceeding along the land to the S.E., you will pass the Boco del Toro, and entrance of the Cheroke Lagoon; the land about them is level, and a little higher than that of Point St. John; from hence the land trends to the eastward, ten leagues to the island of Escudo, which is low, being in fact an assemblage of low islands covered with trees, having narrow channels between them; it lies nine miles from the coast, and is foul on its west, north, and eastward ends, but bold on the south side; the passage has 20 fathoms in the centre, shoaling gradually to the beach on both sides. The island in the interior, all the way from Blue-Fields to 80° 40′ W. (or about 12 leagues to the westward of Chagres) is very high, extending in some parts within a few miles from the coast; from thence to Chagres it is low, and covered with trees, but the coast may be approached all the way within a mile, and you may anchor, except in the season of the norths, along any part of the coast, in eight or nine fathoms, two miles from the beach.

Remarks on Rio Lejo. *By Mr. R. C. Allan, R. N.*

Vessels bound to Rio Lejo from the southward should (passing about twenty miles to the eastward of Isle Cocos) steer to make the land to the eastward of the port during the period between November and May, as the winds prevail from the N.E., and sometimes blow with great violence out of the Gulf of Papagayo, causing a current to set alongshore to the N.W.

A range of mountains in the interior may be seen at the distance of sixty miles; the most remarkable of them is the Volcano de Viejo, the highest part of which, bearing N.E. by N., is the leading mark to the anchorage. The shore, for some distance on each side of the entrance, is low and woody. Cordon Island, which is on the right side of the entrance, is rather higher, and its western end is a brown rocky cliff. The wooden tower, or look-out house, which is situated seven or eight miles inland, may be seen rising above the trees.

In coming from the southward, and running along the land, ships must be careful to avoid a rocky reef, which lies about seven miles E. S. E. of the anchorage off Rio Lejo, on which H. M. S. Conway struck. This reef was examined by the boats of that ship.

The two rocks that are above water (the one eight, and the other five feet high) are distant from the beach rather more than three-quarters of a mile. The ground between these rocks and 1¼ mile to sea-ward of them, and probably more, is very uneven. The rock on which the Conway struck lies S.S.W.½ W.½ of a mile

from the N.W. or highest of the two rocks. In passing this reef, give the rocks above water a berth of two miles.

Tides. The flood-tide comes from the N.W. The rise eight feet. High water on full and change, 2h. 30m.

N.B. The tides are irregular: one day, during our stay here, it was low water 16 hours.

KING WILLIAM'S BANK, ISLE OF MAN.

Trinity-House, London, 2d Dec. 1835.

NOTICE is hereby given, that, in compliance with the request of the trade, this Corporation has caused a Beacon Buoy to be placed off the South-Eastern extremity of King William's Bank, near the Isle of Man.

The soundings upon this bank vary from three to four fathoms at low-water, and the Buoy, which is coloured Red, and carries a Staff and Ball, is laid in six fathoms water, at low-water spring-tides, on the spot where Porter's Shoal has been said to exist, and with the following compass bearings, viz.:—

St. Bees Lighthouse	E. ¼ S.
Bunks Howe	W. S.W. ¼ W.
Maughold Head	W. ¼ S.
North Baroole	W. ½ S.
Point of Ayr Light	W. N. W.
Burrow Head	N. by W. ½ W.

Note. The North Baroole, bearing from the buoy W. ½ S. by compass, nearly shuts in Snea Fell, which, if kept open southward of Baroole, will be a safe leading mark in ten or fifteen fathoms water, in the event of the buoy being lost.

By Order, J. HERBERT, Secretary.

THE SHEPHERDESS ROCK, NEAR HOLYHEAD.

Extract of a letter from Lieut C. Robinson, R. N.:—

"Whilst on the north coast of Anglesea, I obtained the life-boat at Kemlyn, and proceeded to examine, more fully and deliberately than in October, the position where the Shepherdess Rock (mentioned in the Nautical Magazine for October 1834, p. 585) was stated to exist; and am more fully persuaded of the non-existence of such rock, having taken the opportunity of proceeding there at low water, and sounded in every direction about where the given bearings place it; but no change of water took place, neither is it very probable that a spot so near the shore, and with deep water all round, should not exhibit, at times, a decided overfall, which, ere this, must have been observed by the numerous fishermen alongshore, who I inquired strictly of, and they never had an idea of such a thing. The Liverpool packets are always cruising about the neighbourhood of the West Mouse, and they are ignorant of it. It is also laid down in the track of hundreds of vessels that come inside the Skerries, many drawing much more water than the Shepherdess, which was the name of the vessel stated to have struck on it."

Table XXVI.

For reducing Spanish Feet to English, and English Feet to Spanish.

1 Madrid foot = 0·92736279 English foot.
1 English foot = 1·07832545 Madrid foot.

Madrid or Engl. Feet.	English Feet and Dec. parts.	Madrid Feet and Dec. parts.	Madrid or Engl. Feet.	English Feet and Dec. parts.	Madrid Feet and Dec. parts	Madrid or Engl. Feet.	English Feet and Dec. parts.	Madrid Feet and Dec. parts
1	0·927	1·078	40	37·095	43·133	79	73·262	85·188
2	1·855	2·157	41	38·022	44·211	80	74·189	86·266
3	2·782	3·235	42	38·949	45·290	81	75·116	87·344
4	3·709	4·313	43	39·877	46·368	82	76·044	88·423
5	4·637	5·392	44	40·804	47·446	83	76·971	89·501
6	5·564	6·470	45	41·731	48·525	84	77·898	90·579
7	6·492	7·548	46	42·659	49·603	85	78·826	91·658
8	7·419	8·627	47	43·586	50·681	86	79·753	92·736
9	8·346	9·705	48	44·513	51·760	87	80·681	93·814
10	9·274	10·783	49	45·441	52·838	88	81·608	94·893
11	10·201	11·862	50	46·368	53·916	89	82·535	95·971
12	11·128	12·940	51	47·296	54·995	90	83·463	97·049
13	12·056	14·018	52	48·223	56·073	91	84·390	98·128
14	12·983	15·097	53	49·150	57·151	92	85·317	99·206
15	13·910	16·175	54	50·078	58·230	93	86·245	100·284
16	14·838	17·253	55	51·005	59·308	94	87·172	101·363
17	15·765	18·332	56	51·932	60·386	95	88·099	102·441
18	16·693	19·410	57	52·860	61·464	96	89·027	103·519
19	17·620	20·488	58	53·787	62·543	97	89·954	104·598
20	18·547	21·567	59	54·714	63·621	98	90·882	105·676
21	19·475	22·645	60	55·642	64·700	99	91·809	106·754
22	20·402	23·723	61	56·569	65·778	100	92·736	107·833
23	21·329	24·801	62	57·496	66·856	150	139·104	161·749
24	22·257	25·880	63	58·424	67·935	200	185·473	215·665
25	23·184	26·958	64	59·351	69·013	250	231·841	269·581
26	24·111	28·036	65	60·279	70·091	300	278·209	323·498
27	25·039	29·115	66	61·206	71·169	350	324·577	377·414
28	25·966	30·193	67	62·133	72·248	400	370·945	431·330
29	26·894	31·271	68	63·061	73·326	450	417·313	485·246
30	27·821	32·350	69	63·988	74·404	500	463·681	539·163
31	28·748	33·428	70	64·915	75·483	550	510·050	593·079
32	29·676	34·506	71	65·843	76·561	600	556·418	646·995
33	30·603	35·585	72	66·770	77·639	650	602·786	700·912
34	31·530	36·663	73	67·697	78·718	700	649·154	754·828
35	32·458	37·741	74	68·625	79·796	750	695·522	808·744
36	33·385	38·820	75	69·552	80·874	800	741·890	862·660
37	34·312	39·898	76	70·480	81·953	850	788·258	916·577
38	35·240	40·976	77	71·407	83·031	900	834·627	970·493
39	36·167	42·055	78	72·334	84·109	1000	927·363	1078·325

Cook's Monument.

In our last volume* we announced to our readers the departure from this life of the Widow of our celebrated circumnavigator, and we now present them with a sketch of the Monument which, with his discoveries, is left to perpetuate his memory. It is placed in Great St. Andrew's Church, Cambridge, and the inscriptions on it are as follow, line for line:—

In Memory
Of Captain James Cook, of the Royal Navy,
one of the most celebrated Navigators that this
or former Ages can boast of; who was killed by
the Natives of Owhyhee, in the Pacific Ocean, on the
14th day of February, 1779; in the 51st year of his Age.

Of Mr. Nathaniel Cook, who was lost with the
Thunderer Man-of-War, Captain Boyle Walsingham,
in a most dreadful Hurricane, in October, 1780;
aged 16 years.

Of Mr. Hugh Cook, of Christ's College, Cambridge,
who died on the 21st of December, 1793, aged 17 years.

Of James Cook, Esq. Commander in the Royal Navy,
who lost his Life on the 25th of January, 1794, in
going from Pool to the Spitfire Sloop-of-War, which
he commanded; in the 31st year of his Age.

Of Elizabeth Cook, who died April 9th, 1771, Aged 4 years.
Joseph Cook, who died September 13th, 1768, Aged 1 month.
George Cook, who died October 1st, 1772, Aged 4 months.

All Children of the first-mentioned Captain James Cook, by
Elizabeth Cook, who survived her husband 56 years, and
departed this life 13th May, 1835, at her residence, Clapham, Surrey,
in the 94th year of her age. Her remains are deposited
with those of her sons, James and Hugh,
in the middle Aisle of this Church.

On the small garter which crosses the trumpet (at right angles) grasped by the arm, is inscribed the motto

"Circa Orbem,

and on the scrawl under the shield bearing the globe is

"Nil intentatum Reliquit"—

On the globe are lines tracing the shores of the "Pacific Ocean," which words are distinctly engraved on it.

The material is grey, white, and blue marble. Date of erection does not appear. The remains of James Cook were found in lead; those of Hugh were collected, and put into lead; the widow was interred in lead.

* P. 431.

British Ships and British Seamen.—No. II.

(Continued from p. 15.)

"Now, Sir," continued Lieutenant Staysail, "the shipping articles are very good, and they tend to protect the ship-owner, commander, and officers, and a rough copy ought to be kept somewhere easy of access, so that no one may plead ignorance of them. But, Sir, the articles from number 8 to number 10, all concerning pains and penalties, are deficient. Something should have been done to secure the well-conducted seaman against ill usage and short allowance," added the Lieutenant with a particular emphasis on the words "ill usage and short allowance," which he gravely repeated. "But, Mr. Ernest, as I know you are endeavouring to arrive at the actual state of the whole question concerning the mercantile marine of this country, here, Sir, (continued the Lieutenant, drawing a book with papers in it from his pocket,) here are two authentic documents, which appear to justify in some degree the remarks of the Master of a British Merchant Ship, that appeared recently in the Nautical Magazine. You may depend, Mr. Ernest, they are authentic documents, so listen to them attentively."

Lieutenant Staysail then read as follows :—

"Ship Indian, Dec. 11th, 1832, off Otaheite.

"Gentlemen,

"Having cruised six months on the Western Ground, between lat. 4° and 5½′ S. and long. 107° and 110′ W., we obtained 1430 barrels of sperm oil, when the scurvy, suddenly making its appearance, drove us from the whaling ground in the midst of our success. We anchored at Otaheite on the 9th of November, with a very debilitated crew; and in order to their quick recovery, I allowed those most affected to stay on shore; but instead of their taking the advantage I intended, of the benefits which change of air and exercise would afford, they gave themselves up to continual intoxication and riot, in the liquor shops infesting the whole length of the bay, greatly to the annoyance of every ship touching at this port. I have been obliged to hire natives to assist in wooding and watering, from the greatest part of my crew deserting the ship; and although from the first I gave peremptory orders to the white men on the beach, not to allow my people to run up liquor bills, they have held out every encouragement, and the consequence has been, that the conduct of my people has amounted almost to mutiny. On board the *Warrior*, Captain Bliss, one man was murdered in drunkenness, another drowned, and another died, as is said, a natural death; seven hands remained behind, although the ship was full and home-bound, because the captain would not pay their bills. Should not this be the subject of a very heavy complaint at home? Notwithstanding my injunctions to the shopmen, on my getting ready for sea, the white people presented their bills for payment, which I instantly refused, when they endeavoured all in their power to persuade my people to refuse heaving the anchor, or to desert the ship, hoping, by such means, to obtain payment. The missionaries and the most respectable of the inhabitants, seeing the difficulties in which these *pests of society* wished to involve me, interposed with the native chief, by whose means I got out of the harbour unmolested. In the evening I

sent my second officer on shore with the linguister, and immediately the boat landed, William Nott, William Hamilton, and George Brewer, liquor-dealers, appeared, to seize the boat for payment, William Nott being the first to lay his hands on the boat. While my second officer was busied with these men, James Burgess, John Graves, and Oliver Smith jumped into the boat, and asked who was game enough for Babbaite. My second officer and boat's crew returned on board in a canoe. The next morning, early, as I was preparing to go on shore, I observed the boat coming off, manned by a chief and two natives; Mr. Pritchard, the missionary, having interceded with the Queen for restoring the boat. I am very, very sorry, indeed, I am obliged, for the prevention of the same sort of conduct of my people in future, to make an example of the worst, by leaving them behind; since, up to our arrival at Otaheite, no crew could have been more interested in a voyage, or better behaved. James Burgess, George Watson, John Martin Louis, John Graves, Joseph Harris, William Prior, and John Hill are left behind. I am now bound towards Christmas Island with a complete and good crew; and if no whales are seen there, I shall proceed to the ground I left, considering I shall be better there than Japan. Hoping, Gentlemen, we may meet with that success which has hitherto attended our united exertions, I beg to remain, Gentlemen,

"Your most obedient and humble Servant,

"WILLIAM GRANT."

"There, Mr. Earnest, what think you of that?—and here is the other."

"Ship London, Wahao, Sandwich Islands, 13 Nov. 1834.

"Gentlemen,

"I have now the pleasure to inform you of my safe arrival at this place in the Hudson's Bay brig, the Eagle, on the 7th of August last, and got round Cape Horn without any material loss or damage.

"I have not heard any account of any of your vessels until the arrival here, on the —— inst., of the *Lady Amherst*, Captain William Barnett, who had taken 1000 barrels of oil; and would have been still more successful, but for the mutinous and insubordinate conduct of part of her crew, which obliged him to dispense with one boat, by which he lost much oil.

"I have, at the request of the captain, used my influence with the King to have the ringleaders taken out of the ship, and put to hard labour until the arrival of a man-of-war. The captain declares he considers his life endangered by having such desperadoes again sent on board, and will get others as substitutes at this place. The ship appears to want only a little caulking and painting, to proceed again on her voyage, but as some cases of scurvy have shewn themselves amongst the crew, it will be necessary to remain here a fortnight or three weeks, to recruit the crew, and get rid of the scurvy. I shall take care no unnecessary delay or expence is incurred whilst at this place.

"The *Conway* was spoken with on the 28th of July, 1834, by an American whaler, *Mentor*, Capt. J. P. Rise, and found the crew in a complete state of mutiny. He was advised to go to Sidney, and bring the mutineers to justice; which he seemed inclined to do, if the crew would permit him, although at the probable sacrifice of one whole season.

"I have no account of the *Conway* since. It is much to be lamented there is no tribunal here, before whom such offences can be tried, and have the offenders punished. The consul declares he has no such power; and, in fact, without frustrating the whole plan of the voyage, and hope of a successful issue by going to Sydney to obtain redress, there is no authority to appeal to. If the Government at home knew the importance of this, the only port for whalers

engaged in the whale fisheries in the Japan seas, and the distress of many of the vessels from the mutinous state of their crews, who, knowing there is no jurisdiction to which they are amenable, presume on it to treat the commander and his officers in the most contemptuous manner, and in several cases with open personal violence.

"An immediate check would be put, by the Government appointing a resident here, expressly to inquire into, and punish such desperadoes, and by sending a man-of-war to remain here while the ships usually remain in port, namely, November, December, and January. Unless some such means are adopted, the important trade for sperm oil will continue crippled and embarrassed, and pass, as it has already done, in a great measure, into the hands of the Americans, whose officers here are invested with a greater power to punish offences than ours are.

"Some speedy arrangements to suppress this dreadful spirit of mutiny, menace, and, in several instances, violence to the masters and officers, ought to be adopted, and must be, or your trade will be ruined; and I much fear several vessels will be taken possession of, and run away with, by their mutinous crews. Ten mutineers were taken out of the Corsair, Venables, who had taken complete possession of the ship; and as the vessel was not considered in safety with them on board, she was obliged to proceed thus crippled without them; and the mutineers will escape with a few days' confinement only, there being no tribunal competent to try them for their crimes at this port. I have no doubt you will hear from all engaged in the fisheries in these seas, loud complaints of the fierce and mutinous spirit exhibited by the seamen in the different ships. It is truly painful to witness it without any means of redress.

"I remain, Gentlemen,

"Your faithful and obedient Servant,

"GEORGE KELLY."

I confess that long before the Lieutenant had concluded reading the last letter, there appeared to be matter in it well worthy the attention of the legislature; and I promised my friend, the Lieutenant, to do all I could towards obtaining a remedy for such glaring evils.

"Well, Mr. Ernest, to proceed," continued the Lieutenant, "I fully approve of the clauses from the 11th to the 24th, they are what have been long wanted; for, without registration we can never know what the maritime strength of the country consists of. But the certificate, sir, given to the seaman, ought to have been a general and national one, such a one as would have been a passport for employment to a good man, and oblige a bad one to mend his manners, or seek some other trade. Such a mode, in a little time, sir, would shut out all impostors and vagabonds from the honourable occupation of a seaman. Don't you agree with me in that, Mr. Ernest?" I assented, and he proceeded. "Well, sir, the 25th clause I quite approve of, but I think that the president and the governors of the Corporation for the relief and support of weak and disabled seamen in the merchant service, might publish an account of the immense sums which they receive in the shape of one shilling per month from about 150,000 sea-faring people. Ah, Mr. Ernest, what think you of that?" Certainly, Mr. Staysail,

all accounts of public money, either of sailors, or the parish, should be as open as noon day.—Concealment creates suspicion and ————." "Besides," said Lieutenant Staysail, interrupting me hastily, "Don't you imagine, sir, but that sailors have their wits about them like other people. I once overheard my crew venture some honest opnions on this subject. One of them, sir, said he wondered what the King did with all the money that was paid to him." "Why, it goes to build churches," said another directly. "Churches," repeated a third, "No, it don't,—it goes to pay off the national debt, to be sure;" "National debt," said the first, "What do you call that?" "Why, what the nation owes to the natives, I suppose," returned the other. "However, sir, they were all in the dark on the subject, but evidently wished to be enlightened as to the expenditure of their money; they all agreed that it went somewhere, but none of them knew where." "Well, then, Mr. Staysail, I suppose Mr. Hume must go to work. What has he been about all this time, that he has not found out that a public body is receiving sixty or seventy thousand pounds per annum, without publishing an account of their expenditure." "The sooner he goes to work, sir, the better," rejoined the Lieutenant.

Having despatched the 25th clause, we proceeded with those on apprentices. "Ay, this is as it should be, Mr. Ernest, about these apprentices," continued the Lieutenant. "I only hope, sir, that strong, healthy, and enterprising boys, of good moral character, might be found; without relieving the parishes of all their incorrigible young vermin. The sea service, sir, although good for keeping boys out of harm's way, is not the employment to convert or improve bad ones; and it was a great oversight in Sir James, not to have inserted in their indentures an obligation to serve the king for a specified time, when called upon after serving out their apprenticeship. There is nothing else that I dislike, sir, in the whole bill. The clause allowing seamen to enter when abroad for ships of war, although it might prove injurious to the ship-owners, and cause great trouble to their commanders, for a time, will make them more careful how they treat their men: in fact, Sir James Graham's bill will do much good, and it is to be hoped that in his seat in parliament he will still be the seaman's friend, and follow up the work he has so nobly begun.

Coffee being ready, we adjourned our debate, but my mind being so much worked up, I began to fancy to myself that I could rise to some degree of eminence by becoming an agitator in favour of our seamen, and might be instrumental in restoring them to that palmy state from which they have been gradually descending these last forty years. We both agreed that the pamphlet of proposed regulations was the production of some thorough-going old sailor, who would not have been disgraced by putting his name to

it; and, although written in a jocose and careless strain, contained a good deal of sound doctrine and matters of fact. And yet, sir, said Lieutenant Staysail, there it is, like a ship at sea without her rudder, it has neither patronage nor advertisement, and its limitation will not reach far enough to do any good. On this I satisfied the worthy Lieutenant, and promised to send copies at my own expense to all those members and public bodies connected with the shipping interest. He approved of my zeal, and expressed surprise that I who had never been in any way concerned with sailors or ships, should, from the casual circumstance of riding from Portsmouth to London with a party of seamen, have become in a short time such a strenuous advocate in their favour, whilst hundreds, perhaps thousands, who had and were still amassing immense wealth by their exertions, and others who had attained the highest honour of the state by their devoted courage, were, or appeared to be, indifferent about them. I replied, that all I had seen and heard respecting them only awakened my curiosity, and I was determined to satisfy myself, even if it should cost me a voyage to India and back." "Well, then, Mr. Ernest, if you are really disposed to go into their affairs so thoroughly, suppose you begin at home first." "I have an intimate friend," said Lieutenant Staysail, "who has been an officer of some standing in the army, but is now employed as director of police in one of the eastern divisions of the metropolis; and, as it is yet early, if you like, we will take a stroll, under his protection, through the haunts of vice and infamy, where nine-tenths of the poor fellows we have been speaking of are doomed to be robbed of their wealth, and to lose their health.

We were not long in finding the director, who, having equipped us in proper disguise, and, followed by two or three body-guards at a distance, without which my nerves would never have carried me through the scenes I beheld; we commenced our review a little way from the Mint. We entered every house of resort on each side of Ratcliff Highway, branching off to the right and to the left, into every alley and lane: but what pen could possibly describe the scene of riot and low debauchery that we beheld, the account would be too disgusting to relate: suffice it to say, that amongst the hundreds of sailors that we saw, most of them lately returned from sea, and all with money, scarcely one of them was really sober; many of them were beastly drunk, and of course incapable of taking care of themselves; they were all surrounded with swarms of beings who had more the appearance of fiends than anything human,—cajoling them of their money, feasting upon them, and administering to their depraved appetites. I hastened from the scene, shuddering with horror and disgust; pitying, from my soul, these devoted victims, and teeming with a thousand schemes for their bodily salvation. My friend, Lieu-

tenant Staysail, perceived my agitation, and begged me to compose myself, by saying, "If all this Gomorrah which we have seen to-night was to be swallowed up by an earthquake, or destroyed by fire, before the morning; there are so many wretches that exist, and even make fortunes, by these poor deluded creatures, that a worse would spring up in some other place like enchantment."

We were now not far from the 'Seaman's Provident Home,' a handsome building standing on the site of the old Brunswick Theatre, in Well-street. It had been erected at a great expence by the exertions of a benevolent and well-intentioned man, a captain in the Navy. We knocked at the door, and entered a spacious hall, as large as the dining-room of the City of London Tavern. Here we found about a dozen well-dressed seamen—sitting round a cheerful fire. They all rose instinctively, and touched their hats, as we entered; but it being near their hour of rest, we returned, after learning that the house was large enough to receive two hundred, but had not more than eighteen inmates. This surprised me, as the terms of board and lodging were reasonable, being only twelve shillings per week. My friend, the director, told me, by what he could learn, that it appeared the men were averse to going there, imagining they would be obliged to become more serious; that the confinement was too much after a long voyage of privations and hardships; in fact, that the thing was so new, and different to what they had been used to, that it would take some time to reconcile them to it, but he thought that when the men found out its value they would like it better. The whole establishment was certainly much to be admired, and well deserving of patronage. Considering that I had done a good day's work, I took a cordial leave of my two friends, after inviting them to dine with me on a future and not distant day; and jumping into a cab, was soon at my own quarters; still determined to follow up my inquiries, and use all my interest to procure a seat in parliament, and devote myself to the welfare of my neglected amphibious countrymen.

On my return, I sat meditating over the fire, fancying a thousand different schemes which were suggested by a wandering imagination, and, as I contemplated the gradually dying embers before me, alone and undisturbed, I imagined that I saw a high wall, including the whole of the space of the London Docks, and extending from the river on one side, to the Commercial Road on the other, embracing East Smithfield, Upper and Lower Shadwell. I thought a warning voice from the interior was calling out—"Beware, beware; escape; for the time is come that ye shall no longer exist in your vice and profligacy." On this, I thought that many thousands made their escape through doors left open for that purpose; but many, unmindful of the awful warning, con-

tinued in their course of wretched and beastly depravity. I thought that the interior of the whole space was laid open to view, and, oh, what an appalling scene was displayed! Some were dancing, others drinking, others again fighting, while some were cajoling and caressing, but all robbing and imposing; and sailors were the victims. At this moment, I thought a tremendous clap of thunder was heard, accompanied with lightning, and in an instant all the doors were closed, and the flames burst out in all quarters of the devoted space. The horrifying screams, the oaths and execrations, the promises of amendment, the penitence, (now of no avail,) that followed, were appalling, and all soon became one heap of smoking ruins. I started from my reverie, as if awaking from a horrid dream, and it was some time before I could compose my thoughts; when, lo, to my astonished imagination, in the very place so lately destroyed, I fancied there appeared a handsome town, laid out in regular squares, with spacious streets crossing each other at right angles, and in the centre was a neat pile of buildings, forming an oblong square, consisting of about forty houses, not unlike the Trinity alms-houses of Deptford. On each of the sides were pleasant walks, ornamented with trees and shrubs, on grass plots, with a superb fountain playing between them; the whole surrounded by a wall. The entrance was beneath a handsome arched portico, where a porter was constantly in attendance; and over it appeared, in large characters, "These buildings have been erected by the benevolent friends of the honest and well-conducted seamen of Great Britain, to enable them to enjoy the reward of their toils in peace, security, and comfort, at a moderate expense, under the care and superintendence of respectable men of their own profession." I thought that hundreds were flocking towards the gate, to get admission, which depended entirely upon their certificates of conduct. I thought that there was attached to this magnificent establishment, a place of worship, an hospital, and savings bank; also, a shipping-office, for receiving seamen's wages. And I was so delighted with the prospect, that I arose perfectly refreshed and happy.

On the following morning I took an early breakfast, and found no falling off in the resolution I had formed of standing forward as the champion of my thoughtless, improvident, and much neglected seafaring countrymen; and with this determination I sallied forth to the lodgings of Steadfast and Steerwell. The latter was in unusual good spirits, having seen in the newspaper a notice of the arrival in the Downs of a homeward bound India trader, on board of which a younger brother of his had shipped some seventeen or eighteen months before. He talked of going to Gravesend to meet his brother, to keep him out of the hands of the land-sharks, or Philistines, as he called them; and, thinking this no bad opportunity of getting a further insight into sailors'

affairs, I offered to accompany him; a proposal which gave him much pleasure.

We were soon embarked, and flying down the river in the Mercury steam-boat, found ourselves at Gravesend about 11 A.M. The ship was just coming to anchor, when we took a boat, and went alongside, and, making known our business to the officer at the gangway, were allowed to go on board. The crew being aloft, unbending sails and striking topgallant-masts, were occupied till past noon, when they were ordered to dinner. The meeting between Steerwell and his brother was exactly what might have been expected from two manly warm-hearted fellows, that had not met for several years. They pressed me to accompany them below to the forecastle, which I did, being determined to see as much as I could. My expectations of finding comfort were certainly not very great; but, alas, what a dismal miserable den was that which we had entered—a place, too, for men to occupy for months together.

The vessel we were on board of was a fine ship of nearly six hundred tons, carrying about twenty-two hands before the mast; and the place these hands had to eat their food and sleep in, was about as many feet long. At the broadest or after end of it was a row of large casks for water, over which, and the remainder of the space, were hung the hammocks, which appeared to me like so many soot-bags; under these were four or five chests, all they could muster, as few of the men had more clothes than a shift for bad weather; and the whole place appeared as if it were never cleaned, and the stench in consequence was so abominable, that nothing but my extreme curiosity could have induced me to stop a moment in it.

We had scarcely entered this abode of filth, when "scaldings," and "stand from under," was roared out by a stentorian voice, and the dinner was handed down the hatchway. But, to describe the luxurious fare that was smoking before us, would require the power of a gastronomist. What a treat, thought I, for some of those gentlemen of the small weight of twenty stone, who cannot touch any thing except what happens to be in season, and that cooked by the most approved artist in the culinary trade; how soon it would reduce their dimensions, and weight, and doctor's bills, to take a trip to Calcutta and back, in the forecastle of a free trader, and to live all the time on that kind of material before us, which to my mind was erroneously called beef and rice. The first was as hard as the wood that bears the name, and not dissimilar in colour to mahogany, unpolished—not a particle of fat was upon it, and the smell to me was putrid; then, the rice which had been boiled with the beef, greasy and dirty, and required at least ten minutes' skimming, to extract the maggots and weevils that were floating on the surface of the liquid in

which it was placed. Knives and spoons my companions had of their own, but neither plates nor bowls, poor fellows; however, they appeared blessed with keen appetites, and set to work in earnest on what was before them. But, with all my good nature, and desire to taste their fare, I could not touch it. They had nearly finished their meal: a voice from the deck called out, "Grog, oh!" and a case bottle, containing the usual allowance of a gill of rum for each man, was handed down by the black steward. On this occasion, as may be supposed, between him and the tars some dry jokes passed, which proved him to be rather a favourite. One of the oldest sailors now took charge of the bottle, whilst another brought some water. Water—sweet and good it had been; but, ye sons of temperance, were ye obliged to quench your thirst with such, you would not be surprised at the sailor's delight in his favourite beverage. I tasted both, singly and together; the water was stagnant and filthy, the spirits like poison, and the mixture scarcely drinkable. One of my companions, seeing that I had been uneasy for some time, invited me to go on deck; and glad enough I was to escape from such a black hole as that in which I had passed the last half hour.

The captain having gone to London, I was accosted by the chief officer, a pleasant kind of man, who I informed of the object of my visit; when with that generosity so natural to sailors, he invited me into the cuddy to take a glass of wine. Speaking of the occurrences of the voyage generally, they had managed pretty well, he said, and nothing of particular interest had happened, except the trouble they had been put to by the rascals forward. I expressed some surprise at this, and remarked, that, from their appearance, I should have taken them for a good set of seamen. "Seamen," exclaimed he, "oh, as for seamanship, they are well enough; but they are a grumbling dissatisfied set of scoundrels." This information startled me; and, on asking my new friend what sort of a hand Steerwell's brother was—"Oh, he was a very good lad, until the rest spoiled him, and now he is as bad as the worst of 'em," was the reply of the officer, as he left me, apologising for going on deck.

By this time there were two steamers, one on each side, to tow the vessel to St. Katherine's dock, and the anchor was soon up, and the ship moving at a good rate. I had intended taking my passage up the river, so remained quietly looking on at the proceedings. My attention was shortly afterwards attracted by the appearance of two well-dressed and rather fashionable young men, whom, as they did not approach the quarter-deck, I supposed were friends of some of the crew: however, on inquiry of the chief officer, I found that they were ship's agents (alias Jew crimps and slopsellers) and that they had succeeded in the short time that I had been in the cuddy, in prevailing on the greater part

of the crew to assign their wages to them; at the same time giving them some trifling advance, and an order for clothes, and other necessaries, on their house in the Highway or Minories, promising to see all their claims rightly paid, and all their grievances redressed. Here then was the iniquity, the discovery of which was well worth all the trouble I had taken. No sooner had the seamen returned to port, having endured all the hardships of an eighteen months' voyage, living on provision of the most disgusting kind, to enrich their employers, than they were left to the mercy of designing people, to be plundered in open day-light, and on board their own ships! Here was a lesson for humanity. Surely, thought I, if not to the interest, it would be to the honour, of British merchants and ship-owners, to exert themselves for the protection of those who have worked hard, and wasted their health and youth, and often their lives, in their service.

As we were passing Blackwall, a cry of horror and dismay assailed our ears, from a sudden crash in the port, towards which every one flew to give assistance to a youth lying there. He had been sent to the mizentop-masthead, to clear one of the flags, and, trusting to a rotten rope, fell from aloft, and was lying apparently dead, and bleeding from the mouth, nose, and ears; poor fellow, his collar-bone and both thighs were broken. The vessel was immediately stopped; the body placed on a grating, and lowered into a pilot's boat, and, when off Greenwich, was sent to the Dreadnought Seaman's Hospital Ship. The ship remained hove-to, and, in an incredibly short interval, the boat returned, saying that the youth was instantly received, and every attention that surgical skill could effect, bestowed upon him. "It is a noble and magnificent institution, and well worthy of imitation in every sea-port town in the kingdom," said the mate.

The seamen now began to prepare for quitting the ship, and, as we approached the dock, I could perceive a spirit of independence almost amounting to insolence towards their officers, who on their part appeared to lose their authority over them; and although the moment was near when these fellows, who had shared the toils and perils of a long voyage in the same fragile vessel, were about to part, perhaps never to meet again, I could discover nothing of that warmth of feeling or friendship between them, which one would imagine that such an acquaintance would inspire: the ship was no sooner in her berth, and secured, than she was filled with busy people, who were absolutely scrambling who should drag the men away to their "respectable boarding houses," as they were pleased to call them. Some took them by the arm, others seized their bags, chests, or hammocks, and a scene followed something like that presented by Margate Pier formerly on the arrival of a well-freighted hoy from London. If the dock companies had placed at each principal gate a commodious and

well-regulated boarding-house, under the care of some honest old ship-master or mate, and kept them out of the way of all the bloodsuckers that now infest the ships on their arrival; it would in a great measure have prevented, or at al levents have lessened, the evils to which these poor fellows are exposed.

On the Defective State of Discipline in British Merchant Ships.

To the Editor of the Nautical Magazine.

Sir,—Some observations having been made in your December Number, by a Correspondent signing himself, "The Sailor's Friend," on my Letter inserted in the October number, upon the above subject; I am induced to notice the same, (though containing neither statement, nor argument, that refutes any thing contained in the Letter it professes to comment upon,) partly to assure your correspondent that I do every justice to the good feelings which are evident in the observations he has made; and, at the same time, to shew him that he is wrong in stating that I have come to conclusions "in exceeding haste;" and that, moreover, such conclusions "are unfounded;" and that my letter was written "under the influence of prejudice."

The letter in question was written at different periods of many months at sea, under the most cool and deliberate consideration; and every part of it, I am fully prepared to justify. That any conclusions therein are "unfounded," it would have been more correct if "the Sailor's Friend" had rather proved than asserted; as it would also have been, to have shewn where signs of "prejudice" existed, rather than to have been content with simply so stating. The extracts he makes from my Letter, describing the life of a sailor, one would have expected had been given for the purpose of shewing that it is "an unfounded statement;" but in no part of the letter of "the Sailor's Friend" do I find such an attempt made,—indeed, dreadful picture as it is—it is not to be controverted; and that your correspondent well knows, if he is a sailor in the merchant service. As for the sentiments contained in the extract in question "being adopted generally," and thereby "having the effect of paralyzing every effort for the amelioration of their (the sailors') condition;" I cannot but here see "a very erroneous conclusion" on the part of "the Sailor's Friend." If true, the picture I have drawn—the worse it shews a sailor to be, the more desirable that it should be universally known; and if generally known and acknowledged, I think "the Sailor's Friend" is paying a poor compliment to the philanthropy of the British public, in concluding that such knowledge of seamen's debased habits would have the effect of causing the public

"to abandon them with heartless indifference." I should come to a directly contrary conclusion,—all half measures must be scouted—it is owing to this question being disguised, through want of energy in those who have from time to time taken it in hand, that we see such an imbecile act as was passed last session, professing to be for the regulation of seamen.

Be it forbidden that I should entertain any such feelings towards these men, as your correspondent's letter would seem he suspects in me. In advocating the necessity of laws to control them, it does not appear to have occurred to your correspondent, that I had in view the government of seamen *as they are*,—not *as they should be*. To reform them is the duty of every one to attempt; but I consider I am doing more service to my seafaring brethren, as well as to the public, in endeavouring to effect some *present practical good*,—which may have the effect of keeping in order these unruly beings, leaving their amendment to time, and the good offices of every "sailor's friend;" considering also that the laws which may be necessary for obtaining present order, will rather aid than retard this desirable event, when seamen are to be made reasonable, educated, and religious beings,—and that, moreover, when this happy period does arrive, such laws will not be found oppressive, but, on the contrary, to be mild and efficacious,—securing to *them* advantages they have not at present, (I particularly allude to regulations in respect to their provisions,) and that, in fact, nothing can more clearly tend to the amendment of a seaman, *than controlling his power of doing evil!* To bring this home to every one's conviction,—let it but be admitted, that the control which a father exercises over his family produces that order which is his very best aid in his endeavours to bring up and educate such family effectively.

The subject which I have taken up, I intend to keep alive till some good is effected,—should I live so long; and I shall, therefore, Mr. Editor, avail myself of this occasion, to make a few more remarks upon it.

And, first, I would have it clearly understood, that the censure I have so unreservedly cast upon seamen, is intended (evidently) to apply to those in the *foreign and colonial trade*.—I will most readily admit that there is a degree of education, and good habits, to be found amongst the seafaring men existing all round the coasts of Britain: which is to be by no means under-rated,—of this class consist the fishermen, pilots, and boatmen, and such as are brought up in the small craft belonging to a sea-port, (London generally being an exception,) in the coasting trade, and in some degree in the *short* foreign voyages, where the vessels return to the port to which the people belong; where the opportunity consequently exists, of

being a considerable portion of their time under the family roof; where the example of parents and kindred affords constant opportunity *for the useful application* of the acquirements of reading and writing; and in the long winter evenings, when the ship of the apprentice is probably laid up, the exercise of human sympathies, religious observances, and domestic affections are continually called forth. Here the youth imbibe a natural desire for improvement, that they may advance themselves in the world, to become the heads of comfortable homes and families themselves, — it is here that are fostered and brought up the men who guide the coasting trade of the country; whence spring the mates and masters of the colliers, and small vessels in the short voyages, as well as, partially, officers to all classes of vessels. Amongst the people so brought up, there is, perhaps, to be found as great a proportion of religious, good men, in every respect, as in any other class of human beings.

Some may, notwithstanding, think that I am too unreservedly lauding the condition of this class of sailors; as much so as, when referring to the other portion, I may be too free with my censure; let it be admitted that there are exceptions in both. Having included boatmen amongst those who I have said may be considered as men of good moral and religious habits, it will probably occur to some to object to my description, when applied to men who, in some parts of our coast, find their chief employment in smuggling, and taking advantage of ships in distress; it perhaps, however, requires no more sophistry to reconcile these useful people to their mode of life, than what is required with many who follow pursuits, or professions, to which society is in the habit of attaching the term "respectable," and even "honourable." A Deal boatman may with some justice consider his occupation as a very praiseworthy one, when he ventures his life to save a ship and crew, however well paid he may ultimately be for his exertions; and as for smuggling, the less his superiors say about that, the better; it is *their encouragement* that induces him to run the hazards he does; and he has only at a watering-place to see how ladies of all ranks are ready to allow themselves to be imposed upon in the purchase of articles, *merely because they are smuggled*, to find a very ready excuse for his breach of the revenue laws.

The distinction, however, which I draw between the two classes of seamen rests upon nineteen out of twenty of the soberly inclined set (after a certain age) being married men, and nineteen out of twenty of the seamen going foreign voyages being single. A man who is a good husband and a good father, *is not likely to be a bad man*; he has, at all events, motives to be otherwise.

A seaman in the foreign service ships himself off for a one or two years' voyage, or for an indefinite period; he returns, spends his earnings in the manner I have formerly described; in a month or six weeks he is off again; the very few days which, at most, he can spend on shore during the voyage, are passed in company, if possible, worse than in England. Now, just suppose, Mr. Editor, that all the women and children were to be withdrawn from us on shore; fancy for a moment what would be the effect upon the men; is it not perfectly certain that, in a very few years, we should all, without exception, approach the state of the most uncivilized? should we not become mere brutes? Tell me how much better is the life of a seaman in the foreign trade? they have no opportunity of becoming the humanized beings which the society of the other sex alone makes us; the little they ever see of them is during the month or six weeks I suppose them to be in England, after a voyage of a year, or perhaps two, or more. This period is passed in a state of brutality and intoxication, which, to the generality of the public, is utterly inconceivable! The small portion of married men amongst these people might, for all improvements such a state is calculated to effect upon them, as well be without wife or home; their stay is so short amongst their family, in proportion to their absence, that it is ten to one but even this short period is passed in any thing but a state of harmony. What, I ask again, can, by possibility, the sailor's life produce other than the being I have described?

Reform them, by all means, if possible; but I must confess that I despair of any one pointing out the way; but the very best *path* to such way, if it does exist, most assuredly is, to *control* them. This class of seamen is made up, first, of all those brought up in it, of course the worst portion, especially that proportion which consists of Londoners; of all the run-away apprentices, and scamps from every part of Britain; and of a portion of the young men brought up in the more well-disposed class, who, from love of adventure, more exciting scenes, and less work, transfer themselves into the foreign trade; and it is melancholy to be obliged to observe, that the desperate bad example here met with, amalgamates the very great proportion of these young men with the gang they join; few escape the contamination of the forecastle of a ship in the foreign trade; those who do, may be brought to the recollection of my brother skippers. When you see a seaman-like man, knowing his duty, and going quietly about it, saying little, and appearing discontented; a man, however, with whom no fault is to be found; if you find this man, so soon as the ship is moored in a foreign or colonial port, ask for his discharge, and, when questioned, admit he has no fault to find with either master, officers, or ship, but still resolutely presses for his discharge; *this*

man is one from the right class, who has literally fallen amongst thieves, and who, in seeking his discharge, is hoping for a change for the better. If this man is unmarried, and cannot free himself from his engagements, he will take the first opportunity of entering on board a king's ship, (and a wise step this is for him;) if he is a married man, he will endeavour to get into an homeward bound ship, and most probably rejoin this quiet, though harder-working service, appertaining to the port to which he belongs.

With the few exceptions to be found occasionally like this man, the crew of a ship in the foreign trade is, I will maintain, made up of such men as I have described them to be; men without home, or sympathy with human kind, who, on arrival in port, transfer themselves to the lodging-house of a crimp, whose rendezvous is the grog-shop; and when their wages are gone, and they are just so much in debt that *they can be sold* by the crimp for the amount, are shipped off on any long voyage, no matter where or in what ship; it is notorious that it is no uncommon thing for them to know nothing about the voyage they are upon, perhaps for some days; and this is repeated during the natural life of such men.

When at sea, this period is passed in a state of sullen discontent, if not in open daily hostility, with their superiors, bordering on it; they arrive in a foreign port, having received one or two months' advance before sailing; if they have a tolerable run out, and have perhaps got well supplied with slops on the passage, they have little or no wages due to them, perhaps even in debt; in which cases they desert, often all hands *are piped ashore*; here, the life that is led for the short time that credit can be obtained is, if possible, worse than that described in England, and, in due time, *they are sold again*, to such as want hands to start on the return voyage. If, however, it is not convenient to leave the ship, the first object is to get grog on board, or liberty to go on shore, professedly for the purpose of excessive intoxication; and this is repeated as often as they can persuade the commander out of money; they return on board to abuse the officers, most probably to assault them; their commander has most likely the good sense to get out of the way on these occasions, or he also *runs the risk of losing his life*. Then succeed quarrels amongst themselves, fights, &c.; frequently violence is carried to most alarming lengths, robbery of spirits is committed, all sorts of licentiousness exists, and very often the ship endangered. This completes the picture of these fine fellows, one half the crew being usually half the week laid up from these scenes, generally to be witnessed on *Sunday* evenings! Where is the law to punish all this, or, what would be better, to prevent it? and where is the man, who has any of the feelings of a gentleman, who is not disgusted with a pursuit, where such lawless scenes are

common? and who must not dread the bringing up a son to be subject to the certain assaults of drunken brutes, at least once every week (and that a Sunday) during the time a ship lies in a foreign port? Well may the managers of the establishment called "The Sailor's Home" observe, "*and it is in London principally that seamen are most likely to acquire those practices of intemperance and vice, that mark their conduct in harbour, wherever it may be, and which tend to degrade the English character in the eyes of almost every nation in the world.*"

In passing, I will merely observe upon this establishment, that it is a very praiseworthy attempt to do seamen good; and it will be a good criterion to judge of the descriptions which people, taking different views, give of them. We shall see how many from the *foreign trade* will avail themselves of a home *where sober habits must prevail;* certainly they will be the very best description of sailors that will be found there, and it will be the place where every master will naturally resort when he wants a crew.

It is really surprising that men who have the influence to get enacted the necessary laws to govern the merchant service, cannot be found amongst our legislators; men who are capable of taking a comprehensive view of the subject! I am led to utter this expression of surprise from the passing of a bill last session, professedly for the regulation of seamen, 5 and 6 W. IV. cap. 19. *It is altogether a dead letter,* as respects its principal object. Some few clauses are introduced, tending to trifling good; but as an act of *regulation,* it is really the most abortive piece of legislation that can be conceived; and this I will shew:—

Its great end *seems* to have been *to prevent the discharge of seamen abroad,* to enforce the keeping the same crew for the whole voyage; in this it attempts what is clearly impossible—*the keeping together those whose mutual interest it is to part.* I have shewn above what has hitherto been the practice in this respect; and I will now shew that the act in question will in no degree alter it. A ship arrives at her outward-bound port; what prevents those who have little due to them, or who like to sacrifice what may be due, from leaving the ship as heretofore? Nothing in the new act; the master is not to discharge a man; but suppose he and the man willing to part, all he has to do is to give him his money, within a trifle of what is due, and then *not offer to prevent the man's going*; this is no discharge; the ship lies perhaps two or three months in port, labour is hired to load her; when ready to go to sea, the master makes out a list of deserters, proceeds to a magistrate, or consul, for the necessary indorsement in the articles, "that such men have deserted, and cannot be recovered," (they will be gone long before in other ships,) and the act is complied with. New men are engaged, and thus the practice is exactly what it used to be. I am in this case supposing what is pretty nearly

always the case, that the master is indifferent about retaining the men; or, what is more usual still, that he is glad of their leaving the ship to peace and good order whilst in harbour. If it were otherwise, the master will in vain look in the new act for any increased facilities in promoting desertion; indeed, though professing to be a bill to *regulate* seamen, it does not contain a clause in it that tends practically to this end, beyond the means that existed before its enactment. It is astonishing that the House of Commons should not have contained *one man* that had sufficient knowledge of the question, and who would at the same time have used it to prevent the passing of this act.

I am equally well pleased with your correspondent, "The Sailor's Friend," that Mr. Buckingham's attention has been drawn to my Letter; the subject cannot, I should think, be in better hands; and in conclusion, I also fully agree with him in the necessity of "a reform in the government established on board a ship," (meaning on the part of the masters and officers;) our advance towards which, and an indispensable preliminary, will be, "the restraining the seamen by effective laws:" for it is clearly impossible to expect commanders and officers able at all times to control their own tempers, so as to uphold a proper conduct themselves, when subjected, as they daily are, to the insufferable insults of the people; and without the constant example of a mild and dignified behaviour on the part of superiors, no government can be upheld on board ship, nor any where else. Laws to control seamen would go far *to secure them* proper treatment, by inducing a large augmentation of respectable men to superintend the execution of such laws; then, and not before, may we expect to see "a reform in the government of a ship."

A Master of a British Merchant Ship.

On the Form of the Ships constructed by the present Surveyor of the Navy.

To the Editor of the Nautical Magazine.

Sir,—Following up the intention expressed in my letter of last month's date; I propose in this to submit for the consideration of your readers, (but more especially for that of the surveyor of the navy) some ideas I have long entertained, on the subject of the construction of our ships of war. I am well aware of the difficulties of this subject, and the risk I run of a severe handling for my temerity, in touching upon a topic that has unceasingly occupied the attention of the scientific men of the present, and all past ages: a subject that would almost seem to have been so discussed, as to have exhausted the ingenuity of all the professional men in Europe, in their attempts to reduce it to a science; and it is

exactly because I think (and believe I can shew) that the construction of a ship *is not a science*, properly speaking, and, moreover, *impossible of ever being reduced to one*, that I am inclined to take up the subject, and consider it upon entirely new grounds. I say that ship-building is not a science; there is hardly any line or dimension, a constructor displays in the draft of a ship, for which he can give, strictly speaking, a proper *mathematical demonstration*. He cannot reduce the figure to *a theory*. This is, I say, the real state of *the art* of ship-building, and which *as a science* is at this present day much what it was when Noah built the ark. As for lines for dividing the water, and the proper form of a ship's run, of all other considerations apparently not only the most important, but at the same time what would appear to be the easiest reduced to a theory; yet I venture to say, that no one is prepared, even in this apparently simple point, to lay down any such lines, and support them as being the best upon any *scientific data*.

Supported they may be as matter of opinion, and perhaps with plausibility and a show of science; but what I maintain is, that they are incapable of being reduced *to strict mathematical demonstration*. Further than this, I question if any one is prepared to shew *what a water-line is* on a ship's bottom. Is the course known of every particle of water which strikes a ship's body, when in the most favourable situation that she can be placed in for such investigation—at anchor, for instance, in a strong tideway? Will any one undertake to say, what is the course of the water, even under these circumstances? Will it be explained, whether should the tide run one knot or nine; the same course is pursued by the fluid? I will venture to say that even on these points no one is prepared to elucidate, and to shew *the exact passage of the water past the ship at anchor;* and if this cannot be accomplished, how will any one attempt hardly to comprehend, much less to explain, how this operates upon a ship at sea, which presents such infinite variations and combinations, by which all preconceived lines are changed perpetually by the incalculable variety of motion? That motion being combined of a direct progress, and sometimes added to it a lateral one, then the action of sails and the sea on a ship, these also partaking of all imaginable directions; the motion of the ship herself, independent of horizontal motion in her inclination, and that varying every moment; her pitching, 'scending, &c. the effect such motions, &c. have of altering all those cleverly constructed water lines, which have been formed with a view of progression of the ship in *one direction only*; and which look so pretty upon paper; to say nothing of next to the utter ignorance we are in, as to what part of the sea itself is in motion, that is to say, *what part of a wave* proceeds in its apparent direction, and what part is *only lifted*

and does not proceed.* I say, that these considerations are quite sufficient to shew, that ship-building is *an art*, but can never assume a rank amongst the exact sciences. I mean, therefore, as I have already said, to take up a new ground, in handling the subject, and rely upon experience, and a very constant and vigilant observation; which has had ample opportunities of being kept alive by practice, for a considerable period. I have observed, that it is impracticable to reduce to the rules of science, the action of fluids upon a ship under all the peculiar and infinite circumstances in which they operate upon her passage through water at sea; yet, I consider that a tolerable notion of these effects, and in some degree even the "modus operandi," *may be conceived* by an attentive practical sailor, who has the habit of observation, and, above all, of thinking, and withal, a desire to trace effects up to causes.

I say, that I think, divesting the discussion on ship-building of all the mystery in which a constant attempt at arguing the same by rules of science has involved it, and looking at facts as they arise to a man in a long course of practice and observation; that perhaps the subject may be found capable of reduction within the scope of common sense and common comprehension; and that good may result from such method of treating the subject. I beg, however, it may be understood, that I am very far from undervaluing science—nay, I fully believe that unless a man is imbued thoroughly, not only with a belief of its importance, but also in tolerable possession of its acquirements, that all the experience and opportunities in the world will never enable him even to entertain one useful idea on the subject under consideration. I reverence learning in all its branches—consider theory truth—and despise the man who, professing to hold theory in contempt, prides himself upon being "a practical man:" that boast means, in plain English, that he has either something to hide in his practice, which won't bear the light of day, or that he *cannot* give a reason for what he does; it is exactly because I conceive that ship-building is incapable of becoming one of the exact sciences, that I want now to extract some useful truth out of observation and practice; and should what is attempted not bear the test when submitted to the

* We are about as little acquainted with the nature of currents and tides. How far, for instance, does the strength of the tide, as felt at the surface, extend downwards, and in what ratio does it diminish?—(does it, in fact, always diminish?)—and does this scale (if affected to be known) apply to tides and currents of all degrees of strength alike? It is quite evident that all this depends upon a variety of local and peculiar causes, that defy the adoption of any general rule—none, perhaps, that would strictly apply to any two places.

Mr. Stenhouse, of H. M. S. Caledonia, informs us (through your Magazine) that the current out of the Orontes, at three-quarters of a mile from its mouth, only extends *six inches* down. I have heard of surface-currents, but do not recollect reading of one so nicely measured before.

examination of strict mathematical rules, or, more properly, should it be found any way *contrary* to any good theory; why, then, I am content to be considered wrong in my notions, but not otherwise. I shall not consider my propositions as being of necessity capable of being reduced to rules, and for the reason I have given—that the subject is incapable of definition, strictly speaking: and I trust this will be sufficient apology to the learned.

The principal defect which I have long been *quite convinced* our ships of war (as well as all others) have laboured under, has been *want of beam*. I might, under the shelter of "my signature," indulge in the egotism of stating, that on this point I had so thoroughly made up my mind when abroad, some years back, that I had seriously determined to make some effort, on my arrival at home, of an elucidation of the subject; but, fortunately, I found the matter in much better hands, the first thing almost which I learnt being the launch of the "Vernon," and the introduction of the valuable improvements which Captain Symonds has ever since been carrying into effect, the very first of which undoubtedly is, "an increase of beam," and, consequently, "stability." Little more need be said upon this—once brought before public observation, there is no fear that we shall again hear of such "cribs of ships" as we have had; men of war, with decks hardly roomy enough to allow the squaring of their guns. I am not, however, certain that even Captain Symonds has yet carried this extension o. beam to the limits to which it may be found advantageously capable of. Now, I have never seen this so-much-talked-of ship, "the Vernon;" but as the public magazines (the Nautical) and papers have put me in possession, pretty nearly, of her construction, I shall take this ship as the example, and submit to her constructor in what manner she is, in my opinion, susceptible of being improved upon. I may, perhaps, make some mistake in my supposed knowledge of this fine ship's form; when I am uncertain, I will endeavour to guard myself. Upon the whole, I shall fearlessly express the opinions I have formed, and almost flatter myself, that in the surveyor I shall find, I won't say a convert, but rather anticipate that we may be found to have been all along "on the same tack;" and that what I am about to suggest is exactly what Capt. Symonds has only delayed putting into execution from the impossibility, perhaps, of doing all at once. I would, however, implore him, when once his mind is made up on any point connected with marine improvement, aided as he, no doubt is, with such resources and assistance as justify decision, to shut his ears to all opposition raised by dock-yard officers, and ignorance and prejudiee from whatever quarter they proceed, and carry into effect his measures.

It is my intention, before I close this series of letters (with your permission, Mr. Editor) to thoroughly expose the whole routine of difficulties and systematic opposition which every new plan, however

valuable, has (or had) to undergo, before its adoption in our naval service. I can produce cases that from these causes have lingered long enough to disgust their projectors with the country in which they lived. How many hundreds are thus constantly pining away under this mortifying state of "hope deferred!" I can instance a great number of useful (indisputably so) inventions, which have been actually lost sight of, from want of proper reception, some of which, perhaps, to be renewed, half a century hence, as fresh inventions! A system of stupidity and ignorance has prevailed over our naval departments, that has discouraged all attempt at improvement. More on this hereafter. At present, one instance:—*more than twenty years ago* an improvement was proposed in the fitting of the garboard strake, keel, dead-wood, &c. known at present as "Mr. Lang's keel, &c." I defy it to be contradicted when I say, that no man of common intellect can look at a drawing of this plan without immediately acknowledging its unquestionable merits. Now, how long since has this merit been found out, and adopted in our dock-yards? I mean, adopted as part of the system to be observed in building our ships, not a few exceptions to try experiments with—*to experiment upon what could never admit of a question.* I will further add, that if he, upon whose fiat depended the adoption of such an improvement, did not avail himself of it in the very first ship that was afterwards laid down, that he was a man more fitted to be gatekeeper at the yard where Mr. Laing was an officer, than to have sat at a board on which depended the efficiency of the ships of war of this great naval country. Let us be thankful that there has been some change since the time alluded to; and let us implore our able surveyor fearlessly to adopt what is good—and those things which are so, are more easily seen so to be than most people imagine, when looked at by a man of clear head, unfettered by fear of professional clogs and vulgar criticism.

The next grand defect in our men-of-war has been, the sending them to sea like *loaded merchant-ships.* When the fine bottom of a ship-of-war is looked at, her utter unfitness to be made "a beast of burthen"—I say, when the form of a ship is taken into consideration, a frigate, (I have always this class in view, in this discussion,) manned and victualled on the war-establishment, goes to sea in foreign service *a loaded ship.* Now, long practice has taught me the difference in a merchant-ship *light*, and *loaded*; I have been in ships of all descriptions, and in all states of loading, and what I want to see is, our men-of-war sailing in the trim that I *know to be best for a merchant-ship*: it may be taken as an incontrovertible axiom, *that a ship sails exactly in the ratio of the weight she has to carry.* What possible necessity can there be, that the "Vernon" should draw twenty-one feet and a half water? it cannot be thought essential with a view to her being weatherly! if so, how account for the disproportion between her and a first-rate in this

respect? I think it cannot be with such view that such draught of water is thought to be necessary, but that it is considered, in fact, unavoidable, a certain quantity of water being of necessity to be displaced, and, unless it is done by a deep, *sharp* bottom, one of a less depth must be substituted; and which it may be supposed not to admit of a form for sailing so well. I will, therefore, take for granted, that if a good form of bottom could be preserved, and that the ship remained the same height out of water, there could have been no objection to the Vernon having been constructed of *two feet less depth.*

It was my intention to have gone into some detail, to shew, by examples in merchant ships, how unnecessary drawing much water is to effect the end I have supposed might have been in view, in requiring the Vernon to draw 21½ feet water; but it will avoid the detail, by, for the present, taking for granted what I maintain can be so easily proved; and I will content myself with stating, that the grand method of overcoming the tendency to *leeway* is to give a ship increased *headway*, and that this is best effected by lightening her of as much useless weight as possible; which truth might as well be acted upon in the construction of the ship, as waiting to find out the error till it is necessary to escape from a superior force,—that being the only time, it would seem, it ever occurs to those interested, that by disburthening a ship of a load, the faster she will go.

Supposing then it is conceded, that such a depth as two feet might be dispensed with in the Vernon, how is she to stow her stores? This depth must be taken out of the hold; to effect which, I will suppose it necessary to disburthen the ship of nearly 400 tons of weight,—how is this to be effected? In round numbers, 100 tons to be added to her displacement, which can, therefore, only be said to cause her to draw less water, but not to disburthen her of any weight, this being only intended to be effected to the extent of 300 tons; of which, 100 tons are to be found in lightening the ship's hull, and 200 tons taken out of the hold: the correctness of these numbers relatively is quite immaterial; the effect intended to be produced, is apparent, the estimate is taken at hazard; the detail of the method, as to exactly the proportionate means, is subject to calculation, but I am pretty confident that even my guess will not prove far wrong.

I am loath to make an objection to any particular part of the formation of Capt. Symonds' ships, and I do it the more cautiously in respect to the Vernon, because I have never seen either the ship or her draught, therefore I don't know exactly whether the objection I am about to make applies to her in such a degree as I know it does to some of his construction. I have, however, the less doubt of its doing so in a sufficient degree to entitle me to observe upon it, because I am confident that in no man-of-war

yet constructed in *our dock yard*, has the principle, I have satisfied myself is right, been carried to any thing near the extent, I believe it should be; and what I allude to is, the producing an *effective and continuous* beam to the greatest possible extent fore and aft; and having this beam at the water-line, and which, in a man-of-war, I think should continue the same 4 *to* 6 *feet upwards*; so as to present the same beam when at the utmost inclination that can be contemplated by pressure of sail. Now, this is an important point, and which, with submission, I think, Capt. Symonds has not paid sufficient attention to; he having placed the main breadth *above* the load water-line, therefore, as regards stability, the nominal beam of the ship is *not available until after a certain heel* further. The beam of his ships has a tendency to deception, — it is only at *one point*, that is to say, at a certain section at which he has chosen shall be the main breadth, and from this breadth the beam diminishes fore and aft. Now, this form, unquestionably, admits of giving the finest entrance, and the cleanest runs, but this is effected *at the expense* of stability. As this question (continuous beam) affects the whole formation of the ship, it is a very important one. I will readily admit, that a very fine entrance and after-body *under water* are essential to fast sailing, but I think no more so than admits *a very considerable length* of *straight side* at and above the water-line. This is a point that I have long paid particular attention to in merchant shipping, and the *effectiveness* of the beam, carried, as it is in some ships, (the Bristol-built ones particularly,) from before the fore-channels to the after part of the mizen ones, in as near as may be *a straight line*; and this being a description of such ships' water-lines, even when they are perfectly light, (with very small deviation abaft, and less forward) and these ships sailing notoriously well when light or moderately loaded, and being as notoriously *stiff ships*, and able often to carry sail even without ballast, although very narrow, would naturally lead to the conclusion, that the cause is to be found in the beam, though narrow apparently, and indeed really so as compared with the depth, yet, it being *carried fore and aft*, becomes more than equal to that of a ship nominally a great deal wider; but which width being only in *one part*, probably she is found to want stability, though the cause is not seen.

That what I have described of these uncommon carrying ships is correct, is well known. I have been in one of them, perhaps the largest carrying ship, in proportion to her tonnage, that was ever constructed; she would deliver in sugar and rum, including the tare, considerably more than double her tonnage; this ship sailed, when in ballast, *very fast*, compared with any of the finest constructed merchant-ships, *was extremely stiff* at all times; though of enormous depth compared to beam, would

carry sail without any ballast, and drawing about 15 to 16 feet water, and with as much side above water as one of the old seventy-fours, *was not so leewardly as she was when loaded, because* she went very fast through the water when light; which, it may be readily believed, she did not when loaded in the way I have described her to be capable of. That stability is effected by continuous beam, there can be no doubt, it must be quite apparent; and as to sailing, I cannot but think it may as readily be seen that a ship of such construction *must go* faster than one which, to obtain the same stability, has an extension of beam *at one particular point only*; take the area of a section of the two ships at *their broadest part*, that of the last ship is of course the greatest, and this has to be propelled through the water at an effort necessary to overcome a greater resistance than in the other. The broad ship in one particular point, it has already been conceded, is better adapted to fine and long lines; but very great attention to this point has convinced me that this does not serve to counteract the *greater area* of the midship section. I say, that, admitting every importance to fine entrance and fine runs, yet, that all experience proves that there is not an equivalent advantage gained by them, to set against the disadvantages above stated, and that, in fact, an easy well-turned bow divides the water more readily than Capt. Symonds' ships; fine fore-bodies would lead to the supposition, is his opinion; and also that the water, being conducted as it were for a considerable distance along a straight side, has a disposition to close more naturally upon the run aft, though shorter, than it has to close immediately *round the midship section*, it (the water) having been led to *that point* by an extreme fine entrance extending gradually thereto from the stem. This I submit as a fact well proved in merchant-shipping, and which I would recommend to be acted upon, to a certain extent, in the formation of the water-line of a man-of-war, but, as the form of a ship's bottom must of necessity partake more or less of the form of this line, it is hardly necessary to say that such limitation of the *straight side*, as will admit of a fine bottom and good ends to it, is admitted as indispensable. In suggesting these alterations on the "Vernon," it will be immediately seen that I am only extending Capt. Symonds' ideas of the value of beam in her by rendering it more effective, increasing stability, and supporting her better at each end, instead of her hanging too much upon the midship section, and obviating one objection, which might otherwise be made, to reducing the weight she carries for ballast.

I maintain that a ship's stability should be made to *depend upon her dimensions*, and not upon loading her with an unnatural and enormous weight. Now, be it observed that I am only advocating so far a change in the water-line, and that line preserving its form for a few strakes above it; therefore the bottom is left to be

formed *just so fine* as will admit of the necessary displacement, and which displacement will have to be equal to sustain about 300 tons less weight than in the Vernon, as at present constructed; I having, (as has already appeared) supposed, that there will be *necessarily* equal to 100 tons, added to the contents of the bottom; thus reduced in height, and extended in breadth, by the carrying of beam towards each extreme: (in forming an idea as to the correctness of this estimate, it must not be lost sight of, that the two feet taken out of the bottom will, as it effects displacement, come off the very sharpest part, or very bottom of the ship.) I would thus reduce the whole depth of the ship, as at present formed, two feet; but I would only in effect reduce her draught of water *one*. As an additional means of increasing stability, I would recommend an increase of one foot of keel, that is, instead of the present false keel, substitute one of sufficient depth, to add one entire foot to the draught of water; and let this be of the commonest pine, bolted upwards to the main keel, with composition rag-bolts or dumps, to go six inches into the main keel: this under or false keel would split away without any injury to the main one, on a ship getting on shore; or the bolts would break off, still without mischief. This method, of adding to some important qualities of a ship, it is truly astonishing to me, has not been generally adopted. As *a means* of producing *weatherly qualities*, it must be plain, upon the first inspection, that the addition of a keel upon a ship of a flat bottom, is much more effective than giving the same ship a sharp bottom carried down to the additional depth the keel would give; this is indisputable, and, if added as above proposed, there can be no possible objection; it would be perfectly secure, (I have tried it,) and would most assuredly, when it became a useless incumbrance, (the ship on shore) as readily take its departure without effecting injury. But in proposing the addition of a deep keel to a ship-of-war, it is not with a view of adding to her weatherly qualities alone, but to gain *stability* and *easy motion*, points which should be produced as much as possible by construction, rather than by ballast. Now, that stability is gained by depth of keel, may perhaps be questioned, and probably not easily proved theoretically. Take a model, add a deep keel to it, of wood not heavier than water, apply a force to heel the model, and the additional keel will not shew that any stability is gained; but this experiment will shew that the inclination of the model is not attained so *quickly* as it would be without the keel, therefore, *in practice*, stability, and easy motion, I maintain, are both gained. Try another experiment: secure a couple of oars, blades downwards to the head and stern of a boat, let them be immersed six feet below the bottom of the boat, with their edges fore and aft, and then try to sally this boat, and say whether or not this substitute for the deep keel produces stability to

the boat; notwithstanding that, if you get out of the boat, make her fast, step a mast, and, with a rope to the head of it, by application of force you will incline the boat as if the oars were not there; *but not so quickly*, supposing the oars, of course, to be not heavier than water. Let us take another example, to shew the effects of the deep keel. Most of your nautical readers, probably, have seen a north-country "coble;" to those who have not, it may be soon described: it is perfectly flat, very light, very sharp forward, no keel, (the bilge pieces can hardly be called keels) and square abaft draws scarcely any water when light, the extreme part of it abaft, being a little out of the water altogether. No shape of vessel can well be conceived much less likely than this, for carrying sail, but these cobles do shew one of immense size and weight; and this in the most violent weather; and how are these boats kept upon their legs?—by a rudder which extends five or six feet *under their bottom.* Now, if this rudder was to be carried away, it is quite certain that these boats could not sustain the sail for a moment; and any of the men who navigate them would tell you so; and yet this rudder can add nothing to stability more than the oars, looking at the matter theoretically; and it is just in such cases as these, when experience and observation, arising from practice at sea, come in to aid us; who can conceive the vast difference between the theory and practice, as in these instances; or, more properly speaking, the inapplicability of the theory, as here supposed to be used. I should like to hear what can be said about the "centre of gravity" in the coble, and boat with the oars under her bottom; this centre is evidently not in the same place when attempting to incline them for experiment, and when their stability is put to the test in practice.

The ordinary heel a ship takes in smooth water is not exactly the situation in which to judge of her stability, though perhaps a tolerable notion may be formed even by such trial: to effect the proper degree of stability, until Captain Symonds had the good sense and resolution to add beam, has hitherto been by addition of ballast, or, as the learned would say, "by lowering the centre of gravity." Now, a practised seaman knows very well that this quality of stability is put to the test in the *quick* and *abrupt* action of a ship *lurching in a sea;* and it is here where the *tendency of the deep keel* counteracts, and is brought effectually into use, as well as to *ease* the rolling and moderate the *quickness* of it, and which is so well shewn in the coble; her quick and constant motion, under a press of sail and in a sea, *always* keeping the quality of her deep rudder in requisition. Thus the stability of the ship is to be increased by deep keel adding to the effective beam, and by decreasing the depth of the hull two feet, and next by a reduction of the weight aloft; and this point now to be considered, I think may be carried to a great extent, and with manifest

advantages. It appears the Vernon is nearly 53 feet broad: this width, I have said, should be extended fore and aft considerably, and carried perhaps 4 or 5 feet above the water-line; immediately from which *I would throw home the top sides*, so as to make her 10 *feet, at the very least*, narrower at the gangway than at the water-line. Captain Symonds' ships are somewhat narrower aloft; *but there can be no reason shewn* why this should not be carried to the extent I have named. A roomy ship she would still be left; a stronger, lighter, and more stable ship, she would most assuredly become; and though crooked and expensive timber would be required in the upper frame, yet it would be much more than saved, in the whole quantity of every thing being considerably diminished. A much handsomer ship she would undoubtedly be, in the eyes of those who have taste to consider beauty in a ship to consist in that which accords with common sense, is useful, and in its end forms a complete man-of-war. I think that I underrate the weight that will be dispensed with in the ship's hull considerably, when I only state it at 100 tons. We have yet to get rid of 200 tons, to enable the "New Vernon" to swim at the draught of water proposed, and this must be in kentledge and water.

It is no such very bold proposition, the taking away of 200 tons of weight out of a ship; the whole stores of which, with ballast, including masts, &c. amounts to, probably, nearly 1200 tons. To those conversant with what weight is, when applied to a merchant ship, how very gladly it is dispensed with, and how very little is really found to be necessary; it will not appear an affair of such importance when we see 1000 tons left, which, except the masts, rigging, and guns, may be placed where we like; and especially when it is added, that, to carry all this, we have in the construction of the ship herself no special limit to the beam she may be built with. Sufficient importance, it appears to me, is not given to beam in our dock-yards, in considering the estimates and regulations. Mr. Edye's book, for instance, in giving the weight of the stores, ballast, &c. of different classes of vessels, does not, even on any occasion, by any reference to *beam* and *depth*, lead one to suppose that these most important *relative* proportions of a ship are taken into consideration, in appropriating the weight put into them. Take a 46-gun frigate as an example; are there not in our service many ships so rated, that differ essentially in these important particulars? to shew of what consequence the dimensions relatively are, when considering stability and the necessary weights, to have the centre of gravity in the right place—let us suppose, for instance, a ship of this class constructed with a beam, added to 10 feet, and a diminution of 2 or 3 feet in depth, what a strange alteration is here necessary, not only in placing the weights, but in the amount of them! It is certainly (to go yet further) possible to produce such a ship, by extension of beam and contraction of

depth, as would require no ballast whatever; and it is from well weighing these considerations, that I conclude 200 tons may be taken out of the "New Vernon's" hold, (or rather never put into it;) and that she will, as then constructed and weighted, be a ship of great stability. Let, however, the draught of such a ship be made, and when all the alterations of weight and displacement produced by her new form are correctly estimated, and the weight taken out of her hold, which it is supposed to be necessary to make her swim at the water-line proposed, (and which weight I have stated at 200 tons, and which must be diminished, or added to, to bring her to her proper draught,) and then let us look where the centre of gravity will be; and, I say, it will be found to ensure *an immense stability*; and if it does not, I only say, *construct the ship with more beam still.* For until we get a man-of-war *lightened* of what she carries, all attempts at any further material improvement in sailing qualities are visionary; but when a ship is constructed, as I have proposed a new ship to be, of the Vernon's length, and partially increased beam and diminished depth—then, I say, will be produced a ship that *shall beat* hollow every thing that floats.*

I must now proceed, in as brief space as possible, to shew how the 200 tons may be taken out of the Vernon.

I have seen it stated, that this ship stows 253 tons of water; this, with the tanks and casks, I call 310 tons, 110 tons of which I would take out. I am not informed how much kentledge she carries, but probably it may amount to 90 tons, which, also, I would land; and, if there should not be sufficient kentledge to make up the 200 tons, some stores might be taken out, (upon the same grounds as I shall give for diminishing the water;) indeed, if I thought my suggestions would be listened to, I think I could point out, in stores, a good deal of weight that might be *most economically* dispensed with. There will then remain on board

* One observation occurs to be made here, from seeing it stated in your Magazine, from a publication by Mr. Beaufoy—"that a triangular bottom is best to counteract lee way." Now, in this property, as far as shape of bottom is concerned, the excessive overcarrying Bristol-built ship beats any man-of-war; her *up* and *down* form presents a perfect *lee board;* and the object in introducing this note, is principally for the purpose of remarking, that the *continuous beam* has this effect also; making the Bristolman's lee side as bad to press to leeward, as though you were to attempt to move through the water a barn door in the direction of its great superficies. I will add here, that the straight side gives a *steadiness* to a ship in her progress through the water, which clearly aids her sailing materially; and I will venture to say, that an observant officer would *feel* the effect of this, the first time of making sail upon a ship of this construction, and especially if going a little free. This struck *me* most forcibly the first time I was in a ship remarkable for the *straight* properties. It appears that the Vernon's worst sailing is going free. If a ship, such as I am advocating, does not on this point go two knots faster, under topgallant sails, than the ship improved upon, I would hold all my remarks as useless.

about four months' water; and why more should be carried, in these days of advanced knowledge, I am at a loss to tell, though at none to know what arguments will be made use of against me.

The supposed necessity of carrying six months' water may be doubted; because that is the utmost quantity that was ever supposed to be necessary; and it will surely not be denied, that going back about half a century only, the average of all voyages, and other naval duties, has been reduced, as to time, fully as 4 is to 6.

But the most serious objection, to a man-of-war being often obliged, under all possible disadvantages, to be filling up water, is the fact, that in the tropics (and, in bad weather, every where) this duty is attended with evil consequences, the extent of which, few have an idea of; I mean, of course, the exposure to climate, and especially in the night in situations where diseases are contracted, the effects of which are, perhaps, more fatal, and produce more loss of life in the navy, upon the whole, than the fire of the enemy; and here, as though to aid so great an improvement as I am advocating, namely, to make our men-of-war nimble and rapid, instead of the over-loaded ships they are, comes an invention, truly creditable to the age, and such as I have long thought could not remain undiscovered, in the present state of the sciences. I allude to the "purifying of sea-water;" I need only mention this, to enable those who have the direction of our naval affairs to know to what I refer, the king being patron to the society of gentlemen who are producing, and bringing forward, this most important means of supplying ships at sea abundantly with fresh water; and many naval men of distinction also lending their aid to this end. Now, when with such means a sufficient, and more than sufficient, quantity of fresh water can be produced daily, with perhaps even less expenditure of coals than at present, it will surely not be considered necessary for a man-of-war to carry more than *two months'* water, and this only as a precaution, and for ballast; thus enabling even a greater reduction of weight to be effected (and which, I shall then advocate the advantage of being brought in aid of further improved form of ship) than I am requiring in the present case.

It is scarcely necessary to point out the advantage that will otherwise attend this supply of water, in preserving the trim of a man-of-war. Suppose two months always filled, the daily supply being provided from alongside, there will be no change of weight, except dry stores and salt provisions, for which an allowance being made, the equality of weight might be pretty well preserved, on long cruises or passages, by a certain quantity of bread, and other stores, being stowed in tanks, (which the making of fresh water on board will render rather abundant in store,) and occasionally filled up with purified water.

Such is the progress making, and the advantage to be effected by this most important invention; and which I shall be glad, if this notice of, may have even the smallest effect of drawing the public attention to: adding here, for fear of misinterpretation, that I am not, in the most remote degree, interested in the success of this invention, except as every one must feel an interest in it, as being fraught with such incalculable public advantages.

I fear, Mr. Editor, that I have trespassed too much upon your space; but the subject embraced in this letter is one of no trifling importance, and, I am fully aware, is far from done justice to; indeed, I feel myself capable of saying much more upon it—but enough for the present.

I propose in your next number, with your leave, to bring before the public some notice of the mode in which propositions are received for improvements; what gross and shameful neglect there is *somewhere*—and, indeed, I hope not only to be able to draw attention to this subject, but to *suggest a remedy*. And here, again, I feel it necessary to assert my disinterestedness, in stating, conscientiously, that I have no personal interest whatever in view.

I intend, also, in a further number, to propose your admission of some observations upon the shameful neglect, the total omission, not only of almost all material improvements, but all common sense, in the construction of our merchant shipping.

In the mean time, allow me, Mr. Editor, with many thanks for your indulgence thus far, to subscribe myself,

Your most obedient servant,

December, 1835. "MERCATOR."

CENTRE OF ROTATION IN SHIPS.

To the Editor of the Nautical Magazine.

SIR,—In the last number of your Magazine, a writer has published Strictures on certain investigations of Mr. Henwood.

He observes, that "Mr. H. assumes the truth of this point, that the axis of rotation of a ship, under *all circumstances*, passes through its centre of gravity." He then observes, on Mr. H.'s quoting this proposition from Whewell's Dynamics, that the axis of rotation must pass through the body, that this problem supposes the body to be moving *freely* and *in vacuo*, or in a non-resisting medium, and cannot of course apply to the case of a ship that revolves in a dense fluid. He then states, that Chapman was "aware of the fact," that a ship's evolutions are not always performed round her centre of gravity, and quotes, from the Architectura Navalis Mercatoria, "an axiom" to the same effect: and he further states, that a ship would so revolve, but that the action of the water almost always prevents her from doing so.

After the motion of fluids, and the theory of vibrations, there is, perhaps, no branch of mechanics more difficult to see one's way through, than the motion of a body when not constrained to move round a fixed axis; accordingly, it is not to be wondered at, that writers, who have not followed out the details of numerous questions of the kind, should have doubts on the matter, and, taking

up with that view of the question, which addresses itself to the eye rather than to the reason, should advance doctrines long known by mathematicians to be erroneous.

The general question of—whether a body, perfectly free, revolves round its centre of gravity or not, turns on abstract analysis; but, as this kind of evidence brings no conviction to those who are not accustomed to such matters, it would be useless to trouble your readers with it. It will, therefore, be enough to point out here, that the writer of the Strictures above has not rightly understood the proposition quoted from Mr. Whewell; and to add one or two considerations on the nature and use of the discussion.

The writer has misunderstood the meaning of the word *freely*. This word implies merely the absence of all constraint of a *fixed axis* or *point*; but it by no means implies the absence of a resisting medium, because, when the body is once in motion, whether by the action of a force or forces which have ceased or are still acting, the resistances afforded by the fluid or medium against it, are *themselves* among the forces which are acting at any instant to increase or diminish its motion. The proposition, therefore, involves this case, for it is the same thing, whether by *forces* we understand a multitude of strings pulling with different intensities, or a multitude of columns of water pressing with different pressures.

Mr. Whewell merely gives the general proposition; but the writer of the Strictures will find more extensive information on the subject in the profound *Traite de Mecanique* of M. Poisson, in the 2d part of the Dynamics.

When forces act on a body with a fixed axis, they produce a certain quantity of rotation: when the body is not thus fixed, the forces produce, besides the *rotation*, a *translation* of the centre of gravity *itself*. Venturoli, in his *Elementi di Meccanica*, and more recently M. Francœur, have given a simple and beautiful illustration of these two motions, and of the centre of spontaneous rotation caused by a single force.

The general proof of the two separate motions is, as above-said, a matter of analysis; but it must not be concealed from those who are inclined to take the plausible view of the subject, that when the mind has got firm hold of the elements of mechanical questions, it has but little difficulty in perceiving the truth of such general propositions in any particular case.

To return to our writer. He advances the doctrine, that when a vessel, having been raised by the sea, is on the point of pitching, the centre of motion, or rotation, is somewhere abaft the centre of gravity. That the centre of *spontaneous rotation*, as it is called, is there, no one doubts; but that the *mechanical properties* which belong to the centre of rotation belong to this point, every one who understands the subject will deny; for the apparent fixedness of this point is owing merely to its being carried as fast one way by the translation, as the opposite way by the rotation.

The only use of these discussions is in the conclusions they lead to. Every question of rotation, of ships or any thing else, resolves itself ultimately into this—a certain quantity of rotatory motion is communicated in a certain time. If the writer, in arriving at his result, finds it easier, in conducting his calculations, to follow one plan than another, that is no concern of ours; but when he tells us that the ground of our calculations in all such questions is erroneous, his assertion has not been sufficiently considered.

In conclusion, I have to apologize for the hasty manner in which these remarks are thrown together; but as many of your readers may at a future time employ themselves on this branch of science, and as erroneous impressions at the outset will greatly increase their difficulty, it is desirable that they should be acquainted that the point in question has been fully weighed. X.

Latitude by Stars.

According to the promise made in our November number, we here give a table of the meridian passages of the principal stars for the present year, and shall briefly recapitulate the directions and remarks in the former paper.

The times of passage are given for every tenth day in *mean time*, and are noted to the *tenth* of a minute, or six seconds, which is near enough for the purposes required.

The table shews the observer what stars are near the meridian at any given time, and at what time a proposed star that may be visible at the time of year, in a small telescope, will pass. It also gives the horary angles of the stars, which are often convenient, especially for finding the latitude by the pole-star, and also by altitudes near the meridian, as will be exemplified.

To find the transit of a star on a day between the dates given: multiply 39·4 (the difference of transit in ten days) by the number of days elapsed since the nearest date past, divide by ten, and subtract the product from the last inserted transit.

Example: Find the time of transit of γ Draconis on April 24th; the 24th being four days past the 20th, multiplying 39·4 by 4 gives 157·6; this divided by 10 is 15·7, which subtracted from 15 h. 55·8 m. gives 15 h. 40·1 m. on the 20th, or 3 h. 40 m. in the morning of the 21st, civil time.

To convert the time of passage into *apparent* time, or the time by the sun, by which the glasses are regulated at sea, apply the equation of time which is given for this purpose under each column.

Example: The equation of time is 1·2 on the 20th, and 2·9 on the 30th; the difference 1·7 multiplied by four and divided by ten, gives 0·8, which added to 1·2 gives 42·1; and this *added* to 15 h. 40·1 m. (as directed) gives apparent time 15 h.

When the time of transit is required to nearer than two minutes, it is necessary to correct for longitude: to do this—in west longitude deduct ten seconds per hour, or fifteen degrees of long.; in east long. add the same.

Example: The transit of a star by the table is 9 h. 40 m., to find the time of transit in 72° west; 72° being five hours nearly, 5×10^{s}, which is 0·8 of min., is to be deducted; this gives the corrected transit 9 h. 39·2 m.

The transits in the table are upper transits, that is, above the elevated pole. But since all stars whose polar distances are less than the latitude do not set, such stars may be observed below the pole. The lower transit takes place 11 h. 58 m. of mean time, nearly, before and after the upper transit.

Example: The pole star passes the meridian above the pole at 3 h. 2 m. on Feb. 20th; hence the lower transit takes place at 3 h. 4 m. of the morning of that day, and at 3 h. 2 m. of that of the next.

To find the horary angle or meridian distance of a star, take the difference between the given mean time and the meridian passage of the star, and increase it by adding ten seconds for every hour: the result is the horary angle required. If the time at place exceed the time of passage, the horary angle is to the west; if otherwise, to the east of the meridian. If the result exceed twelve hours, subtract twelve hours, and reckon east for west, and west for east.

Example: Feb. 20th, 9 h. 4 m. mean time; find horary angle of pole star, the difference of 9h. 40m. and 3 41·4 (pass. mer.) is 5 58·6, which increased by 1 m. is 5 59·6, the horary angle required W.

As the sea horizon is generally not well defined at night, it is advisable for the same observer to take two stars, the one on the north and the other on the south side of the zenith, as soon after each other as they can be obtained: the mean of the two latitudes thus deduced may be presumed to be nearer the truth than either taken separately, for the eye will probably be in error the same way at each observation. The chief obstacle to night-observing at sea is the inconvenience of reading off the instrument; when this can be done with tolerable quickness, it is always advisable to take two or three altitudes during the time that the star remains about the meridian altitude, in preference to straining the eye to watch its rising or falling.

In the morning and evening twilights, especially the former, because the eye has been already accustomed to the want of light, altitudes of bright stars can readily be taken.

In all cases when the horizon is clear, it will be quite as well to observe the stars at any time within half an hour of the meridian, in high latitudes, on either side, and to reduce the altitude to the meridian alt. which is easily done thus:—

To the constant log. 3·837 add twice the log. sine of half the mer. distance, log. cos. declin., and log. cos. lat. by acct., and log. sec. alt.: the sum is the log. of a number of minutes to be added to the (corrected) observed alt.

Example: Feb. 20th, at 8 h. 56 m. mean time, lat. by acct. 46° N., long. 40° W., true altitude of Sirius 27° 22′. The mer. pass. on Feb. 20th is 8 h. 38·7 m.: deduct 30 s. or 0·5 m. for 40° W. longitude; then the horary angle is the difference of 8 h. 56 m. and 8 h. 38·2 m., or 17·8, which is 4° 30′ W. nearly.

Adding then the logs., as in the margin, we find 7·9 to be added to the obs. alt., which gives the mer. alt. 27° 29·9′.

Const.	3·837
2 log. sin. 2° 15′.	7·188
16° 30′ declin. cos.	3·982
46° lat. cos.	9·342
27° 22′ alt. sec.	0·051
Correction 7·9′ log.	0·900

When a star is observed below the pole, the correction is to be subtracted from the observed altitude.

Star.	Magn.	Jan. 31.	Feb. 10.	Feb. 20.	Mar. 1.	Mar. 11.	Mar. 21.	Mar. 31.	Apr. 10.	Apr. 20.	Apr. 30.	May 10.	May 20	May 30.	June 9.	June 19	June 29	Declination
		h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	° ′
γ Pegasi (Algenib)	2,3	3 25·2	2 45·9	- -	- -	- -	- -	- -	- -	22 6·8	21 27·5	20 48·1	20 8·8	19 29·5	18 50·2	18 11	17 31·6	14 16 N.
β Ceti	2,3	3 55·7	3 16·4	2 37	- -	- -	- -	- -	- -	- -	- -	21 18·5	20 39·2	20 0	19 20·5	18 41·4	18 2	18 53 N.
α Urræ Minor. (Pole Star)	2,3	4 20·8	3 41·4	3 2	2 22·5	1 43·6	1 3·8	0 24·4	23 41·3	23 2	22 22·7	21 43·4	21 4·2	20 25·1	19 45·8	19 6·6	18 27·4	88 26 N.
α Eridani (Achernar)	1.2	4 51·8	4 12·5	3 33·2	2 53·8	2 14·5	1 35·2	0 55·8	0 16·6	23 33·4	22 54·1	22 14·7	21 35·4	20 56·1	20 16·7	19 37·5	18 58·1	58 4 S.
α Arietis	3	5 18·1	4 38·8	3 59·5	3 20·1	2 40·9	- -	- -	- -	- -	- -	- -	- -	- -	20 43	20 3·8	19 24·5	22 41 N.
α Ceti	2,3	6 13·7	5 34·4	4 55·1	4 15·7	3 36·4	2 57·1	- -	- -	- -	- -	- -	- -	- -	- -	20 59·3	20 20	3 26 N.
α Persei	2,3	6 32·5	5 53·2	5 14	4 34·6	3 55·2	3 15·9	2 36·6	1 57·3	1 18	0 38·7	23 55·4	23 16·1	22 36·8	21 57·4	21 18·2	20 38·8	49 16 N.
α Tauri (Aldebaran)	1	7 46·3	7 7	6 27·7	5 48·3	5 8·9	4 29·7	3 50·3	3 11	2 31·7	- -	- -	- -	- -	- -	- -	- -	16 10 N.
α Aurigæ (Capella)	1	8 24·2	7 45	7 5·6	6 26·3	5 47	5 7·6	4 28·3	3 49	3 9·7	2 30·3	1 51	1 11·7	0 32·4	23 49·1	23 9·9	22 30·5	45 49 N.
β Orion (Rigel)	1	8 26·3	7 47	7 7·7	6 28·4	5 49·1	5 9·7	4 30·4	3 51·1	3 11·8	2 32·4							8 24 S.
β Tauri	2	8 35·5	7 56·2	7 16·9	6 37·5	5 58	5 18·9	4 39·6	4 0·2	3 20·9	2 41·6							28 28 N.
δ Orion	2	8 43·2	8 3·9	7 24·6	6 45·2	6 5·9	5 26·6	4 47·2	4 7·9	3 28·6	2 49·3							0 25 S.
ε Orion	2,3	8 47·5	8 8·2	7 28·9	6 49·5	6 10·2	5 30·9	4 51·5	4 12·2	3 32·9	2 53·6							1 19 S.
α Columb	2	8 53·2	8 14	7 34·7	6 55·3	6 16	5 36·7	4 57·3	4 18	3 38·7	2 59·4	2 20	1 40·7	1 1·4	0 22	23 39	22 59·5	34 10 S.
α Orion (Betel.)	1	9 5·8	8 26·5	7 47·2	7 7·8	6 28·6	5 49·2	5 9·8	4 30·5	3 51·3	3 12	2 32·6						7 22 N.
α Argus (Canopus)	1	9 39·7	9 0·4	8 21·2	7 41·8	7 2·5	6 23·2	5 43·8	5 4·5	4 25·2	3 45·9	3 6·5	2 27·2	1 47·9	1 8·5	0 29·3	23 46	52 36 S.
α Canis Major (Sirius)	1	9 57·3	9 18	8 38·7	7 59·3	7 20	6 40·7	6 1·3	5 22	4 42·8	4 3·4	3 24·1	2 44·8					16 29 S.
ε Canis Major	2,3	10 11·5	9 32·2	8 52·9	8 14·6	7 34·3	6 55	6 15·6	5 36·3	4 57	4 17·7	3 38·3	2 59					28 45 S.
α Canis Minor (Procyon)	2	10 49·9	10 10·6	9 31·4	8 52	8 12·7	7 33·4	6 54	6 14·7	5 35·4	4 56·1	4 16·7	3 37·4	2 58·1				5 39 N.
α Gemin (Castor)	2	10 43·4	10 4	9 24·8	8 45·4	8 6·1	7 26·8	6 47·4	6 8·1	5 28·8	4 49·5	4 10·1	3 30·8	2 51·5	2 12·1			32 14 N.
β Gemin. (Pollux)	1,2	10 54·0	10 15·2	9 36	8 56·6	8 17·3	7 38	6 58·6	6 19·3	5 40	5 0·7	4 21·3	3 42	3 2·7	2 23·3			28 25 N.
α Hydra	2	12 38·4	11 59·1	11 19·8	10 40·4	10 1·1	9 21·9	8 42·4	8 3·1	7 23·8	6 44·6	6 5·2	5 25·9	4 46·6	4 7·2	3 28	2 48·6	7 57 S.
α Leon. (Regulus)	1	13 18·4	12 39·1	11 59·8	11 20·4	10 41·1	10 1·9	9 22·4	8 43·1	8 3·8	7 24·6	6 45·2	6 5·9	5 26·6	4 47·2	4 8	3 28·6	12 40 N.
η Argus	2	13 57·4	13 18·2	12 38·9	11 59·5	11 20·2	10 40·9	10 1·5	9 22·2	8 42·9	8 3·6	7 24·2	6 44·9	6 5·6	5 26·2	4 47	4 7·7	58 49 S.
α Urræ Major.	1,2	14 12·3	13 33	12 53·7	12 14·3	11 35	10 55·7	10 16·3	9 37	8 57·7	8 18·4	7 39·1	6 59·7	6 20·4	5 41·1	5 1·8	4 22·5	59 38 S.
β Leo	2,3	14 59·2	14 20	13 40·7	13 1·3	12 22	11 42·7	11 3·3	10 24	9 44·7	9 5·4	8 26	7 46·7	7 7·4	6 28·1	5 48·9	5 9·5	15 29 N.
α Crux	1	15 36	14 56·7	14 17·4	13 38	12 58·7	12 19·4	11 40	11 0·7	10 21·4	9 42·1	9 2·7	8 23·4	7 44·1	7 4·7	6 25·5	5 46·2	62 11 S.
β Corvi	2,3	15 44·3	15 5	14 25·7	13 46·3	13 7	12 27·7	11 48·3	11 9	10 29·7	9 50·4	9 11	8 31·7	7 52·4	7 13·1	6 33·8	5 54·5	22 29 S.
12 Canis Venat	2,3	16 6·8	15 27·5	14 48·2	14 8·8	13 29·5	12 50·2	12 10·8	11 31·5	10 52·2	10 12·9	9 33·6	8 54·3	8 15	7 35·6	6 56·4	6 17	39 12 N.
α Virg. (Spica)	1	16 34·9	15 55·6	15 16·3	14 37	13 57·7	13 18·3	12 39	11 59·7	11 20·4	10 41·1	10 1·7	9 22·4	8 43·1	8 3·7	7 24·5	6 45·1	10 18 S.
η Urræ Major.	2,3	16 59·3	16 20·1	15 40·8	15 1·4	14 22·1	13 42·8	13 3·4	12 24·1	11 44·8	11 5·5	10 26·1	9 46·8	9 7·5	8 28·1	7 48·9	7 9·5	50 8 N.
β Centaur	1	17 10·5	16 31·2	15 51·9	15 12·6	14 33·3	13 53·9	13 14·6	12 35·3	11 56	11 16·7	10 37·3	9 58	9 18·7	8 39·3	8 0·1	7 20·7	59 34 S.
α Bood. (Arcturus)		17 26·4	16 47·1	16 7·8	15 28·4	14 49·1	14 9·8	13 30·4	12 51·1	12 11·8	11 32·5	10 53·1	10 13·9	9 34·6	8 55·2	8 16	7 36·6	20 3 N.
α2 Centaur	1	17 46·6	17 7·3	16 28	15 48·6	15 9·3	14 30·1	13 50·6	13 11·3	12 32·1	11 52·8	11 13·4	10 34·1	9 54·8	9 15·4	8 36·2	7 56·8	60 9 S.
α Cor. Bor.		18 45·6	18 6·4	17 27·1	16 47·7	16 8·4	15 29·1	14 49·7	14 10·4	13 31·1	12 51·8	12 12·4	11 33·1	10 53·8	10 14·4	9 35·2	8 55·9	27 16 N.
α Serp.		18 54·1	18 14·8	17 35·5	16 56·2	16 16·9	15 37·6	14 58·2	14 18·9	13 39·6	13 0·3	12 20·9	11 41·6	11 2·3	10 22·9	9 43·7	9 4·3	6 57 S.
β Scorp.	2	19 13·8	18 34·5	17 55·2	17 15·8	16 36·5	15 57·2	15 17·8	14 38·5	13 59·2	13 19·9	12 40·5	12 1·2	11 21·9	10 42·5	10 3·4	9 24	19 21 S.
α Scorp. (Antares)		19 37·2	18 57·9	18 18·6	17 39·3	17 0	16 20·6	15 41·3	15 2	14 22·7	13 43·4	13 4	12 24·7	11 45·4	11 6	10 26·8	9 47·4	26 3 S.
Triangle	2	19 49·1	19 9·8	18 30·6	17 51·2	17 11·9	16 32·6	15 53·2	15 13·9	14 34·6	13 55·3	13 15·9	12 36·6	11 57·3	11 17·8	10 38·6	9 59·4	68 43 N.
β Draconis	2	20 44·4	20 5·2	19 25·9	18 46·5	18 7·2	17 27·9	16 48·5	16 9·2	15 29·9	14 50·6	14 11·2	13 31·9	12 52·6	12 13·2	11 33·1	10 54·7	52 26 N.
α Ophiuch.	1	20 44·9	20 5·6	19 26·3	18 47	18 7·7	17 28·4	16 49	16 9·7	15 30·4	14 51·1	14 11·7	13 32·4	12 53·1	12 13·7	11 34·5	10 55·1	12 41 N.
γ Draconis	3	21 10·3	20 31	19 51·7	19 12·4	18 33·1	17 53·8	17 14·4	16 35·1	15 55·8	15 16·5	14 37·1	13 57·8	13 18·5	12 39·2	12 0	11 20·6	51 31 N.
α Lyræ (Vega)	1	21 48·8	21 9·5	20 30·2	19 50·9	19 11·6	18 32·3	17 52·9	17 13·6	16 34·3	15 55	15 15·6	14 36·3	13 57	13 17·6	12 38·4	11 59·1	38 38 N.
α Aquilæ (Altair)	1	- -	- -	21 41·5	21 2·1	20 22·8	19 43·5	19 4·1	18 24·8	17 45·5	17 6·2	16 26·8	15 47·5	15 8·1	14 28·8	13 49·6	13 10·4	8 26 N.
α Pavonis	2,3	23 29·8	22 50·5	22 11·2	21 31·8	20 52·5	20 13·2	19 33·8	18 54·5	18 15·2	17 35·9	16 56·5	16 17·3	15 38·1	14 58·7	14 19·5	13 40·1	61 53 S.
α Cygni	2	23 52·9	23 13·6	22 34·3	21 55·0	21 15·7	20 36·3	19 56·9	19 17·6	18 38·4	17 59·1	17 19·7	16 40·5	16 1·1	15 21·8	14 42·6	14 3·2	44 57 N.
ε Gruis	2	1 18·7	0 39·3	0 0·1	23 16·8	22 37·6	21 58·3	21 18·9	20 39·6	20 0·3	19 21·1	18 41·6	18 2·3	17 23	16 43·6	16 4·3	15 25	46 9 S.
α Piscis (Fomalhaut)	1	2 9·2	1 29·9	0 50·7	0 11·3	23 32·1	22 52·8	22 13·4	21 34·1	20 54·8	20 15·5	19 36·1	18 56·8	18 17·6	17 38·2	16 58·9	16 19·6	30 15 S.
α Pegasi	2	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	19 40·1	19 0·8	18 21·5	17 42·1	17 2·9	16 23·5	14 19 N.
Equation of Time		sub 13·7	sub 14·5	sub 14·1	sub 12·6	sub 10·2	sub. 7·3	sub. 4·2	sub. 1·3	add 1·2	add 2·9	add 3·8	add 3·8	add 2·8	add 1·1	sub 0·9	sub. 3	

Convict and Emigrant Ships.

To the Editor of the Nautical Magazine.

Sir,—I will commence my observations on the transport of convicts and emigrants, by stating, that in the recent loss of the Neva, which has been the cause of so much public attention being drawn to the subject of these wrecks, the insinuations, and the direct assertions, of the insufficiency of the ship, are I really believe without a shadow of foundation. The statements that have been made, and to which authority seems due, set this matter, I think, quite at rest. As to the cause of her loss, as well as that of the George the Third, an angel need not come to us to explain it; neither need we wait for the result of official inquiries from the antipodes, to arrive at the truth. The owners, and friends of the masters of these ships, want the courage and candour to come fairly to the point, and thus injure the cause of their servants, as is always the case when round-about measures are pursued, instead of direct ones. Both losses are clearly the result of "error in judgment;" to which may be added insufficiency in the charts, as regards one of them. Let those censure these two masters who are themselves never guilty of an "error in judgment."

Having thus disposed of these particular cases, I will now come to the point, and at once declare, that the convict service (as it is termed) has been conducted for a great number of years, in such a manner that considerable changes must be effected in it, and that forthwith.

Let it however be understood, that, as regards ship-owners, and individuals not in Government service, no reflection is intended; it may safely be asserted that no blame whatever can be attached to them; their plain undisguised object is the making of money by the profitable employment of ships. The practice which has obtained for the last few years, of cramming these ships worse than slavers, has been detrimental to their (the owners') interests; and it is quite certain, that so far from their being benefited by the objectionable proceedings which have existed, their interests will be decidedly served by a total change of them. This service should employ *good ships*, and nearly *twice the number* that it does at present.

The serious objections that are to be made to the manner of conducting this service are, first, the nature of the ships that have been employed in it; and, secondly, the method of late years adopted as to the monstrous number carried in each ship.

First. As to the sufficiency of the ships, these observations, it need hardly be observed, refer only to a large portion of them, some of the very best ships in England having been employed in carrying convicts. This sufficiency is a point that may be disposed

of shortly, because *it is perfectly notorious* that it has been a resource for many years past for the employment of such ships as were *worn out* in the East and West India trades; it has been quite common to say, speaking of an old ship, "she will do for convicts." The outward passage being accomplished, they have resorted to Java or Mauritius, (the best to India,) and there having been little known, they accept low rates of freight for return cargoes.

It will perhaps be here triumphantly observed by those who may be bold enough to question this statement, that, ever since convicts were sent to New South Wales, (considerably above forty years,) no loss, until the late three ships, has taken place. This must be admitted as extraordinary a circumstance as it is an undeniable one; it would almost appear, that from the nature of the cargo, *they were not to be lost at sea.* But their success, as is usually the case, has caused a dangerous security—an apathy in the mode of treating this service, from which it is time to awake, before other and more dreadful scenes occur than any that have yet taken place.

The nature of the voyage will account for these ships having had such continued success in their passages. The fact is, that generally they have been of a class and size well adapted for running before the sea, in the light state they are in. If they encounter any bad weather before they arrive off the Cape, it may be considered an exception to the general course experienced. Having attained to that stage of their voyage, the wind, when there is much of it, is always fair. They are by that time considerably lightened, by expenditure of water and provisions, and they can, and do, run many thousands of miles in a sea, which, if *deep laden*, many of them could not *contend with*, or *lay-to in*, for twenty-four hours! and the proof of this is to be found in the immense number of them which have put into ports in distress, and been condemned or foundered on their homeward passage.* These ships generally are, in real truth, unfit to contend with bad weather, neither can they encounter the ground with impunity; and I will add, as my firm belief, that if a list were made out, of the ships employed in the convict service for the last twenty years, and a fair and candid view taken of it by those conversant with the subject, that such list would be a condemning proof of the total want of regard that has been paid to safety during the whole period; and, moreover, that from the known talents, and unquestionable integrity and

* An idea of this difference, between a ship running before the wind *light*, and contending with it *loaded*, may be formed by any one bringing to his recollection, or imagining, on some very stormy day, running down a street with the wind *at his back*, and coming back again, carrying a burthen under which he with difficulty staggers, with the storm, sleet, or snow, *in his face*; there is some trifling difference in these two operations.

respectability, of the gentlemen upon whose opinion such ships have been accepted for the service, there seems no way of accounting for the aspect this list would have, but by supposing that they were not required to be over scrupulous as to the quality of the ships. Without assuming something of this kind, how is the fact to be accounted for, that, about twelve months ago, a ship in this service was unable to proceed beyond Ireland, from whence she returned, to undergo a thorough repair!!

I consider, however, that the late losses of the three convict ships, whereby about six hundred human beings were suddenly called to their final account, dreadful as it is to contemplate, to be nothing in comparison to what is to be expected from the manner in which these ships are now literally crammed!

The "Old Surrey" (and a fine old ship I know her to be) arrived at Sydney, about twenty years ago, in charge of the third mate; all above him having died at sea, together with a number of the crew and convicts, from what was termed "jail fever." This same ship is just now gone (or going) from Cork, fitted to take at least *one hundred people more* than she had on board at the time the fever broke out in her! I remember the case of fever occurring on board a large ship, with troops for India; when, I think, as many as 270 died on board her! and the ship got at length to the Cape, in such a disabled state, that, when brought up, they could not furl her sails! These two ships were, notwithstanding, perfect "yachts," as to accommodation for those on board, compared to the convict and some emigrant ships of the present day. Perhaps, if the surgeon of the George the Third has returned home, his report of the state of the convicts of that ship may be made public.

An instance has been related to me, of the shameful number of female emigrants lately put on board a ship for New South Wales. The ship is said to be about 500 tons, and, besides her crew, to have 300 females on board! In this ship the want of regard for every thing, except the making the most of her, is represented as shocking. There was just room enough left in the poop for the master and mate to have berths in which they could lie down, and but little more; no room was allowed for a pantry, nor any accommodation for the business of the steward; all the rest of the crew and inferior officers were berthed under the top-gallant forecastle—a place, as described, about sufficiently large to contain so many well-grown pigs! certainly not affording the accommodation the hen-coops and sheep-pens of a line-of-battle of ship would have:—this is the manner in which master, officers, and our gallant seamen are treated!

This ship would have on board from 330 to 340 souls! the "Old Surrey" perhaps 20 more; they are both, in tonnage, about that of an 18-gun corvette (of the old class), the whole complement

of her crew being 120, and which is more than can conveniently sleep below at one time, a great portion being considered as always upon deck. How it is to be justified, then, the putting three times that number on board similar-sized ships, I am at a loss to imagine; and this, too, when no human regulation can ensure cleanliness, when, in point of fact, as compared with the order and cleanliness of a man-of-war, these ships are literally filthy! These emigrant ships are, however, under the supposed management of most humane and worthy gentlemen; amongst whom is, I believe, a naval officer, who undertakes the inspection of them. I shall not hesitate, however, in saying, that this officer has placed himself in a situation of heavy responsibility; and that the Emigration Committee have much to learn, when they shew themselves so little acquainted with human nature, and of mercantile operations especially, as to trust to contractors, who stipulate, at *so much per head*, to carry out the "young ladies." What can such an arrangement but lead to?—clearly, the over-peopling of the ships! Money-making, and heartless cupidity, are terms not belonging to trade and contractors, unless this is the certain consequence.

The case of the women I consider by far worse than that of the convict ships: look at the cargo—women!—probably the great number of them decent, respectable young women, just leaving comfortable homes or services! They are unable to bear, as the convicts may perhaps do, the miseries I shall shew their situation on board ship will present; their clothes are more liable to wet, are with more difficulty dried; they have not been prepared by a prison, or the hulks, to encounter what convicts can do so much better.

The abuses in emigrant ships cry aloud for the interference of government; but the cases that have already occurred, in the numbers that have been sacrificed in American voyages, fail to have the desired effect. Wait but a little, for some scenes that are in embryo, in Australian ships: they will arouse the public to some purpose.

I will attempt to describe the lower deck of these ships, to draw a picture which, however, can be but faintly understood by those not conversant with such scenes. If the whole space below decks of these ships was made perfectly clear, neither beds, chests, nor other lumber interfering, and the whole of the convicts, or passengers, were to lay themselves down thereon, *they would probably completely cover the same*—they are, it need hardly be said, stowed in beds (six in each, I believe) one over the other.

We often hear of the misery of the lower orders at home, especially of the dwellings and resorts of the Irish labourers in London: has the same, however, occurred that is the hundredth part so bad as what follows?

Let us transfer the picture of one of these precious ships, to the shore. Suppose, then, you enter the abode of wretchedness, and there find the floor of a room literally covered with persons, (or as many as would cover it, however otherwise disposed of;) suppose the ceiling, or roof, *five feet above their heads* (when on the floor); and let us suppose this roof of wood, as well as the whole building; next, extending the dimensions of this place, so that the floor may contain 300 to 500 recumbent human beings; and imagine the thermometer to be at 100°, or perhaps higher, and that there is such heavy rain, for several days and nights together, as to prevent effectually the inmates from moving out, absolutely soaking the building thoroughly by finding its way among them; and then, if you can, Mr. Editor, fancy the effluvia and steam caused by the evaporation from the bodies of this congregation of human beings; you will have some notion of what the lower deck of these emigrant ships is for many days together—all attempt at ventilation, in rain or bad weather, being out of the question.

This is a state that few persons in this country can, notwithstanding this description, form an adequate idea of: and to such horrors are, most assuredly, subjected the emigrants and convicts, from the crowded state of the ships in which they are embarked; and this, too, is permitted by the most perfect and free government upon earth!

Look at this picture, Mr. Editor, and make comparison between it and the latter years of the slave trade, as it was conducted in the well-regulated Liverpool ships. To say nothing of the poor Africans' perfect indifference to heat, their capability of withstanding the rain; the absence of clothes and bedding, to become wet; to which their want of knowledge of all that is better, (for any change from the state from which they were taken, I contend, could not be for the worse;) and then say, whether or not the ships *now, in these days,* employed in the conveyance of "*whites,*" are not infinitely worse! A ship is surveyed that is to take out perhaps from 300 to 500 people, just in the manner that would be done had they to send out so many "bales of cloth;" the ship is measured as to how many human beings can by any possibility be put into her; if one man can be squeezed into a corner, between the bitts, or any other place whatever, beyond what can be put into the other ship in competition, all other considerations are overlooked, and she is accepted.

In the emigration system to which I have alluded, the same system seems to prevail, the object being to get the "young ladies" out for the least possible sum. *O tempore, O mores!* Only imagine a set of decent, respectable young women undergoing all the horrors that must arise from the crowded state I have above described. Let any one but fancy, Mr. Editor, for a moment

such a scene—" the 'twixt decks" of one of these emigrant ships, on a rainy night in the torrid zone! the picture is not overdrawn: if a person could be set down amongst them, without having undergone the seasoning which these poor creatures get, during their regular approach to the tropics, *it would kill him.* I am certain that I could not live *half an hour* in such a place.

In the convict ships the hospital has been removed; formerly it was forward, where it should have remained; that point, I know, was settled in the most decided way, from very particular reports thereon, some years back; but, no, the round bow of the ship presented *too considerable a superficies of side* against which to build beds for convicts, so the sick bay is moved, as it were abreast the gun-room of a man of war, one half of which, fore and aft, is now taken for the hospital.

In conclusion, as to numbers, at least twice the number in the whole, is now embarked, both in convict and emigrant ships, that should be. The consequences, in point of disease, are frightful; and will, to a moral certainty, be productive of some scenes, ere long, which are dreadful to contemplate! The sooner the progress towards such fearful results is arrested the better; and it is to be hoped that they may be averted by some timely measures.

Your obedient servant,

MEDICO.

[Our correspondent is evidently desirous of seeing the system of our convict and emigrant ships established on the most approved plan; but as regards the former he does not seem to know that cleanliness in them is carried to as great an extent as in our men-of-war; the convicts being examined on deck every day, and their berths well cleaned, which the plan of stowing the hammocks on deck has much facilitated. With regard to the "sick bay," the bows of a ship is surely the worst place for invalids, and the midship part of her is surely the best place on many accounts for them. We must refer him to Dr. Wilson's recently published narrative of his voyage round the world, a work in which he will find much information on this subject. As regards the health of the convicts, we believe that, notwithstanding the great numbers taken out in each ship, the mortality on the voyage out, does not exceed 1½ man per cent.—ED. NAUT. MAG.]

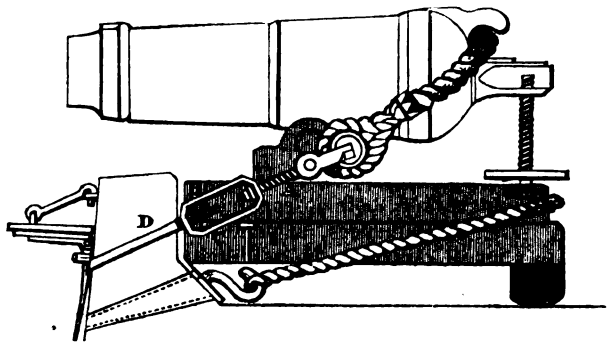
NON-RECOIL CARRONADES.

Mr. Editor,

ALLOW me, through the medium of your "True Blue" Magazine, and widely-circulated journal, (for I have myself in the course of the past year met with it at Naples, at Florence, and at Venice,) to notice a novel method of fitting the breechings of guns on the non-recoil principle, proposed, I believe, by Captain Mazzoleai, and recently adopted under the auspices of the Marquess Paulucci, admiral, and commander-in-chief of the Austro-Venetian Marine, which seems to be a great improvement on the old method of securing these guns:—

The chief objections to the usual mode of fitting were :— 1st, The exposed state of the breeching, which passed outside the ship, and was liable to be cut even by small-shot.

2dly. The difficulty of preventing the breeching from stretching at the third or fourth round, and thus either rendering the gun very insecure, or causing great delay in shortening it.



On reference to the diagram, it will be seen that these objections are done away with :—A stout breeching is shackled to a strong screw, A, which passes through a square shackle, BC, attached to a long tie-screw, D, passing through the ship's side ; a large nut on the end of these screws is easily turned by a hand lever, and will heave the breeching as taut as required : a preventer breeching passes round the carriage or bed of the gun, and is secured to long hooks bolted through the ship's side and water-way, thus rendering the gun perfectly secure.

I do not now enter into the argument as to the advantage or disadvantage of guns fitted on the non-recoil principle ; but premising that it is only intended for fast-sailing corvettes, or flush-decked vessels, I may simply mention the merits of this mode of fitting, as stated to me by officers who had seen it in practice for several months.

1st. The greater space on deck for working ship ; and the guns not so liable to be upset, or to be disabled by falling spars or rigging.

2dly. Much greater quickness of fire, combined with less fatigue to the men.

3dly. Neither sight nor elevating screw deranged by the shock of recoil.

4thly. The great saving of men, and consequent saving of life ; as a captain, sponger, and loader are amply sufficient to work the

gun; leaving an efficient body of sail-trimmers to work the ship without relaxing the fire.

I may add, that the guns are medium 32, or rather 36 pounders: the windage less than is usual with us: they are armed with percussion locks fitted obliquely, by which means the hammer is not driven back with force, as we have seen elsewhere:—the lower half port, it will be observed, slips down without trouble a foot below the lower sill of the port, thus affording a firm platform for the sponger to place his foot upon; and altogether forms a very complete armament for a fast-sailing corvette, for which alone it is intended.

Ever, Mr. Editor, your sincere well-wisher,
JOHN WASHINGTON, Commander, R.N.

MISCELLANEOUS INTELLIGENCE.

FRENCH WRECKERS.

LOSS OF THE VIOLET.—In our last number* we noticed a letter from the British Consul at Brest, stating that in the wreck of the Bellissima on the island of Saints, the conduct of the few inhabitants of the island to her crew, was most noble and praiseworthy, and well worthy of being pointed out as an example for others to follow. Lest our readers should be misled, and, in condemning the too-generally shameful conduct of our own countrymen on such occasions, should hold up the exertions of our French neighbours as worthy of imitation, we annex the following account of their behaviour at the wreck of the Violet in the bay of Trepasses, only a few miles to the eastward of the Saints, and are sorry to find that it forms a sad contrast with the example of the islanders, which we hope will not be forgotten by our maritime readers:—

"The brig Violet, of Hull, Daniel Calder, master, was on her voyage from Cadiz to Hull and Leith, laden with wine. On the morning of the 1st of December, I was at the house of M. Broquet, commissary of marines, attending to the repacking and reshipment of the cargo of the Bellissima, when an express arrived at two o'clock from the custom-house guard, to announce that a vessel, to all appearance English, was coming ashore in the Baie des Trepasses, (14 miles from this, on the coast opposite The Saints,) and requesting assistance to protect the property and lives of those that might reach the shore. The commissary was ill from over exertion at the last wreck, and, having levies of seamen for the French government to attend to, could not go, but ordered his syndic to the spot. The comptroller of customs having directed all the disposable douaniers to follow, went with the syndic and myself on horseback to the wreck, where we arrived at half-past five. Although we were but poorly armed, the comptroller having a sword, the syndic a stick, and myself a fowling-piece, our presence was of the greatest service.

"The vessel had gone to pieces in the night; the master and crew were drowned, with the exception of Jose Parcero, a Spaniard, who was an excellent swimmer. The strand presented a most shocking scene of plunder: groups of peasants were shouting and singing over butts of sherry, the heads of which they had beaten in; and five douaniers with rusty firelocks were sitting by a fire, having given up the fruitless task of driving the peasants away.

* This account was unavoidably reservgd from our last number.

"Our arrival changed the scene. We fired several shots over the heads of the plunderers, and, after some scuffles, succeeded in driving most of them to the farther end of the strand. Several were taken in the act of carrying off articles, but the presence of our little party amongst the casks being of more importance than keeping prisoners, they were let go, after making them tell each other's names, which, it is hoped, will be made examples of. Daylight appearing, crowds of peasants were seen descending the hills with sticks and hammers, to stave the casks, drink the wine, and steal the hoops. Seeing our small number, they recommenced plundering, and we had an arduous duty until half-past nine, when the detachment of douaniers from Audierne arrived. Other detachments afterwards coming, a regular service was established. About 190 butts and casks of sherry were collected, sentries placed, &c. &c.

"At 3 in the afternoon, there being about thirty douaniers and two gendarmes, I returned to Audierne, having made arrangements for the carriage of the property, to begin to-day, under an escort of gendarmes, which have been ordered from other points.

"From the report of the Spaniard, it appears that the vessel anchored in the bay, having fastened their chain cable round the foremast, and went to pieces at her anchors when the tide fell. The master and his men knew not how to swim; the cabin-boy knew how to swim, but was afraid to attempt when the Spaniard left the ship."

What a contrast between the conduct of these wreckers, and that of the humane and hospitable inhabitants of The Saints!

The Vessels left in the Ice.

H. M. S. Cove, under the command of Captain James Ross, sailed from Hull on the 6th of January. We understand that the Terror, now fitting out to follow her, under Commander Belcher, as stated in our last, is nearly completed in her hull, and will soon commence entering her men. The vessels mentioned in our last, with the exception of those lying in Home Bay, as we there stated, and the Dordon, have returned; and the following extract of a letter from Peterhead will give some account of their proceedings:—

"Sir,—I am happy to state that the Grenville Bay, another of the whalers that was beset in the middle ice, is now off here. Have seen Captain Taylor, who was on shore getting some fresh provisions and making arrangements for sending home those of her crew belonging to Orkney; he has also on board sixteen men, part of the crews of the lost ships, Dordon, Mary Frances, and Lee. He reports that he got clear 16th Dec., and that the Norfolk, of Berwick, got free three days previously, which vessel he expects is now in Orkney. He drifted down 69½ degrees Davis Straits, and was driven into Hudson Straits by the current on the north side, and was again driven out by the current on the south side, round Bullen's Island, as far as 90 degrees, on the Labrador coast, where he got clear; at the time when he was relieved, he was driving S. E., and at the rate of 20 miles a day; he has been driven upwards of 600 miles inclosed in the ice; he last saw the Lady Jane on the 15th of December, in lat 59 deg., about five or six miles to the S. W., up the Grenville Bay, surrounded at that time by a good deal of ice; when he last saw the Abram, she was in lat. 62, bearing E. S. E.

"The Grenville Bay had about a month's provisions in full allowance left; Captain Taylor got half of the provisions of the Dordon, and agreed to take on board half the crew, but a less portion came to his ship. The Abram got a share of the provisions of the Dordon, and Captain Taylor thinks she has on board, including part of the crews of the lost vessels, about 150 men. I found

it quite correct that the provisions of the Mary Frances were burnt along with the ship.

"The practice of setting fire to a ship, on being lost or abandoned, appears to be very improper; and surely the wilful destruction of provisions, if such custom exists, cannot be too severely reprobated, nor too soon put a stop to.

"Captain Taylor hopes that the Lady Jane and Abram would be liberated; but from the uncertain current, and the changing of ice, no accurate opinion could be formed how or when. I believe that the Grenville Bay has three fish, about 70 tons."

His Majesty's Packet, Star.

We are enabled at length to relieve the public anxiety as to the melancholy fate of His Majesty's packet Star, by publishing the following extract from a despatch received yesterday at the Admiralty from Mr. James Brown, master and acting commander of that vessel. It will be seen that Lieut. I. Binney, the commander, and 13 of the crew, have been lost. The despatch is dated at sea, 9th December, 1835:—

"On the 20th November, in lat. 45. 57. North, long. 38. 0. West, a heavy gale came on from south-west, which increased so as to oblige us to lay-to on the larboard tack until the 22d, when we were with our head to S. W., the wind varying from W. S. W. to N. W., with very heavy squalls of wind and hail. On this day we lost our gig from the quarter, with all our hammock nettings. On the 23d, the gale still increasing, with a tremendous cross sea, shortened sail to main trysail and fore storm-staysail. At 2 o'clock on the morning of the 24th a heavy sea struck the ship on the starboard beam, throwing her on her beam ends, and stove in all our sky and dead lights, washed overboard one seaman, and fractured the thigh of another. In about a minute she righted with the loss of fore-topsail-yard and tiller; shipped a spare one, which went immediately; shipped a third one, which also went; succeeded at length in securing the rudder with iron stanchions. At daylight observed a bark to windward, under the lee clew of main-topsail, with loss of foremast and bowsprit, standing to the S. W., the gale increasing to a severe hurricane. Ship this time under the main trysail, and no possibility of showing another stitch of canvass, as a new fore-storm-staysail had just blown out of the boltrope. Eleven a. m. lost sight of the vessel to windward, supposed to have foundered. At noon a tremendous sea struck the ship on the starboard beam, which threw her on her beam ends, with her tops in the water, dead lights a second time stove in, washed the Commander, Lieutenant I. Binney, and myself, with 11 seamen, overboard, I being the only person out of the number who regained the ship. Fortunately our watch was kept below, otherwise a greater sacrifice of life would have inevitably followed: the sea swept the ship from stem to stern-post, carrying every thing away to the covering boards, which in many places were ripped up, obliging us to fill up between the timbers with oakum and wedges, to prevent her going down, having nothing above the gunwale but the starboard cat-head, and anchor. In about two or three minutes the ship righted, with the loss of masts and bowsprit; found between five and six feet of water in her hold; employed pumping, securing the hatches, and clearing the wreck from the ship, the sea making a complete breach over us: found the rudder-head split, and shaking the stern-post so as to endanger starting it. On clearing the deck below, found the Commander's boy dead in the assistant-surgeon's cabin, under the wreck of bulkheads, &c. At 8 p. m. succeeded in securing the rudder with iron stanchions; the sea breaking over us so as to endanger the lives of the crew remaining, I deemed it necessary to

send them below, after securing the last hatch. On the morning of the 25th made an attempt to get a sail on the stump of the foremast, but could not succeed owing to a heavy sea still breaking over us; found she was not making much water, sent the crew below as before. All hands suffering severely, both officers and men, some from severe contusions, and others from scalds owing to the water being upset from the coppers; employed below trimming the ship with the few hands that were capable of exerting themselves, everything having settled to port. On the 26th, a little more moderate, found the mail considerably damaged; succeeded in getting a top-gallant-sail on the stump of the foremast, which enabled us to keep before the sea, as it was breaking over us so as to endanger the decks; fortunately the foremast went in the wake of the trusses, which enabled us to make sail on it, the driver boom and part of the gaff being the only spars left on board, the mainmast went by the wedges, mizen-mast four feet above deck, and bowsprit by the gammoning; at 4 p. m. this day spoke a ship, name unknown, which, owing to the heavy sea, could render us no assistance. Strong breezes still continuing from the northward, deemed it prudent to run to the southward. On the 27th examined the magazine, and found much powder damaged; also a tank of bread quite spoiled. With the driver-boom, as a spread-yard, we succeeded in setting a lower studding-sail as a square-sail; officers employed in drying the mail; people cleaning lower-deck cabin; furniture totally destroyed, and bulkhead more or less stove in. I am now making the best of my way for Antigua, which I expect to reach in about three weeks."—*Observer.*

The Advantages of Grenada as a Naval Station.

To the Editor of the Nautical Magazine.

Sir—As a resident of St. George's, the capital of this island, I take the liberty of requesting you will allow me, through the medium of your pages, to point out some of the advantages which its peculiar position, and its harbour, offer for the establishment of a naval station of Great Britain.

I may first mention, that the various quays and jetties by the harbour side, are held by private individuals under crown leases, and also that the shores of the harbour, as well indeed as those of the whole island, extending to three chains (198 feet) from high-water mark, are reserved to his majesty, and the former are merely held on lease from the crown. Therefore the shores are in fact crown property.

It is not very long ago that Sir Charles Shipley, (who was governor of this colony, I think, in 1814,) being fully impressed with the advantages of this island, addressed a letter to the Commander-in-chief of the station, when it was contemplated to remove the dock-yard of Antigua to The Saints; but it was found those islands were totally destitute of spring water, not even rivulets do they possess, nor any trees or pasturage, or even vegetables, and their defences are entirely destroyed.

Having stated thus much, I may now point out the advantages which Grenada enjoys. They are,

1. Good water in abundance.

2. A good harbour and a safe outer anchorage, where large convoys have been repeatedly collected. The depth and security of the harbour is such, that a French line-of-battle ship, the Zelee, was once hove down in it.

3. Its convenient position with respect to the other islands, to any of which vessels may easily run; and there has been no instance known of any vessel missing Grenada, while in running for Barbadoes they have missed that island frequently.

4. The defences of the harbour are well provided for by nature, and an act of the colonial government was passed, making provision for the expense of completing them by art.

5. The healthy nature of the climate.

6. The exemption which the island enjoys from those hurricanes from which Barbados and other West India islands suffer so severely. An instance of this occurred very recently. While the Spitfire steam vessel was disabled at Barbados, and would have been lost had not the skill of her Commander saved her, the Vestal was lying safe in our harbour, and nothing was known of the hurricane that was raging there with such violence.

As these advantages, which are so peculiarly desirable for a naval station, may not be generally known, I trust, Mr. Editor, you will give them publicity; and in doing so, you will not only confer a service on the country, but oblige your obedient servant,

St. George's, Nov. 1835. A PLANTER.

The following Extracts from the "ALBION," may interest some of our readers:—

STEAM COMMUNICATION WITH AMERICA.

Dr. Lardner then proceeded to observe, that one of the grandest projects which had ever occupied the human mind was at present in the progress of actual accomplishment. He meant, that of constructing a great highway for steam intercourse between New York and London, between the capital of the New World and that of the Old. Part of that highway was in the process of formation. It consisted of several stages; that of the railroad from London to Birmingham—that from Birmingham to Liverpool—and the steam intercourse with Dublin; but there was another stage, that from Dublin to Valentia, which had as yet hardly been thought of. Ireland was a country which, with all her political disadvantages, was blest by nature with a vast number of physical advantages, and, amongst the rest, he might reckon a vast number of excellent harbours, No country in the world could boast of so many fine and spacious ports, bays, and roadsteads. She had many harbours on her west coast which would serve admirably as stations for steam conveyance across the Atlantic; but Valentia had been selected as the extreme westerly point suitable for that purpose. It was a fine anchoring ground by an island of that name on the coast of Munster. The distance from Dublin to this point was under 200 miles, which might be traversed in about eight hours. The nearest point of the continent of North America to this point of Ireland was St. John's, in Newfoundland. The distance between the two was about 1900 miles—thence to Halifax, in Nova Scotia, there would be another run of 550 miles—and from that to New York would not exceed the admissible range; but touching at Halifax would be desirable for the sake of passengers. The only difficulty would be as to the run from Valentia to St. John's; and the voyage from Dublin to Bordeaux and back, a distance of between 1,600 and 1,700 miles with the same stock of coals, came very near this distance. It must be observed, that westerly winds blew almost all the year round across the Atlantic. They were produced by the trade winds, being the compensating cause that restored the balance which these served to destroy, according to that beautiful principle in nature, which always provides a remedy for any derangement in the deranging cause itself. As a last resource, however, should the distance between Valentia and St. John's prove too great, they might make the Azores a stage between. So that there remained no doubt of the practicability of establishing a steam intercourse with the United States. As to the project, however, which was announced in the newspapers, of making the

voyage directly from New York to Liverpool, it was, he had no hesitation in saying, perfectly chimerical, and they might as well talk of making a voyage from New York or Liverpool to the Moon. The vessels which would ultimately be found the best adapted for the voyage between this country and the United States would be those of 800 tons, which would carry machines of 200 horses' power, and would be able to stow 400 tons of coals. To supply a ten-horse power daily required an expenditure of a ton of coals; and consequently 200 horses' power would require 20 tons of coals daily; but if the vessel carried 400 tons of coals only, it would not be practicable to undertake a voyage which would require the whole of that quantity. They must make an allowance of 100 tons for contingencies. Thus, in reckoning the average length of the voyage which might be undertaken by such a vessel, we might safely calculate upon 300 tons of coals, which would be sufficient for fifteen days; and it might fairly be concluded, that any project which calculated upon making longer voyages than fifteen days without taking in a fresh supply of coals, in the present state of the steam-boat, must be considered chimerical. Now the average rate of speed of the Mediterranean packets was 170 miles per day; and the utmost limit of a steam voyage might be taken at 2550 miles; but even that could not be reckoned upon.—*Lecture on Steam Navigation.*

To the Editor of the Albion.

Sir,—In your paper of the 14th instant, there is an extract from a lecture delivered by Dr. Lardner on Steam Navigation, which contains some assertions upon Transatlantic Steam Navigation, which strike me as betraying an ignorance on that important subject, that I did not expect to find coupled with such a celebrated name. For any man to limit the application of steam power to navigation in the present day, in the face of the great extension of it within the last few years, is to me a proof, either that he has not studied the subject at all, or, having done so, has arrived at very opposite conclusions to those that most marine engineers of the day have adopted, and they have not yet, I believe, any idea of starting a steam-boat to the Moon, which, according to Dr. Lardner, would be as easily done as from any part of Great Britain to America.

If there is one feature more than another that particularly distinguishes steam navigation from the old system, it is its independence of winds and currents; and, whatever advantages a port on the West coast of Ireland may present to a sailing vessel, as a point of departure and arrival, no one practically acquainted with a steam vessel would ever think of stopping short at Valentia. It would be equivalent to the Liverpool and Manchester Railway taking their passengers and goods over the seas of Parr or Chat Moss, and there leaving them to make the best of their way to Liverpool or Manchester.

The project of making Valentia the port of arrival and departure is by no means new. A company at present exist who got an act of Parliament granting them extraordinary powers, in 1825; but, after procuring it, they made the notable discovery, that, though it was easy to get passengers from America to Valentia, to get passengers to and from London, Edinburgh, Glasgow, and Liverpool was no joke. So they laid upon their oars for the tenth part of a century, and in 1835 started afresh, backed up by a railway from London to Liverpool, the Post office packets to Dublin, the Valentia Railway; and from thence, not to the capital of the Western hemisphere, but to the capital of Newfoundland, "where sailors gang to fish for cod," but, certainly, where no passengers go, if they can help it. In short, to get to New York by this route involves, at least, four changes of conveyance; which may be pleasant enough to a man desirous of contrasting, at a railroad speed, the midland counties of England with the western counties of Ireland; but a family, I opine, would prefer stepping on board at Blackwall or the Prince's Pier, and

landing at New York in the centre of society, business, and communication; and yet the one is called "the grandest project that ever occupied the human mind," and the other, that grapples with the difficulty, that takes the bull by the horns, is chimerical. The world, then, has stood still since 1825. The "march" we hear so much about has been going on in every thing but steam navigation. Is it so? Let the Mersey, the Clyde, the Thames, the Baltic, the Bosphorus, the Mediterranean, the Red Sea, the Bay of Bengal, and the shores of Van Diemen Land answer. If we could, in 1825, go from Ireland to Newfoundland by steam, cannot we, with ten years' additional experience, make the voyage direct from Liverpool or London to New York?

By what process of reasoning Dr. Lardner has fixed the ultimate size of steam vessels for the Atlantic at 800 tons and 200 horse power does not appear; which is the more to be regretted, as it must be a peculiar one, from the size of vessels very little exceeding that of several in the coasting trade, and the power being much less; but I am not bound to take this for granted, particularly as all my experience has proved that we, as yet, have never had to complain of the size of the vessel, if the power has been proportionately increased: on the contrary, the Dublin boats have crept up from 250 tons to 5 and 600; and the Clyde, from 200 to 400 tons; and other lines in the same proportion. In reasoning, therefore, upon a line of steam communication between Great Britain and New York, I must reason from analogy, and, fortunately, Dr. Lardner gives me the data. The Leeds, it appears, makes the voyage to and from Bordeaux, a distance of about 1600 miles, with one supply of coals: the Leeds is, I believe, 420 tons, and 140 horse power, and her displacement between her light and load marks will be about 80 tons to one foot, or, perhaps, only 70. Now the distance from Liverpool or Portsmouth to New York is 3000 nautic, or 3500 statute miles; a little less to Liverpool. Suppose the Leeds to be trebled in capacity, so that her displacement should exceed 200 tons per foot draught; it is not necessary to treble her power, as double power propels more than double bulk; but allow her 300 horse power—her light draught of water would be about eleven feet with her machinery on board, and, with 800 tons of dead weight on board, about fifteen. I take the consumption of coals at 30 tons per day, and a mean speed of 10 miles per hour, and at an expenditure of 525 tons of common coal, or 420, of Llangemuch, I land my passengers in New York, Portsmouth, or Liverpool, in something less than fifteen days. I have not allowed any thing in this calculation for the saving of fuel that would accrue in these large engines by working them expansively, but have taken the consumption at 9½ lbs per horse per hour, and, with common coal, I would have a surplus of 275 tons dead weight for passengers and goods.

One objection will, I am aware, be made, viz., that my average speed is too great, and, if I admitted that the "beau ideal" of a steam vessel was embodied in one of his Majesty's Mediterranean steam packets, the objection would be fatal; but what is the fact? (no less wonderful than true,) the average speed of private vessels far exceeds them; and to prove that the average speed of ten miles per hour is not "chimerical," I may state, that the average speed of the Dundee and Perth, in all weathers, winter and summer, fair or foul, exceeds eleven miles per hour; that the average speed of the Monarch is ten miles and a half per hour; and that the Medea, steam frigate, averaged more than ten miles per hour on her voyage to Malta. Now I am of opinion, that the Dundee, Perth, Monarch, and Medea are to be, and will be beat, but not by vessels of 800 tons and two hundred horse power.

I hope, Mr. Editor, I have proved that it is easier to go from Portsmouth or Liverpool to New York than to the Moon; that it is more convenient to go direct than through the first "gem of the sea;" and the last, though not the

least consideration, that if we wish to go at all by steam, we had better not wait for the Valentia Railway,—I remain, Mr. Editor, very respectfully,

CHIMERA.

A Court-martial was held on board H. M. S. Howe, on Wednesday, December 30th, at Sheerness, on Commander James Hope of H. M. sloop Racer, for running that vessel on shore, on the coast of Labrador, on the 17th of September last. It appeared in evidence, that Commander Hope had been detached by the Commander-in-chief, Sir George Cockburn, to visit the various fishing stations on the coasts of Newfoundland and Labrador, for the purposes of collecting information as to the present state of the fisheries, and to afford protection where needed. In the execution of this service, he had occasion to enter "Ivoctvoke," or Esquimaux bay, and having obtained a pilot at Tub Harbour, on the southern side of the entrance, was proceeding towards the anchorage at a rate varying from six to eight knots per hour. A leadsman was kept in the chains from noon until 5 P.M., during which time no bottom was obtained, on account of the depth of water, combined with the velocity of the vessel. At the last mentioned hour, the lead, from the above causes, added to misplaced confidence in an ignorant pilot, was inadvertently discontinued, and the vessel struck at 6. 30. P. M. when within a few miles of her destination, on a bank of the existence of which the pilot had no knowledge whatever: she remained on the bank for several days, when, from the united and most praiseworthy exertions of the officers and crew remaining on board, (a portion having been detached in the largest of her own boats, to other stations prior to the disaster,) she was at last got off, and restored to the country, but with considerable damage to her false keel and main keel, and some injury to her forefoot.

The court sat from ten in the morning until seven in the evening, and, after hearing a verbal, but very able defence from Commander Hope, determined that he should be "admonished" on the ground that the lead had not been kept going for 1½ hour before the vessel struck, this omission being a violation of the naval printed instructions, which direct that the lead shall be kept going, notwithstanding the presence of a pilot.

The Court was composed of Vice-Admiral the Hon. C. E. Fleeming, Commander-in-chief in the Medway, &c.; President, Captain Sir J. A. Gordon, H. M. Yacht; Captain A. Ellice, H. M. S. Howe; Commander W. Hewett, H. M. surveying vessel Fairy; Commander R. Cragie, H. M. sloop Scout.

REWARD OF HEROISM.—The "Movement des Ports," of the 25th and 26th of December, has the following:—"The King of England has decreed a gold medal to Mr. Charles, Minister of the Isle of Saintes, as a reward for the courageous devotedness shown by him on the occasion of the wreck of the ship Belissima, in October last. He also caused to be forwarded to Mr. Boquet, Commissary of this division, a gold snuff-box, to reward him for the care he bestowed on the shipwrecked crew, and for the zeal and activity he displayed in saving the cargo from the wreck of the vessel. The English Admiralty has further charged M. Perrier, his Britannic Majesty's Consul, to send to Mr. Charles from them, a gold watch; to each of the two persons named Guelcher and Milliner, 250 francs, which the Minister has been requested to distribute. These rewards, so well deserved, will produce a far more satisfactory effect in the country, when contrasted with the punishment which will no doubt be inflicted on the abominable plunderers of the last vessel which was lost in the Bay of Trepasses."

We have copied the foregoing from the Hampshire Advertiser, and may add to it, that we understand the Admiralty has presented an elegant sextant to the commander of the French brig Suffrein, for the prompt assistance rendered by him to H. M. S. Pique on her late perilous voyage across the Atlantic.

Naval Register.

[For the names of the various Captains and Commanders, see former numbers.]

THE ROYAL NAVY IN COMMISSION—JANUARY 21ST, 1835.

At Home.

PORTSMOUTH.

Admiral, Sir Thomas Williams, G.C.B.—*Flag-Ship*, BRITANNIA, 120.

PLYMOUTH.

Admiral, Sir William Hargood, G.C.B., G.C.H.—*Flag-Ship*, ROYAL ADELAIDE, 104.

NORE.

Vice-Admiral, Hon. C. E. Fleeming.—*Flag-Ship*, HOWE, 120.

ASTREA—Falmouth.
BRITANNIA, 120—Portsmouth.
EXCELLENT, late BOYNE—Portsmouth, for the practice of naval gunnery.
HARPY, 10—Plymouth.
HOWE 120—Sheerness.
OCEAN, 80—Sheerness.
PORTSMOUTH, *Yacht*—Portsmouth.
PRINCE REGENT *Yacht*—Deptford.
QUAIL—Portsmouth station.
ROYAL GEORGE *Yacht*—Portsmouth.
ROYAL SOVEREIGN *Yacht*—Pembroke.
ROYAL ADELAIDE, 104—Plymouth.
SCOUT—Sheerness, Com. R. Craigie.
SEAFLOWER, *Cutter*, 4 — Portsmouth station.
SPEEDY, *Cutter*—Portsmouth station.
TERROR, Polar Expedition, Com. E. Belcher, Chatham.
WILLIAM & MARY, *Yacht*—Woolwich.

Abroad.

LISBON STATION.

Rear-Admiral, W. H. Gage.—*Flag-Ship*, HASTINGS, 74.

CAMELEON, 10 — 19th December, in the Tagus.
CASTOR, 36—North coast of Spain.
CLIO, 16—Coast of Catalonia.
HASTINGS, 74 — In the Tagus 19th December.
MAGICIENNE, 26 — 26th December, at Cadiz.
PEARL, 20 — 19th December in the Tagus.
PHŒNIX—St. V.— North coast of Spain. 3d Oct. left Portsmouth.
RINGDOVE, 16—Oct. north coast of Spain.
ROYALIST, 10 — Oct. north coast of Spain.
RUSSELL, 74—19th Dec. left Cadiz for Corunna.
SARACEN, 10—Oct. north coast of Spain.
STAG, 46—24th Oct. arr. at Lisbon from the Gambia.
TWEED, 20—19th Dec. in the Tagus.
VIPER, 6—19th Dec. in the Tagus.
WATERWITCH, 10—See African station.

MEDITERRANEAN STATION.

Vice-Admiral, Sir Josias Rowley, Bart., G.C.B.—*Flag-Ship*, CALEDONIA, 120.

BARHAM, 50—17th Dec. at Malta.
CALEDONIA, 120—17th December at Malta.
CANOPUS, 84—17th Dec. at Malta.
CEYLON, 2—Malta.
CHILDERS, 16—8th Oct. at Cadiz.
COLUMBINE, 18—16th Oct. arrived at Malta.
EDINBURGH, 74—17th Dec. at Malta.
ENDYMION, 50—8th Oct. at Cadiz.
FAVORITE, 18—Dec. at Smyrna.
JASEUR, 13 — 8th Oct. on coast of Spain.
MALABAR, 74—26th Dec. at Cadiz.
MEDEA, 6 — In company with the Portland.

ORESTES, 18—17th Dec. at Malta.
PORTLAND, 52 — In attendance on the King of Bavaria.
PLUTO, St. V.—17th Dec. at Malta.
REVENGE, 78—17th Dec. at Malta.
RODNEY, 92—27th December arrived at Barcelona.
SAPPHIRE, 28—Dec. at Corfu.
THUNDERER, 84—17th December at Malta.
TRIBUNE, 24—8th Oct. at Cadiz.
TYNE, 28—8th Oct. on coast of Spain.
VERNON, 50—17th Dec. at Malta.
VOLAGE, 28—30th Oct. arr. at Malta from Constantinople; remained 17th of December.

CAPE AND AFRICAN STATION.

Rear-Admiral, P. Campbell, C.B.—*Flag-Ship*, THALIA, 46.

BRITOMART, 10—30th Aug. at Ascension.
BUZZARD, 10—June, Bight of Benin.
CHARYBDIS, 3 — 27th Aug. arrived at Fernando Po.
CURLEW—Aug. at Sierra Leone.
FAIR ROSAMOND, *Schooner*—June in Bight of Benin.
FORESTER — 21st June off Prince's Island.
GRIFFON, 3—July in the Gambia.
LEVERET—24th Sept. sailed from Plymouth for Gambia and Cape.
LYNX, 10—24th Nov. at Ascension.
PELICAN—4th July arrived at Cape from Ascension.
PYLADES, 18—30th Oct. arrived at the Gambia.
ROLLA, 10—24th Nov. at Ascension.
THALIA, 46—9th Sept. arrived at the Cape.
TRINCULO, 18 — June in Bight of Benin.
WATERWITCH—16th Dec. sailed for coast of Africa.

EAST INDIA STATION.

Rear-Admiral, Hon. Sir T. B. Capel. *Flag-Ship*, WINCHESTER, 52.

ANDROMACHE, 28—15th July arrived at Mauritius from Madras.
HYACINTH, 18—23d June at Sydney.
RALEIGH, 16—17th June at Bombay.
RATTLESNAKE, 28 — 2d Aug. left Bombay on a cruize.
ROSE, 18—18th April at Singapore, from Malacca.
VICTOR, 18—7th June at Cape; 11th sailed for Mauritius.
WINCHESTER, 52—21st April sailed for Bombay.
WOLF, 18—5th Feb. sailed from Algoa Bay for India.
ZEBRA, 16—12th March sailed for Trincomalee.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral The Right Hon. Sir G. Cockburn, G.C.B. *Flag-Ship*, PRESIDENT, 52.

BELVIDERA, 42—7th Oct. arr. at Barbados from Bermuda; 11th Nov. remained.
CHAMPION, 18 — 7th Nov. left Jamaica for Nassau.
COLUMBIA, St.V.—11th Nov. at Barbados.
COMUS, 18 — 22nd Nov. arrived at Jamaica from Carthagena.
CRUIZER, 18—22d Sept. arrived at Barbados from Para; 28th Nov. at Bermuda.
DEE, St.V. 4—22d Oct. at Jamaica.
DROMEDARY—Bermuda.
FLAMER, St.V.—Running with mails between Jamaica and Barbados.
FORTE, 44—8th Nov. at Jamaica.
GANNET, 18—14th Oct. at Honduras.
LARNE, 18—29th July at Barbados.
MAGNIFICENT, 4—Port Royal.
METEOR, St. V.—4th Oct. arrived at Barbados.
NIMROD, 20 — 25th Dec. arrived at Madeira, on her way to the West Indies.
PICKLE, 5—27th Oct. left Jamaica for Chagres.
PIKE, 12—26th Nov. arrived at Jamaica from Maracaybo.
PINCHER, 5—Tender to flag-ship, 20th Sept. left Jamaica for Nassau.
PRESIDENT, 52 — Vice-Admiral the Right Hon. Sir Geo. Cockburn, G.C.B., 28th Nov. at Bermuda.
RACER, 16—21st December sailed for Sheerness, to pay off.

RACEHORSE, 18—23d Sept. arrived at Maranham from Para.

RAINBOW, 28—17th Nov. sailed from Jamaica for Bermuda.

SAVAGE, 10—11th Nov. at Bermuda.

SCYLLA, 18—15th November arrived at Jamaica from Havana. To sail 16th for Carthagena.

SERPENT, 16—11th Oct. left Halifax for Newfoundland.

SKIPJACK, 5—18th Nov. left Jamaica for Chagres.

SNAKE—9th Nov. arr. at Spithead and sailed for Port Royal.

SPITFIRE, St. V.— running between Jamaica and Barbados.

VESTAL, 26—14th January arrived at Sheerness.

WASP, 18—7th Nov. arr. at Jamaica from Nassau.

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hamond, K.C.B. *Flag-Ship*, DUBLIN, 50. 2d June.

ACTÆON, 28—1st Nov. at Pernambuco.

BASILISK—20th Aug. arrived at Valparaiso, from Rio, by the Strait of Magellan.

BLONDE, 46—4th June at Callao from Valparaiso.

CLEOPATRA, 26—29th Nov. left Portsmouth for Rio Janeiro.

COCKATRICE, 6—Running between Rio Janeiro and Buenos Ayres.

DUBLIN, 50—30th Aug. at RioJaneiro.

HARRIER—19th Nov. left Spithead for South America.

HORNET, 6—Running between Monte Video and Rio Janeiro.

NORTH STAR, 28—3d September at Valparaiso.

RAPID, 10—6th July left Rio.

ROVER, 16—14th October sailed for Pacific from Rio.

SATELLITE, 18—Ordered home; 18th June at Callao.

SPARROWHAWK, 18—25th July at Valparaiso.

TALBOT, 28—18th September arrived at Buenos Ayres.

WANDERER, 16—11th Nov. arrived at Madeira; 14th sailed for Rio, thence for New York, and, finally, for West Indies.

TROOP SHIPS.

ATHOL, *Troop Ship*—9th Sept. arrived at Plymouth from Cork.

BUFFALO, *Store Ship*—Portsmouth.

JUPITER, *Troop Ship*—3d Oct. sailed from Spithead, with Lord Auckland and suite, for India; 13th Oct. arrived at Madeira; 17th sailed.

ROMNEY, *Troop Ship*— 18th Aug. arrived at the Cape.

STEAM VESSELS.

AFRICAN—Packet Station.

ALBAN—Woolwich, refitting; 16th Jan. returned from Mediterranean.

BLAZER—Woolwich, ordinary.

COLUMBIA—See West Indies.

CARRON—Woolwich, ordinary.

COMET—Woolwich, refitting.

CONFIANCE, 2—Running with mails between Malta and Corfu.

DEE, 4—See North American Station.

ECHO—Woolwich, Ordinary.

FIREBRAND—City Canal, fitting new boilers.

FIREFLY—Woolwich. To pay off, 23d January.

FLAMER, 6—See West India Station.

HERMES—See Packets.

LIGHTNING—Woolwich, ready for sea.

MEDEA, 6—See Mediterranean Station.

MESSENGER, 1—25th Oct. Woolwich, ready for sea.

METEOR—See West India Station.

PHŒNIX—See Lisbon Station.

PLUTO—Mediterranean.

RHADAMANTHUS—Woolwich. Ordinary.

SALAMANDER — Woolwich. Ordinary, complete.

SPITFIRE, 6—Woolwich basin.

TARTARUS—Woolwich, refitting.

EXPRESS, SWIFT } Sailing Packets, fitting.

SURVEYING VESSELS AT HOME AND ABROAD.

ÆTNA, 6—18th Dec. sailed for the survey of the Gold Coast.

BEACON—Archipelago.

BEAGLE, 10—Coasts of Patagonia and Chili.

FAIRY, 10—Woolwich.

GULNARE, Hired Schooner—Gulf of St. Lawrence.

LARK—15th Nov. sailed from Portsmouth for West Indies.

MASTIFF, 6—Archipelago.
RAVEN—18th Dec. sailed with Ætna.
SULPHUR—22d Dec. sailed for Pacific.
THUNDER—28th Nov. at Bermuda.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; Assistants, Lieuts. J. Harding, G. A. Fraser.—Coast of Ireland.

Lieutenants, M. A. Slater; H. C. Otter.—East Coast of Scotland.

Lieutenants, W. L. Sheringham; A. Kortright.—Cardigan Bay.

Lieutenant C. G. Robinson.—North Coast of Wales.

COMMISSIONED.

SCOUT, 10—Sheerness, 15th Dec.
TERROR, Polar Ship—Chatham, Jan.
MELVILLE, 78—Portsmouth.

APPOINTMENTS.

PROMOTIONS.

CAPTAINS—P. M'Quhae, J. Burney, James Morgan, W. Hillyar, H. J. Codrington.

COMMANDERS—Hon. B. C. F. P. Cary, J. Grant, J. M. Bate.

LIEUTENANTS—E. Codd, G. A. Seymour, E. Pipon, G. Sankey, J. C. Prevost, H. S. Hunt, E. Ommaney, G. Ayscough.

SURGEON—J. Robinson.

APPOINTMENTS.

ÆTNA, Surv. V.—*Vol. 1st Class*, F. Marryat, G. W. Towsey.

ALERT, 10—*Lieut. Com.* W. Norrington.

BRITANNIA, 120—*Assist. Surg.* J. Lardner.

CRUIZER, 16—*Com.* W. A. Willis, (*act.*); *Pur.* E. Thorne.

COVE, - —*Capt.* J. C. Ross; *Lieuts.* F. R. M. Crozier, E. Ommaney, R. Inman; *Surg.* C. H. Fuller; *Assist. Surg.* C. Priaulx; *Sec. Mast.* H. Mapleton.

CALEDONIA, 120—*Lieut.* E. Legard; *Sec. Mast.* James Penn.

COAST GUARD—*Lieut.* J. Richards.

ENDYMION, 50—*Mast.* J. C. Giles.

EXCELLENT—*Mate*, H. Aimsley; *Mid.* E. Crouch; *Coll. Mate*, F. G. Leigh.

HARRIER, 18—*Coll. Mid.* L. G. Heath.

HASTINGS, 74—*Lieut.* G. O. Hayes.

JASEUR, 16—*Lieut.* J. Russell.

LEVERET, 10—*Assist. Surg.* T. Bellett.

MELVILLE, ——*Captain*, P. Douglas; *Com.* G. A. Elliott; *Lieuts.* W. H. Molyneux, T. R. Sulivan, H. Schomberg, R. Harris; *Master*, J. M'Donald; *Purser*, E. O. Maley; *Chaplain*, A. Fielding; *Sec. Mast.* H. Jeffery; *Assist. Surg.* George Doak; *Schoolmr.* C. J. Tyers; *Mids.* H. E. S. Winthorp, D. W. F. M'Leod, L. Maitland, E. Sympson, J. C. Aldridge, E. M. Mathews, A. Wylly.

PRESIDENT, 52—*Lieuts.* J. W. Tarton, G. A. Seymour.

RAINBOW, 28—*Lieut.* J. Ayscough.

RANGER, Packet—*Mast. Assist.* S. Murray.

RALEIGH, 16—*Purser* (*act.*) J. Knott.

RAVEN, Cutter—*Lieut. Com.* G. A. Bedford; *Mate*, B. Young; *Mid.* F. Price; *Assist. Surgeon*, J. Barrow.

RODNEY, 92—*Lieut.* J. T. Caldwell; *Mate*, J. C. S. Field.

RECOVERY, Conv. Ship—*Surgeon*, A. Neil.

ROYAL GEORGE—*Mate*, J. C. Clifford.

SCOUT, 18—*Com.* R. Craigie; *Lieuts.* T. F. Birch, C. H. B. Acland; *Mate*, T. H. Christian; *Purser*, E. Rowe.

SEAFLOWER, 4—*Mate*, H. N. Mottley.

SNAKE, 16—*Clerk*, W. Bradley.

SPEEDY, 8—*Lieut. Com.* J. Douglas.

STARLING, Cutter—*Lieut.* H. Kellet; *Assist. Surg.* O. Goodridge; *Clerk*, C. Fielon.

SULPHUR, 8, Surv. V.—*Lieut.* W. J. Collins; *Coll. Vol.* E. Nicholls.

THALIA, 46—*Lieuts.* G. Fishbourne, H. Coryton.

TWEED, 20—*Lieut.* J. M. Mottley; *Assist. Surg.* J. Nutt.

VOLAGE, 28—*Assist. Surg.* R. R. Risk.

VERNON—*Lieut.* J. R. Mends.

Start Point Light-House.—This elegant tower is now finished; the lights, which are to be on a new principle, we understand, will be of the most brilliant description, and it only waits for the Light Apparatus, to its being exhibited. The tower contains eight apartments, each 18 feet in diameter, and 10½ feet high; the total height, including the lantern, is 110 feet. All the floors are formed of York stone landings, and the staircase of granite. Outside the lantern is a projecting castellated parapet, which, with the whole of the exterior of the building, is of granite, very neatly worked, altogether presenting a structure of great durability and neatness, and reflecting much credit on both the engineer and contractor.—*Plymouth Paper.*

VESSEL PROPELLED BY THE FALL OF WATER.—We understand that experiments have been made by Mr. W. Busk to ascertain how far the fall of water may be made subservient to the propulsion of vessels. The principle, he states, is that of unbalanced pressure, the same which is recognized in hydraulics as giving motion to Bartlett's mill, a machine which is well known to those who have attended hydraulic experiments. In one experiment he attained a rate of two miles, and in a subsequent one a rate of three miles, per hour.

Births.

On the 27th Dec., in Caroline-place, Stonehouse, the lady of B. Dyer, Esq., Purser, Royal Navy, of a son.

On Thursday the 7th Jan., the lady of Lieut. Morris, R.N., of Pitts Deep Station, of a son.

In Green-street, Grosvenor-square, the lady of the Hon. Capt. Henniker, R.N., of a son.

At Portland Terrace, Stoke, near Devonport, on the last day of the year, the lady of John Grant, Esq., Purser of H.M.S. Harrier, of a son.

The lady of N. B. Lash, Esq., Purser, R.N., of a daughter.

In Hobart-street, Stonehouse, the lady of Mr. J. Chimmo, Purser, R.N., of a daughter.

Marriages.

At Hacheston, Suffolk, Captain the Hon. H. J. Rous, R.N., brother of the Earl of Stradbroke, to Sophia, daughter of the late J. Ramsay Cuthbert, Esq., of Grosvenor-square.

At All Souls', Marylebone, Lieut. J. C. Grave, R. N., to Mary, widow of the late J. Treacher, Esq. of Chiselhurst, Kent.

Deaths.

At Kingston, Mr. I. T. Dormer, late Master of H. M. S. Rainbow, who was invalided home from that ship, after labouring under the effects of two strokes of the sun, which he was seized with while serving in the West Indies. He arrived at Spithead in the Athol, on the 8th Feb. last, since which, till the time of his decease, he continued to labour under the painful effects of the attack. The deceased is greatly regretted.

In Scotland, on the 5th instant, Sir James Dunbar, Bart., of Boath, Captain, R.N.

On the 9th of October, at the Island of Ascension, deeply lamented and regretted, Thomas Mitchell, Esq., Surgeon, R.N., who was consigned to the grave with military honours, attended by the whole of the garrison, to whom he was much endeared.

At his residence, Stoke-road, near Gosport, on the 24th ult., Mr. William Balliston, Master, R.N. (1799), leaving a widow and six children to deplore their irreparable loss. He was constantly and actively employed during the war, and has since served in H.M. ships Albion and Melville, and was always highly respected as a good officer; and, as a friend and messmate, esteemed by all who knew him.

At Weymouth, from a paralytic seizure, Captain S. B. Deecker, R. N., aged 64.

At Hans Place, Chelsea, Capt. James Anderson, R.N., aged 76.

On the 6th of December, on his passage from London to Leith, on board the Royal William steamer, in his 61st year, and deeply lamented by a numerous circle of friends, Captain James Black, of the Royal Navy, Companion of the Bath, and Knight of the order of Maria Theresa.

THE EUPHRATES EXPEDITION.—We have accounts from the Euphrates expedition to the 6th of October, at which date Col. Chesney was just recovering from a severe fever; the larger steamer was afloat, and it was expected would be on her way towards Bussorah in a few more days. She was launched on the 26th of September, broadside on, from a height of 23 feet, at an angle of 27 degrees, along three slips; and went off in good style, with the Turkish, Arab, and English flags flying, amidst the firing of guns and rockets, and to the astonishment of the natives to see iron float. Col. Chesney had again met with unexpected difficulties on the part of the authorities; but, according to every expectation, he hoped to get both the steamers ready. It was his determination to proceed, however, with one only, as soon as it should be completed. Lieut. Lynch was just returned from a mission to the Arabs. He was sent expressly to counteract the intrigues set on foot to embarrass the expedition, and according to all appearances, had been very successful.—*Malta Gazette.*

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

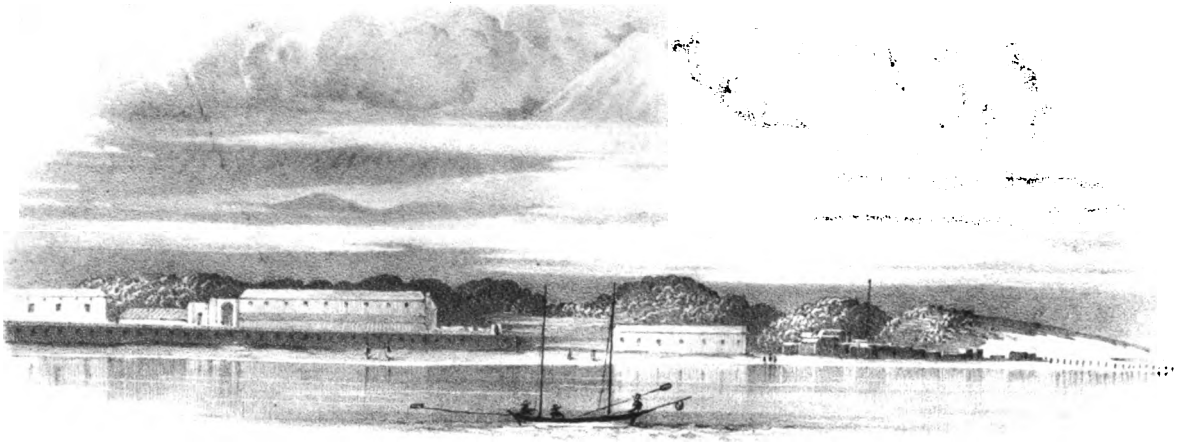
DECEMBER, 1835.

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.	29·38	29·40	45	50	41	51	S.	S.	3	5	B.	Bc.
2	W.	29·48	29·56	45	47	42	48	S.W.	S.W.	2	2	B.	Bc.
3	Th.	29·71	29·69	45	50	40	50	S.	S.	5	5	O.	Bcp (3 (4)
4	F.	29·73	29·79	42	46	40	46	S.W.	S.W.	3	3	Bcp (1)	Bc.
5	S.	30·20	30·22	39	45	35	46	W.	W.	3	3	O.	Bcm.
6	Su.	30·18	30·15	40	43	38	45	S.	S.E.	2	2	Bm.	F.
7	M.	30·15	30·13	38	40	35	41	E.	E.	2	2	Og.	O.
8	Tu.	30·08	29·99	36	38	34	40	S.W.	S.W.	2	2	Og.	Ogr 3) (4)
9	W.	29·75	29·88	40	41	38	42	N.W.	N.	6	7	Or (1)	Bcp (3)
10	Th.	30·35	30·37	31	29	28	31	N.E.	N.	3	3	Ops 2)	B.
11	F.	30·23	30·24	24	29	22	30	S.E.	S.E.	2	4	B.	B.
12	S.	30 27	30·25	30	36	22	38	S.W.	S.W.	3	3	O.	O.
13	Su.	30·32	30·32	34	38	30	40	S.W.	S.W.	2	2	B.	Bm.
14	M.	30·36	30·34	38	40	31	41	S.W.	S.W.	1	1	Og.	Og.
15	Tu.	30·35	30·34	37	38	36	39	S.	S.W.	1	1	Og.	Ogf.
16	W.	30·36	30·35	38	40	33	41	S.W.	S.W.	1	1	Og f.	Ogf.
17	Th.	30·35	30·31	34	38	32	39	S.W.	S.W.	1	1	Of.	Bcf.
18	F.	30·07	29·99	42	41	37	45	N.W.	N.W.	5	6	Bcmq.	Qp (3 (4
19	S.	29·96	29·92	33	37	32	38	N.	N.	4	6	Bmq.	Bcq.
20	Su.	29·96	29·98	31	33	30	34	N.E.	N.E.	5	5	Os (2)	Os (3)
21	M.	30·13	30·15	30	31	26	32	N.E.	N.E.	6	5	O.	B
22	Tu.	30·35	30·41	26	33	23	34	N.E.	N.E.	3	3	B.	B.
23	W.	30·55	30·53	23	28	22	28	S.W.	W.	1	1	Bf.	Ogf.
24	Th.	30·46	30·41	27	28	26	29	S.W.	S.W.	1	1	F.	F.
25	F.	30 39	30·38	22	23	21	25	S.W.	S.W.	1	1	F.	F.
26	S.	30·37	30·35	21	24	20	24	S.W.	S.W.	1	1	F.	Fc.
27	Su.	30·29	30·26	32	35	26	36	S.W.	S.W.	2	3	O.	Bcm.
28	M.	30·12	30·08	40	46	36	46	S.W.	S.W.	6	7	O.	Od (4)
29	Tu.	30·22	30·34	37	41	35	41	S.W.	N.W.	4	4	O.	O.
30	W.	30·20	30·18	40	45	38	46	N.W.	N.E.	3	4	O.	Opd 3)
31	Th.	30·33	30·31	29	31	28	31	N.W.	N.W.	2	2	Of.	Of.

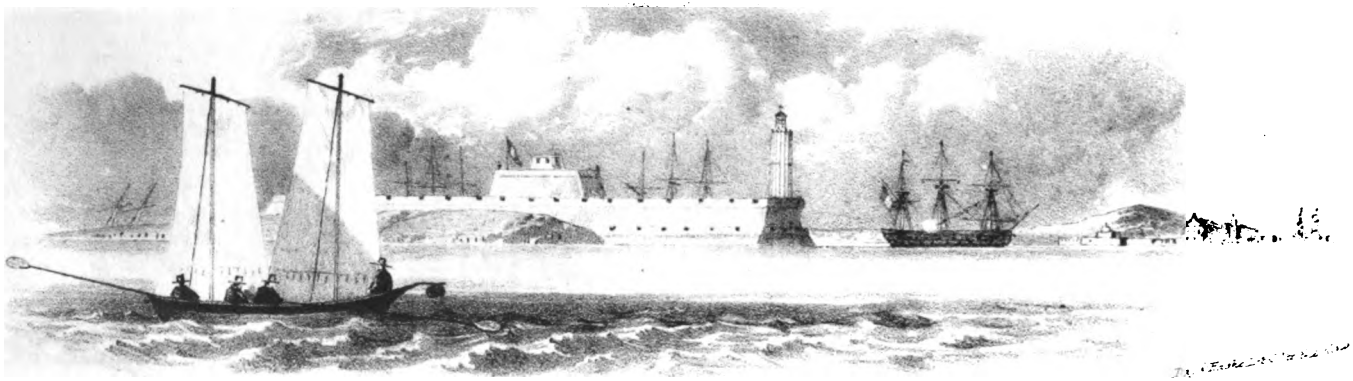
DECEMBER—Mean height of Barometer=30·148 inches; Mean Temperature=35·1 degrees; Depth of Rain fallen=0·40 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.



PEAK OF ORIZABA W b S. 34 leagues.



SAN JUAN de ULLOA, Vera Cruz Lighthouse.

ORIGINAL PAPERS.

FEBRUARY, 1836.

NEW LIGHTS ON THE COAST OF FRANCE.

Hydrographic-Office, Admiralty, 11th Jan. 1836.

NAVIGATORS are hereby informed, that since the 1st of January, Four New Fixed Lights are exhibited every night at the following places on the Coast of France, namely—

1st. The Point de Berck, in the department of the Pas de Calais.

2nd. On the Mole of the Port de Palais in Belle Isle, department of Morbihan.

3rd. On Hædic Isle, in the same department.

4th. On the Mole of Saint Nazaire, in the department of the Loire Inferieure.

The following particulars will describe the position and character of each of these lights:—

Provisional Light of the Point de Berck. On the point called the Haut Banc de Berck, the northern shore of the mouth of the river Authie, in lat. 50° 23′ 50″ N. and long. 1° 33′ 32″ E. of Greenwich. This light being elevated fifty-six feet (English) above the level of the sea, at high-water of equinoctial springs, may be seen at the distance of six marine miles.

The Light of the Port de Palais, in Belle Isle. On the head of the great mole, and on the left of the entrance to the port, in latitude 47° 20′ 53″ N. and long. 3° 9′ 7″ W. of Greenwich. This little light being elevated sixteen feet (English) above the level of high-water of equinoctial springs, may be seen in clear weather at the distance of three marine miles.

The Light on Hædic Isle, at 301 fathoms (English) west of the eastern point of the Isle Hædic, in latitude 47° 20′ 32″ N. and long. 2° 52′ 00″ W. of Greenwich. This light being elevated eighty-five feet (English) above the level of high-water of equinoctial springs, may be seen in fine weather at the distance of nine marine miles.

Light of Saint Nazaire, on the head of the new Mole of Saint Nazaire, and on the northern shore of the mouth of the Loire, in latitude 47° 16′ 17″ S. and long. 2° 11′ 44″ W. of Greenwich. This light being elevated twenty-six feet (English) above the level of high-water of equinoctial springs, may be seen in fine weather at the distance of six marine miles. It has been substituted for the reflecting light established two years ago on the new mole.

An advertisement of the Mayor of Grand-Camp gives notice to navigators, that from the 15th of February next, during every night, a fixed light, visible at the distance of six miles, will be shewn at the port of Grand-Camp.

Dangerous Bank off the North-East part of I. Rottee, *in the Strait of Rottee, awash with the surface.*

The following extract from the Remarks of Captain Laws, R.N., lately commanding H. M. ship Satellite, on the East India station, will serve as a caution to navigators. We may also add, that Captain Laws, whose experience in the Indian seas entitles his opinion to the utmost attention, recommends ships on their passage to India from Torres Strait, to make the high land of Timor as soon as possible, and run along the island, in preference to keeping to the southward in a sea which is yet unexplored, and full of dangers:—

"September 16, 1828.—Having had light easterly airs, and a westerly current of about twenty-five miles per day, at daylight made the south-west part of Timor, and soon afterwards saw the high land of Rottee bearing W. ½ S. Hauled up for the straits, and when the easternmost island off the north end of Rottee bore W. ½ S. we suddenly came upon a bed of sunken rocks, with five fathoms and a quarter on them; the rocks plainly visible under the bottom of the ship, with the appearance of shoaler water to the westward. Hauling immediately up north, the next cast we had was six fathoms and a half; and at a cable's length farther to the northward had no bottom with sixty fathoms. These rocks lie about four miles from the nearest part of the island, off the north-east end of Rottee, a hummock on the centre of which, bore from them W. ½ S., and the south-west point of Timor, forming the eastern point of the Streets of Semao, N. ½ E. They lie considerably outside the track on Captain Flinder's chart, where he has placed thirty-seven fathoms, which makes it appear that there is deep water all round them. It being nearly high-water when we passed over them, with the appearance of shoaler water to the westward, these rocks might prove dangerous to a large ship in bad weather, especially as they lie in the usual track of ships bound to India by the way of Torres Straits. Immediately after we passed this bed of rocks, a strong breeze sprung up from the south-east, which prevented our obtaining more accurately their extent and situation.

"When passing the eastern end of the Straits of Rottee, by keeping within two or three miles of the coast of Timor, a very safe and convenient passage will be found, and these rocks will be avoided."

DESCRIPTION OF BALLYSHANNON,* *properly called the River Erne, from the Bar to the Town. By Com. W. Mudge, R.N., F.R.A.S.*

THE mouth of the river Erne is formed by two points of land; that on the north side, called *Killdoney*, is about eighty feet high, covered with green swards, and nearly perpendicular on the sea face; but a long tongue of silicious slate rock projects from it W.N.W. half a mile, the extreme end only being visible at low-water springs, and the greater part being covered at half tide; at the termination of this tongue there is a detached rock, which has about two feet on it at low tides, and for a cable's length around it there are some sunken rocks with six feet on them; close to these, again, there are seven and eight fathoms.

The high sandy point of Finner forms the south side of the entrance, which terminates in a low flat sand running out due north nearly half a mile from high-water mark, and is one of the main assistants to form the bar.

This extensive flat is only covered with spring tides. When the wind blows at all strong from any points between south and north west, the surf makes a clean breach over this flat, and sweeps directly across the channel of the river, which will take a vessel going in on her starboard broadside; this is one of the most serious difficulties to encounter, and, unfortunately, avoiding it depends on mere chance. Most of the vessels that have been lost on this bar have been thrown by the sea upon Killdoney shore, or the head of the vessel so deflected from her course as to run across the channel before she could be brought to her course again.

The sand-hills of Finner, which are of considerable magnitude, furnish an inexhaustible supply to form a bar; for the greater part of the low sands are quick, especially just inside the river, and great quantities are carried down by every ebb-tide.

The approach to the river is impeded by a bar, called by nautical men the Bar of Ballyshannon; lying between the before-mentioned points, Killdoney and Finner, it is nearly half a mile broad, composed of fine sand lying upon a bed of stones; the least water on the narrow channel over it are three feet six inches on the middle of the bar; the outer part, where the sea begins to break, having about nine feet, gradually deepening to seaward to four fathoms, so that the bar is not precipitous on either side, but progressively shoaling to the centre part, which is termed by the pilots the *Patch*, being that part with the least water on it. An

* Masters of vessels should be cautious in taking freights to Ballyshannon. A letter from Commander Mudge informs us that a vessel now in Killybegs has been lying there since the middle of October, waiting to find a passage over the bar, with *her crew on boardwages at fifty shillings per month for each man!*

endeavour has been made to remove this patch, which runs the whole width of the channel, but with what success I am not prepared to say, except from the information furnished by the people employed on the work, by whom I am told, that at the commencement of the operations there were barely eighteen inches on it, and at present there will be three feet and a half at low water. The principal object appears to be, to deepen the water over the bar by forming a straight channel, and removing a portion of the stones which lie under the sand, with the hopes that ultimately the strong ebb current will keep the channel thus made, clear; how far this may answer the expectations of the projectors, is a mere speculation, and, in my humble judgment, a very doubtful one, too. The two sides of the river are girded by sand, and particularly the south side, is composed of vast sand-hills, which furnish the river washing their base, with abundance of drift sand: This is so intimately mixed with the current, that the water is quite discoloured by it; and as of course it must be deposited somewhere, that place will be where the ebb stream meets with the resistance of the ocean, just outside the present bar; so that, were the present bar removed, or worn down by the increased velocity of the current obtained by the present contemplated effects, another bar would assuredly form outside of the present one.

A grand obstacle to any great improvement in this bar, arises from the exposed position of the mouth of the river, which is directly open to the N.W., and consequently the whole Atlantic swell, uninterrupted in its course for more than two thousand miles, expends its mountainous billows directly on the bar. Is not this alone sufficient to form a bar? And where is there a river, so circumstanced, that has not one?

Having said thus much on the probabilities of the improvements that are sanguinely expected, I shall now advert to the navigation as it at present stands.

From Killdoney, on the north side, a long projecting point runs out, composed of large stones, and joins the bar on the north side, the part terminating it being called the *North Rock*. From Finner, which is the name of the south point of the entrance, a long flat sand extends out to the bar on the south side of it, terminated also by some large stones, called the *South Rock;* between these two clusters of stones, or rocks, lies the channel over the bar, these rocks being only visible at low water.

The Black Rock is situated at the inner extremity of the bar, just half a mile from the outer part of it.

I must here premise, that the bar is only available at high-water spring tide for a vessel drawing more than nine feet; at such times there will be thirteen feet six inches, with neap tides only ten feet; but, generally speaking, the surf is so heavy on the bar, that

crossing it is attended with much danger, and even at the best of times hazardous.

Before it would be prudent to attempt the bar, there are so many concomitant circumstances necessary to ensure a safe passage into the river, that it is but seldom a vessel can get in without many days' detention, waiting for a fair opportunity; indeed, I have known a vessel to be detained at Killybegs three months, anxiously looking for a smooth bar.

A pilot is absolutely necessary, and no person should attempt to take their vessel in without one on board.

High water, a leading wind, and a smooth bar, are indispensable; three things that seldom occur together, because, in the first place, a leading wind gets up the bar, (to use a phrase of the pilots,) which is sufficient to exclude all intercourse with the river; another inconvenience in winter is, that high water happens either before daylight or after dark in the evening, and neap tides do not afford more than ten feet water, though with S.W. gales there may be two feet more on the bar; yet this additional rise would be useless, as the bar would then be impassable.

Three feet should always be allowed for the rise and fall of the sea under any circumstances, even of the most favourable kind.

Vessels bound to Ballyshannon in the winter should always proceed to Killybegs, and send round by land for a pilot; it is the only probable means of ensuring safety to the vessel,—for the bar may be actually impassable, of which the pilots alone are the best judges, when, to a stranger, the entrance may appear tolerably smooth.

Having described the approach to Ballyshannon, I may now observe that, from the bar up to the town, the river is clear from any obstruction, having a clear channel channel, from 10 to 12 feet water up to the quays, where there are from 3 to 5 fathoms water, and room for a considerable number of shipping. The course of the navigation up is pointed out by tide-poles placed alternately on each side the channel.

It now remains for me to speak of the tides which govern the ingress and egress to this port.

It is high water on the Bar at $5^h\ 30^m$ P.M.; but the flood stream runs only four hours, and when the freshes are greatest, only three hours; and on some occasions, especially with neap tides, there is little or no perceptible flood-stream. The ebb-stream may be presumed to run out, that is, generally speaking, from one hour before *high water on the shore*, till the first quarter *flood upon the shore*, or until the water has risen two feet upon the Bar.—The rate of the ebb varies according to the time of tide:—the first quarter ebb will run 4 miles an hour, at half ebb nearly six miles an hour, and from that time till near low water, it is a complete rapid over the bar,—indeed, I can compare the rapidity in a boat

passing out, and the sensation experienced, to nothing but shooting the centre arch of old London bridge.

The ebb sets along both shores after quitting the river, one stream taking a course along the Killdoney side, and the other to the southward, along Finner sands towards Sligo. The force with which the ebb-tide runs, and meeting the swell from the westward in direct opposition to its course, occasions a most terrific surf on the Bar, at the most favourable times there is generally a fall of three feet in the hollow of the sea; but with the wind blowing fresh on the bar the surf rises to an incredible height, at such times a dense misty cloud formed by the spray hangs like a curtain over the entrance of the river, and quite obscures the approach.

The rise and fall with spring-tides are 10 feet, with neap-tides from 4 to 6 feet. With northerly or easterly winds, there will be 13 feet 6 inches on the shortest part of the bar; but from one to two feet more with south or westerly winds.

With neap-tides there will be 10 feet, and with south or westerly winds there may be from 12 to 12 feet 6 inches on the bar.

From the bar half way up to the quay the rate of the current is pretty equal from 3 to 2 knots, but from thence gradually decreasing to something less than ½ of a mile, but, with heavy rains the freshes run over the flood-water, and occasion a constant ebb-stream.

It is high water at the town quays at $5^h\ 10^m$, twenty minutes before it is high water on the bar; this anomaly arises from the great discharge of water from the falls of Ballyshannon accumulating, and causing a higher level, and the flood-tide damming up, and preventing the free discharge of the freshes.

Having now described the approach to Ballyshannon, and fully explained all the dangers that attend the navigation of the river; and given, as well, a short account of the tides, it becomes desirable to add some few remarks, to secure vessels bound to this port from heedlessly running into danger. It would be impossible to give any sailing directions for this port that could be relied on for two successive seasons, as the river often forces for itself a new channel, and particularly in the winter months,—therefore it will be the first duty of a master of a vessel to procure a pilot, and I should advise that all vessels bound to Ballyshannon between October and March should first go to Killybegs, and there procure a pilot, who will go round by land if sent for expressly; for, as the spring-tides turn out favourably in the mornings and evenings, it renders a person liable to be benighted off the Bar, which, I may truly say, would be attended with great danger, and if a westerly gale should catch a vessel so situated, it would, in all probability, prove her destruction. Another difficulty might occur, from the pilot not being able to get out of the river in his

boat owing to the surf, and this may happen when to all appearances to a stranger the Bar may look smooth.

During the summer months shipping may stand boldly for the Bar to obtain a pilot, and even lie off and on, many days; for a favourable opportunity, and if obliged to seek shelter, may either go into Killybegs, or anchor in Donegal river.

In 1836 the marks over the bar were, Wardtoun castle, or rather house, bearing S. E. steer direct for the middle of the Bar, between the north and south rocks, *which will be covered;* when you can judge yourself to be on the middle of the Bar, steer for the *black rock*, passing close to it, but hug rather the weather side; and if with south winds, keep the Finner side close on board, as the wash of the sea over the flats would tend to throw you on the larboard shore; pass the black rock close, and follow down the centre of the channel till you arrive at the elbow made by the Finner sands; now pass close to the sand-hills, touching the side of them almost, and from thence follow between the fairway poles to the town.

These are all the directions I can give for a vessel bound to Ballyshannon, and, to say any more, might lead to mischief; for no sailing directions, unaided by land-marks, could by possibility be made available; but the navigation might be much facilitated by the assistance of some four or five good moveable beacons, made like large targets, so as to be shifted to the alterations caused by the silting of the channel over the Bar.

Donaghadee Pier Lighthouse.

The Corporation for Preserving and Improving the Port of Dublin, &c. give Notice, that on the evening of the First of March next, a Light will be exhibited in the *Tower* at the end of *Donaghadee Pier*, which Light will thenceforth be continued from sunset to sunrise.

Specification given of the Appearance and Position of the Lighthouse, by Mr. Halpin, Inspector of Irish Lighthouses.

The Lighthouse erected on the Pier-head of Donaghadee Harbour bears by compass, (Var. 27° 30′ W.)—

From Copeland Lighthouse . .	S.W. by S.	distant	3¼ sea miles.
,, Deputy Rock	S.S.W.¼W.	,,	1 do.
,, Mull of Galloway Lighthouse	W.N.W.½N.	,,	24 do.
,, Sculmartin Rock . . .	N.¼E.	,,	7 do.

The Tower is circular, and of a light Grey colour; the Lantern elevated 56 Feet over high-water level,
63 Feet over mean level of sea.

The Light will be of a Red colour Seaward from N. by E. ½ E. to S. ½ E.; and bright towards the harbour and the entrance of Belfast Lough. It is a Fixed Light, and will be visible at a distance of eleven miles in clear weather.

By Order, HENRY VEREKER, Secretary.

Ballast Office, Dublin, 14th January, 1836.

EXTRACT of a letter from George Maclean, Esq., President of the Council at Cape Coast Castle, to Joseph Reid, W. M. Hutton, and J. G. Nicholls, Esquires, the African Committee, dated the 24th September, 1835:—

"In my 'Notice to Mariners,' dated Cape Coast Castle, 27th August, in reference to the light to be exhibited on Fort William, there was I find a very material clerical error: instead of a south-*westerly*, it should have been a south-*easterly* current; and it may be as well, and as safe, to alter the proper depth of water for anchoring in from six and a half to seven and a half fathoms; the former is far enough out for ordinary-sized vessels, but, for large ships at *night*, seven or seven and a half fathoms water is near enough to the beach."

VIEQUE, OR CRAB ISLAND,

Is of moderate height, and well wooded; the south-west end is hilly, and to the westward it is low and uneven; on the west end is a low and sandy point, and with it bearing N. by E. about one mile and a half is the anchorage. In working in, do not bring this point to the southward of east, as there are numerous shoals between it and the east side of Porto Rico, and, from the report of a fisherman, there is no passage for any thing but boats; there are no soundings laid down in the charts, neither are the remarks on this island correctly made. We found the soundings regular, and, one mile and a half off shore you will have six fathoms. The shore should not be approached nearer, as the soundings there are irregular, and the ground rocky. There are a few settlers, but chiefly on the north end. We procured a small supply of poultry, but with difficulty. There are two sandy bays on this (the west) side; the southern one has a small run of fresh water, but it is brackish close to the beach; a small supply could be obtained by carrying breakers a little way up the stream, but with much labour. We hauled the seine in the northern bay, but caught only a few fish.

It should be remembered, the northernmost bay is bold, and the bottom sandy; you may approach it to within three-quarters of a mile, with four fathoms. The southern one has a rocky bottom, soundings irregular; and, should it be necessary to anchor off it for a small supply of water, it must be carefully approached.—*Remarks of H.M.S. Arachne, Capt. J. V. Baker, R.N.*

An Account of the late Earthquake in Chili, *by an Officer of H. M. S. Beagle.*

Conception, February 18th, 1835.

At ten in the morning very large flights of sea-fowl were noticed passing over the city of Concepcion, from the sea-coast towards the interior. In the minds of old inhabitants,—well acquainted with the climate of Concepcion, some surprise was excited by so unusual and so simultaneous a change in the habits of those birds,*—no signs of an approaching storm being visible; nor any expected at that season. About eleven the southerly breeze† freshened up as usual; the sky was clear, and almost cloudless. At forty minutes after eleven‡ a shock of an earthquake was felt, slightly at first, but increasing rapidly. During the first half minute many persons remained in their houses; but then the convulsive movements became so strong, that the alarm was general, and all rushed into the open spaces for safety. The horrid motion increased; people could hardly stand, buildings waved and tottered; suddenly an awful overpowering shock caused universal destruction. In less than six seconds the city was in ruins. The stunning noise of falling houses,—the horrible cracking of the earth, which opened and shut rapidly and repeatedly in numerous places; (the direction of these cracks was not uniform, though *generally* south-east and north-west;) the desperate heart-rending outcries of the people, the stifling heat, the blinding, smothering clouds of dust, the utter helplessness and confusion, and the extreme horror and alarm, can neither be described nor fully imagined.

This fatal convulsion took place about a minute and a half, or two minutes, after the first shock: and it lasted equally violent during nearly two minutes. During this time no one could stand unsupported. People clung to each other, to trees, or to posts. Some threw themselves on the ground,—but there the motion was so violent that they were obliged to stretch out their arms on each side, to prevent being tossed over and over. Horses, and all animals, were greatly frightened; standing with their legs spread out, and their heads down, trembling violently. Birds flew about wildly.

After the violent shock had ceased, the clouds of dust, which had been raised by the falling buildings, began to disperse. People breathed more freely, and began to look around them. Ghastly and sepulchral was their appearance: had the graves opened and given up their dead, the sight would have been scarcely less shocking. Pale and trembling, covered with dust and perspiration, they ran from place to place, calling for their

* Chiefly gulls. † Sea-breeze.

‡ Mean time.—Equation, 14′ subtractive from mean time.

relations and friends. Many seemed to be quite bereft of reason.

Considerable shocks continued at short intervals, harassing and alarming. The earth was never long quiet during that or the next day; nor, indeed, during the three days following the great shock.

For many hours after the ruin, the earth was tremulous, and the shocks were very frequent, though not severe. Many shocks, but not all, were preceded by a rumbling subterranean noise, like distant thunder; some compared the sound to the distant discharge of many pieces of artillery. These sounds came from the south-west quarter, and preceded the shock by one or two seconds. Sometimes, but not often, the sound was heard, unaccompanied by any shock.

It was the general opinion that the motion was from south-west to north-east. Some whole walls, whose direction was south-east and north-west, were laid flat; the bricks still maintaining their relative position, though endwise, which fell bodily, without being scattered upon the ground. These walls fell, without exception, to the north-east.* Other walls were scattered as they fell, but the greatest masses of brick-work were thrown towards the north-east. Walls standing in the opposite direction, north-east and south-west, suffered far less; and none fell bodily, or in masses. Fragments were shaken, or torn off; and some of the walls very much cracked,† but others had suffered little.

Roofs fell in every where. Houses built of *adobes*,‡ fell into a confused heap. The cathedral, whose walls are four feet in thickness, supported by great buttresses, and built of good brick and mortar,‖ suffered more than other buildings. Adhering to the remains of the walls were the lower parts of some buttresses, the upper parts of others: while in one place a buttress stood on its own foundation, separated entirely from the wall.

The city of Concepcion stands upon a plain very little higher than the level of the river Bio-Bio. The soil is loose and alluvial. To the eastward and northward are rocky, irregular hills of tertiary§ formation. From the foot of these hills the loose earth was every where parted by the great convulsion, great cracks being left, from an inch to a foot in width. It seemed as if the low land had been separated from the hills, having been more disturbed by the shock.

Women washing in the river near Concepcion were startled by the sudden rise of the water from their ankles to their knees, and

* The streets of Concepcion lie north-east and south-west,—north-west and south-east.

† Vertically:—as if by the undulatory movement of the earth's surface,—in the direction of their length.

‡ Large unbaked bricks.

‖ Both bricks and mortar were excellent.

§ Not quite certain.

at the same moment felt the beginning of the shock. It was said that the dogs avoided the ruin by running out of the way before the shock. This, though certainly known to have been the case at Talcahuano, wants confirmation with respect to Concepcion. Of nine men, who were repairing the inside of a church, seven were killed, and two severely hurt. One of these poor fellows lay, half buried in the ruins, during five days: with a dead body lying across him, through which it was necessary to cut, for his release. A mother, escaping with her children, saw one fall into a hole; a wall close to her was tottering, she pushed a piece of wood across the hole, and ran. The wall fell, and covered the hole with masses of brick-work. Next day the child was taken out unhurt. Another woman missed a child; saw that a high wall was tottering, but ran for her son, and brought him out. As she crossed the street, the wall fell, but they were safe. When a tremendous crash came, the whole street, which she had just crossed, was filled up with part of the ruins of the cathedral. Besides a waving, or undulatory movement; vertical, horizontal, and circular, or twisting motions, were felt. An angular stone pinnacle was particularly noticed, which had been turned half round without being thrown down, or leaving its base.

Persons riding at the time of the great shock were stopped short,—some, with their horses, were thrown to the ground, others dismounted, but could not stand. So little was the ground at rest after the great ruin, that between the 20th of February and the 4th of March more than three hundred shocks were counted. Much misery was alleviated by the good conduct and extreme hospitality of the inhabitants of Concepcion. Mutual assistance was every where rendered, and theft was almost unknown. The higher classes immediately set people to work to build straw-covered huts, and temporary houses of boards, living meanwhile in the open air under trees. Those who soonest obtained, or contrived shelter, collected all about them whom they could assist, and in a few days all had a temporary shelter, under which they tried to laugh at their misfortunes, and the shifts to which they were reduced.

Talcahuano, Feb. 20th, 1835.—At Talcahuano the great earthquake was felt as severely as in the city. It took place at the same time, and in a precisely similar manner. Three houses only, upon a rocky foundation, escaped the fate of all those standing upon the loose sandy soil which lies between the sea-beach and the hills. Nearly all the inhabitants escaped uninjured, but they had scarcely recovered from the sensations of the ruinous shocks, when alarm was given that the sea was retiring! Penco was not forgotten; apprehensive of an overwhelming wave, all hurried to the hills as fast as possible.

About half an hour after the shock, when the greater part of

population had reached the heights, and the sea had retired so much that all the vessels at anchor, even those which had been lying in seven fathoms water, were aground; and all the rocks and shoals in the bay were visible; an enormous wave was seen forcing its way through the western passage which separates Quiriquina Island from the main land. This immense wave passed rapidly along the western side of the bay of Concepcion, sweeping the steep shores of every thing moveable within thirty feet (vertically) from high-water mark. It broke over, dashed along, and whirled about the shipping as if they had been light boats, overflowed the greater part of the town, and then rushed back with such a torrent, that almost every moveable, which the earthquake had not buried under heaps of ruins, was carried out to sea. In a few minutes the vessels were again aground, and a second great wave was seen approaching, with more noise and impetuosity than the first. Though this wave was more powerful, its effects were not so considerable, simply because there was less to destroy. Again the sea fell, dragging away quantities of wood-work, and the lighter materials of houses, and leaving the shipping aground.

After some minutes of awful suspense, a third enormous swell was seen, between Quiriquina and the main land, apparently larger than either of the former waves. Roaring, as it dashed against every obstacle, with irresistible force it rushed along the shore, destroying and overwhelming Quickly retiring, as if spurned by the foot of the hills, the retreating wave dragged away such quantities of household effects, fences, furniture, and other moveables, that, after the tumultuous rush was over, the sea appeared covered with wreck. Exhaustion appeared to follow these efforts. Earth and water trembled. Numbers of the inhabitants now hastened to the ruins, anxious to ascertain the extent of their losses, and to save some money, or a few valuable articles, which, having escaped the sweep of the sea, were exposed to depredators.*

During the remainder of the day, and the following night, the earth was not quiet many minutes at a time. Frequent, almost incessant tremors, occasional shocks more or less severe, and distant subterranean noises, kept every one in anxious suspense. Some thought the crisis had not arrived, and would not descend from the hills into the ruined town. Others, searching among the ruins, started at every shock, however slight, and almost doubted that the sea was not actually rushing in again to overwhelm them. Nearly all the inhabitants, excepting a few who went on board vessels in the harbour, passed the night upon the hills without shelter.

* Thieves were numerous in Talcahuano. Directly after the ruin, these scoundrels set to work, — crying, 'Misericordia!' and with one hand beating their breasts, with the other they stole most industriously.

Next day they began to raise sheds and huts upon the high grounds, still dreading the sea. Without the explanation, it appears astonishing how the shipping escaped destruction. Three large whale-ships, a bark, two brigs, and a schooner, were lying very near the town in from four to seven fathoms water. They were lying at single anchor,* with a good scope of cable.† With the southerly breeze, which was rather fresh at the time of the earthquake, the vessels were lying to seaward‡ of their anchors, with their sterns towards the sea. They were left aground in this position. The captain of the port, Captain Delano, was on board one of the whale ships at the time; whose hatches were battened down, and dead-lights shipped. All hands took to the rigging for safety. The first great wave came in an unbroken swell to the stern of the vessel, broke over and lifted her along without doing any material harm more than sweeping her decks. Dragging the slack chain over the mud checked her gradually, as the first impetus of the wave diminished. Whirling her around, the water rushed out to seaward again, leaving the vessel aground nearly in her former position. From two fathoms, when aground, the depth alongside increased to ten when the water rose highest, during the last wave. The two latter waves approached, and affected the shipping similarly to the former. All held on; though some of the anchors started a few fathoms. Some of the vessels were thrown violently against others; and whirled around as if they had been in the vortex of a whirlpool. Previous to the rush of waters, the Paulina and Orion, two merchantmen, were lying a full cable's length apart. Afterwards they were lying side by side, with three round turns in their cables. Each vessel had therefore gone round the other with each wave. The bow of one was stove in. To the other little damage was done. A small vessel‖ was on the stocks, almost ready for launching; she was carried by the sea two hundred yards in shore, and left there unhurt. A small schooner, at anchor before the town, slipped her cable, and ran out in the offing as the water fell. She met the wave unbroken, and rose over it as an ordinary swell. The Colocolo§ was under sail near the eastern entrance of the bay. She likewise met the wave as a large swell, without inconvenience.

Many boats¶ put off from the shore before the sea retired. Some met the advancing waves before they broke, and rose safely over them; others, half swamped, struggled through the breakers. The fate of one little boy was extraordinary. A servant woman had taken refuge with him in a boat: the boat was dashed

* Or steadied by a light anchor and hawser, which would bear no strain.
† Chain. The holding ground is excellent; a soft tenacious mud.
‡ About half a cable's length, or from sixty to one hundred yards.
‖ About thirty tons. § Chilian schooner-of-war.
¶ Chiefly, if not all, whale boats.

against an anchor lying on the shore, and divided. The woman was drowned, but the half of the boat containing the child* was carried out into the bay. It floated, and the child held firmly, He was picked up afterwards, sitting upright, holding steadily with both hands; wet and cold, but unhurt. The boy's name is Hodges. His father is an Englishman, well known at Talcahuano. He was an officer in the British navy.

Four days afterwards the sea was strewed with wreck, not only in the bay of Concepcion, but outside in the offing. The shores of Quiriquina Island were covered with broken furniture and woodwork of all kinds; so much so, that for weeks afterwards, parties were constantly at work collecting and bringing back property. During three days succeeding the day of the ruin the sea ebbed and flowed irregularly, and very frequently. For some hours after the shock, it rose and fell two or three times in an hour.

Eastward of the island of Quiriquina, the swell was neither so large nor so powerful as that which swept over Talcahuano. Having more room to expend its strength in the wider and deeper part of the bay, may perhaps have been the reason why the sea swelled rapidly, without breaking, near Lirquen, in the south-east part of the bay, and why it broke over Tomé† with violence, though not so furiously as over Talcahuano. The great waves coming from the sea appear to have been divided, at the entrance of Concepcion Bay, by the island of Quiriquina, and turned aside both ways, one part taking its course along the Tumbez, or western shore, towards Talcahuano, the other *across* the eastern opening, towards Tomé.

While the bay of Concepcion was agitated by the great waves, it was noticed by Captain Walford (from his house at Lirquen) that the Colcolo was swept to and fro remarkably. She was under sail near the eastern entrance of the bay. Two explosions, or eruptions, were seen while the waves were coming in; one beyond the island of Quiriquina, in the offing, was seen by Mr. Henry Burdon and his family, who were then embarked in a large boat near Tomé; it appeared to be a dark column of smoke, in shape like a tower. Another rose in the middle of the bay of San Vicente, like the blowing of an immense imaginary whale. Its disappearance was followed by a whirlpool, which lasted some minutes. It was hollow, and tended to a point in the middle, as if the sea was pouring into a cavity of the earth. At the time of the ruin, and until after the great waves, the water in the bay appeared to be every where boiling; bubbles of air, or gas, were rapidly escaping. The water also became black, and exhaled a most disagreeable sul-

* Only four years old.

† Tomé is near the eastern entrance of the bay, where the wave would meet with more interruption than near Lirquen, though considerably less than in the *western* passage.

phureous smell. Dead fish were also thrown ashore in quantities: they seemed to have been poisoned, or suffocated. For several days afterwards the shores of the bay were covered with fine corvinos, and numerous small fish. Black stinking water burst up from the ground in several places. In Mr. Evans's yard at Talcahuano, the ground swelled like a large bubble, and then bursting, poured forth black fœtid sulphureous water. Near Concepcion, similar outbursts of water were seen and similarly described.

It was said, and generally considered certain, that every dog had left the town before the shock which ruined the buildings was felt. By a marked part of the wall of Captain Delano's house, it was ascertained that the body of water reached twenty-five feet above the usual level of high-water. It penetrated into the Altos,* and left sea-weed hanging to the remains of roofs, or to the tops of broken walls. But this must not be taken as the general height of the wave. A body of water, rushing upon a sloping beach with such force, would naturally preserve its impetus for some time, and run up an inclined plane to a great height. Those who watched the waves coming in, considered them, while beyond the shipping, about as high as the upper part of the hull of a frigate, or from sixteen to twenty feet above the level of the rest of the water in the bay. Only those parts of the wave broke which encountered opposition, until within half a mile of the beach, when the roar became appalling.

Persons, who were standing on the heights overlooking both bays, saw the sea come swelling into San Vicente, at the same time that it advanced upon Talcahuano. The explosion in San Vicente, and the sea advancing from both sides, made them think that the peninsula of Tumbez was about to be separated from the main land, and many ran higher up the hills until they had reached the very highest point.

Strange extremes of injury and harmlessness, were among the effects of these overwhelming waves. Buildings were levelled, heavy twenty-four pound guns were moved some yards and upset; yet a child was carried to sea uninjured, and window-frames with the glass in them were thrown ashore upon the island of Quiriquina without a pane being broken!

By the accompanying extract from a register kept by Captain Delano, it will be seen that his barometer fell four or five-tenths of an inch between the 17th and 18th of February, and was still falling on the morning of the 18th, after which it rose again.† So great and sudden a fall, not followed by bad weather, *may* have been connected with the cause of the earthquake; but some doubt hangs over these observations. The barometers on board the

* First-floor rooms.

† In Concepcion a fall of two or three tenths indicates bad weather; four or five tenths, a gale of wind with much rain.

Beagle, at that time in Valdivia, did not indicate any change, as the annexed extract will shew. Still, at so great a distance, it does not follow that the mercury should move similarly; and, notwithstanding doubts excited by persons at Concepcion who had frequently looked at Captain Delano's barometer, I am inclined to believe the accuracy of the extract from his register.

In a river near Lirquen, a woman was washing clothes at the time of the great shock. The water rose instantaneously from her feet half way up her legs; and then subsided gradually to its usual level. It became very muddy at the same time.

On the sea beach, the water swelled up to high-water mark at the time of the shock, without having previously retired. It then began to retire, and continued falling about half an hour, when the great wave was seen approaching.

For some days after the ruin, the sea did not rise to the usual marks, by four or five feet vertically. Some thought the land had been elevated, but the common and prevailing idea was, that the sea had retired. This difference gradually diminished, till, in the middle of April, there was a difference of only two feet between the existing and former high-water marks.

The proof that the *land* had been raised, exists in the fact, that the island of Santa Maria was upheaved nine feet: but of this presently.

In passing through the narrow passage which separates Quiriquina from Tumbez, the great waves had swept the steep shores to a height of thirty feet (vertically) above high-water mark; but this elevation was attained, in all probability, only at the sides of the passage, where the water met with more obstruction, and therefore washed up higher. The passage appears to be nearly one mile in width, and has ten fathoms water in the middle, but the rocks on the western side diminish its navigable width to half a mile.

Wherever the invading waves found low land, the destruction was great; those low lands being in general well cultivated, and the site of many houses. The low grounds lying at the bottom of Concepcion bay, particularly those of the island De los Reyes, were overflowed, and injured irreparably. Quantities of cattle, horses, and sheep were lost. Similar effects, in an equal or less degree, were felt on the coasts between the river Itala, and Cape Rumena. Large masses of earth and stone, many thousand tons in weight, were detached from the cliffs, and precipitous sides of the hills. It was dangerous to go near the edge of a cliff, for numerous chasms, and cracks in every direction, shewed how doubtful was the support. When walking on the shore, even at high water, beds of dead muscles, numerous chitons and limpets, withered seaweed, still adhering, though lifeless, to the rocks where they had lived, every where met the eye; the effects of the upheaval of the land.

OBSERVATIONS ON MR. HENWOOD'S CALCULATIONS ON TWENTY SHIPS OF THE BRITISH NAVY.

(Continued from p. 36.)

THE second assertion of Mr. Henwood, viz. that the *tendencies* of a ship to the motions of pitching and 'scending, arise from, and are measured by, the moments of inertia of the fore and after bodies, next demands consideration. I have shewn that these motions never can occur, nor can there be any *tendency* to such motions while the water-line AB (fig. 2, p. 36) is that at which the ship floats, unless (which is never likely to be the case in a ship) some sudden change should take place in the disposition of the weights on board; and that when the water-line assumes some new position, as that of the line CDE, the tendency of the body to motion is measured by the difference between the moments, $x \times fc$ and $z \times ab$. That this result of my foregoing investigation coincides with those of writers on mechanics, the following short extract from a popular treatise on that subject (Dr. Lardner's Cabinet Cyclopædia, Mechanics, p. 732) will sufficiently prove.

"The power of a force to *produce* rotation is estimated, not by the force alone, but by the product found by multiplying the force by the distance of its direction from the axis. It is frequently necessary in mechanical science to refer to this power of a force, and accordingly the product just mentioned has received a particular denomination; it is called the *moment of the force round the axis.*"

This, then, is the *cause* of motion, and of course measures the *tendency* of a body at rest to commence motion; the moment of inertia is the *effect* of this moment of a force, and measures the force with which a body *in motion* would strike an obstacle opposed to it, and is *estimated* in the *direction* in which the body moves. In the case of a ship, then, during the action of pitching or 'scending, every particle is moving in the same direction, that of the circumference of a circle, the axis of rotation being the centre; the moment of inertia of one part of a ship (as the fore body) cannot, therefore, be correctly expressed with a positive sign, while the moment of the other part (the after body) bears a negative one. The truth of this may be thus further illustrated. The first law of motion is this, that a body put in motion and left to move freely, will continue to move forward uniformly in a right line until stopped by some external force; let us suppose, that while a ship is in the act of pitching violently, a sudden separation should take place of the fore from the after body at the axis of rotation; the result of this disunion would be, that the fore body would (by the law of motion above stated) continue to move *downwards* in the direction of a tangent to the

circle of its previous motion, accelerated in its descent by the force of gravity; the after body would, for the same reason, move upwards in the direction of a tangent to the circle of *its* motion around the same centre, retarded in its ascent by the force of gravity; and this upward motion would continue until the force of gravity had overcome the *moment* of *inertia* of that part.* In calculating, therefore, the effects of the moments of the parts of a body in motion round an axis, it is evident that if the moments of those parts on *one* side of an axis which are moving downwards be considered as positive, the moments of those parts which lie on the *other* side of the axis, and whose motion is consequently upward, must also be estimated as positive, and the *sum* of the two will be the moment of inertia of the whole body, not their *difference*, as Mr. Henwood has attempted to prove.

That the "whole displacement of a ship must remain the same, whether she is in still water or in an agitated sea; and, therefore, when a ship pitches, the increase of displacement at the fore end must be precisely equal to the contemporary diminution of displacement at the after end," is an assertion which Mr. Henwood has made without a shadow of proof, and which may thus shortly be shewn to be erroneous. By reference to fig. 2, p. 36, it will be seen that, if the displaced volume of water CDEFH, to the water line CDE, be such that its centre of gravity γ is above the centre of gravity g of the displacement to the quiescent water line AB, it is evident that when the wave has passed on to abaft the ship, and is not immediately followed by another, the ship must fall *bodily* through a space equal to the difference between Gg and 1γ, in order to displace a bulk of fluid equal in weight to itself, or, in other words, to settle to the water-line BA; in falling through that height, it would acquire a velocity which would cause it to descend in the water until its moment, viz. its whole weight multiplied by the velocity so acquired, should be overcome by the upward pressure of the water. The buoyancy of the volume ABHF, which is equal to the *weight* of the ship only, cannot counteract the *moment* of the ship, which is compounded of that weight multiplied by the velocity acquired in falling through the space $Gg - 1\gamma$; there must then, it is plain, be an increase of the displacement in this case; the extent of the increase would depend, in a great measure, on the *form* of the vessel's body, as well as the height fallen from, which may be exemplified practically by a very simple experiment. Let a wedge-formed body be allowed to float freely in water, and its displacement be carefully observed, then let it fall from a certain height, with its side, base, and point presented alternately downwards, if the water-line on the body be noted at the instant the descending motion is sus-

* The whole of the fore and after bodies are here, as in other places in this investigation, supposed to be collected in their respective centres of gravity.

pended, it will be seen that the volumes displaced in the several cases will vary considerably from the first, or quiescent displacement, and from each other, the last being the greatest.

In the preceding investigation I have shewn that the mean direction of the upward pressure of the volume of water displaced by a ship in an agitated sea, determines the situation of its axis about which the body will revolve; that the moment which gives the ship a tendency to pitch or 'scend is ascertained by multiplying the weights of the fore and after bodies by the distances of their respective centres of gravity from a vertical plane passing through the axis of rotation; the difference between these two moments, will be the "*moment of the force round the axis*" which causes the ship to *pitch* or *'scend* according as the *fore* or *after* moment is the greater. It appears then that no correct or definitive conclusions can be drawn from calculations which ascertain only the positions of the centres of gravity of the displacements of the fore and after bodies, unless it could be proved that those points were in the same vertical planes as the centres of gravity of the fore and after bodies of the ship; this, however, Mr. Henwood has not attempted to do, but on the contrary says, the positions of those important points, in all our ships, depend in a great measure on the discretion or caprice of "either the captain, master, or mate of the hold," the disposition of the stores, ballast, and other variable weights, being left to one of those individuals, and not determined by the constructor of the ship as it should be: in those calculations which are to stamp the characters of twenty ships of the British navy, he has omitted even an approximation to the positions of those points, the correct adjustment of which he has throughout his papers so continually enforced; yet on those calculations, grounded as they are in error, and deficient in extent, even if they had been correct in principle, has Mr. Henwood condemned many of the ships, and impugned the characters of their constructors as deficient of science, with a want of that modesty which would have well become a juster cause.

It would be tedious to go through the whole list which Mr. Henwood has published as examples of his principle; I shall therefore only, in conclusion, make a few observations on two or three of them. The Caledonia is spoken of as "a ship possessing good, if not superior qualities," and this is attributed to the near equality of the distances of centres of gravity of displacement of the fore and after bodies, from the centre of gravity of the ship. The result of the comparison of these elements in the Caledonia with the same elements in the Rodney and Royal Frederick, is stated to be, that the Rodney will most certainly pitch with much greater force than the first-named-ship and, that the Royal Frederick will be the most laboursome ship of the three. We are not informed whether the draught of water to which these calcu-

lations have been made on the Caledonia, viz. 23 feet 7¼ inches, forward, and 24 feet, 7¼ inches, abaft, is that to which her constructor intended she should be trimmed, but it assuredly is *not* that which has been reported to be her line of best sailing, which is 24 feet 8 inches forward, and 25 feet 11 inches abaft; what difference this farther immersion of 1 foot 0¾ inches forward, and 1 foot 3¾ inches abaft, would make in the result of his calculations, Mr. Henwood may perhaps feel sufficient interest in them to ascertain.

The calculations for the Vengeance have been made to two different draughts of water, one of which is said to be the load line prescribed by her constructor the other the sea-going draught. This ship was built at Pembroke in the year 1824; the only trial she ever had was in her passage from that dock-yard to Plymouth, under jury-rigging, and she has I believe been lying in the ordinary of that port since that time. It is probable the line given as the sea-service line of this ship may have been taken from the report of the sailing qualities of some other ship of the same class, built, as the Vengeance is described to be, from the lines of the Canopus, a ship taken from the French in the year 1798: it should, however, be remembered, that the Vengeance differs sufficiently in form from the original, and from some of the others (built nominally from the same design,) to vitiate any calculations made on the draught of the one ship to the sailing-line of another.

On the Pique, one of the constructions of the present surveyor of the Navy, Mr. Henwood thus remarks. If any one who has the means, will make a similar series of calculations, it will most probably be found that the reason why it was found necessary to bring the Pique during her trial with the Castor to so much greater a draught of water by the stern than that at which she was intended to sail, is, *either* that her centre of gravity is much too far before the middle of her length, *or* that her tendencies to pitch and 'scend are very unequal? For the furtherance of science, the relation of one *fact* is of more value than a *thousand* conjectures; the reason for removing some of her foremost guns to abaft, filling her empty tanks with *sea water* (not discharging her sea *store* of *fresh water* as Mr. Henwood has been falsely "led to believe") and altering the position of part of her ballast, and by these means immersing her on her first trial deeper by 18 inches abaft than her construction line, can be satisfactorily accounted for on established principles, without resorting to guesses, or Mr. Henwood's series of calculations; and the *necessity* of making such alteration, so far from proving an "untoward circumstance" against her constructor, may be cited as a decisive proof of the correctness with which she had been originally balanced by him. Previously to the Pique sailing from Plymouth for her trial with the Castor, Captain Rous, with a view to improve the ship, caused the rake of all her masts

to be increased by reducing the after wedges, and setting the heels forward; by these means, the heads of the several masts were brought aft by the distances below given.

	Lower.		*Top.*		*Top-gallant.*	
	ft.	in.	ft.	in.	ft.	in.
Fore . . .	1	4	1	10	2	3
Main . . .	3	1	4	5	5	9
Mizen . . .	2	1	3	1	4	0

By this alteration the centre of effort of sail was carried aft a distance of *five feet;* the consequence must be easily seen, the mean resistance of the water on the bottom was much too far forward for the new disposition of the sails, the ship was therefore too ardent, in other words, could with difficulty be kept from the wind; to correct this defect, as the masts could not be replaced at sea, the alterations above stated were made, and the ship immersed about 18 inches, as Mr. Henwood says, "more by the stern than her constructor intended." The trial, therefore, with the Castor took place under extremely unfavourable circumstances for the Pique, yet terminated by proving her decided superiority. On her refitting after the cruise, at Portsmouth, this well-meant but injudicious alteration was rectified, the ship was brought to the trim first intended by Captain Symonds, and, when she lately returned to Portsmouth, she was reported by her officers to be a perfect sea-boat, and capable of performing all that could be required of a ship in every state of weather.

I am, sir, your obedient servant,

JOHN ALLAN, Naval Architect.

Portsmouth Yard, Dec. 13, 1835.

REPLY OF MR. HENWOOD TO MR. ALLAN'S OBSERVATIONS.

To the Editor of the Nautical Magazine.

SIR,—The observations inserted in the last number of the Nautical Magazine, respecting a paper which was published in the United Service Journal for November last, appear to me so extraordinary, that I am induced to request permission to offer a few observations in reply, in your next number.

Your correspondent has stated, that my "theory is founded on the assumption of the truth" of three propositions; the first of which is, "that the axis of rotation of a ship, under all circumstances, passes through its centre of gravity."

It is true, sir, that in an article in the United Service Journal for November, 1833, I did assume that the truth of this proposition was perfectly well understood and received by all scientific men And although Chapman, who, your correspondent says, was defi-

cient in mathematical acquirements, appears not to have supposed that "a body put in motion turns round its centre of gravity under all circumstances;" still, it is well known that every writer on the subject, skilled in mathematics, has arrived at a very different conclusion from that of Chapman. Your correspondent cannot be unaware that Professor Inman, in his translation of Chapman's work, page 251, note 27, has unequivocally declared the fallacy of Chapman's notion. The reason why your correspondent has now, for the first time, attempted to impugn a doctrine as firmly established by mathematical writers as any other principle in science whatever, must have arisen from some other motive than that of desiring to find out and exhibit truth.

It is stated by this writer, on page 34, that, in support of the problem in question, I have "quoted a proposition from Whewell's Dynamics, to prove that the axis of *any* revolving body must pass through the centre of gravity of that body;" but that "this problem, like all purely theoretical investigations, supposes the revolving body to move *freely* and *in vacuo*, or in a non-resisting medium; and cannot of course apply to the motions of a ship, which are not performed *freely*, but in a fluid of high resisting power."

In this stricture respecting the application of the proof quoted from Whewell's work on Dynamics, it appears not to have been remembered by the critic, that, although in a mathematical solution of such a question, a revolving body is always supposed to perform its motions in vacuo, still it is possible, and indeed perfectly easy, to estimate the effect of any force acting on the body which affects or modifies either its motion of rotation, or that of translation from one point of space to another. And, in considering the motion of a ship in rolling, (for example,) the ship must be supposed to revolve in a non-resisting medium; the effect of the water in accelerating or in retarding the motion, must be duly estimated, and considered as a force acting in its mean direction on the bottom, and producing a certain corresponding effect in making the ship roll with greater or less velocity; in the same manner as the effort of the wind on the sails must be duly computed, and regarded as another force producing its own distinct effect on the motion of rolling. It is thus most obvious, that, although the motions of a ship *are performed* "in a fluid of high resisting power," yet, as the effect of the fluid, like the effect of any other force whatever, acting on the body to produce rotatory motion, may be considered in combination with all other forces acting on it; the mean effort of all such forces will be precisely such a force as Euler has supposed to act on the revolving body of his problem quoted from Whewell's Dynamics; and, therefore, that this "purely theoretical investigation" of the celebrated Euler must be admitted as having been justly applied to illustrate

the motion of a ship, all the circumstances or conditions of the question in each case being precisely similar.

It would have been a less irregular mode of proceeding, if my opponent, instead of first dogmatically pronouncing this problem of Euler's to be an error, then tacitly admitting the truth of the same, but denying at the same time, without any assigned reason, that it can be applied to the motion of a ship; and then, on page 34, asserting that a ship at sea would turn round its centre of gravity, but that it is *almost* always prevented from doing so by an external force, without either specifying *what external force* prevents the body from turning round its centre of gravity, or when the remarkable phenomenon of its turning round this point does actually occur; and then adding, that Mr. Henwood, and others not mentioned, "have fallen into the (same) error in their investigations of the place of the axis of rotation: if, instead of making such a series of unsupported assertions, and afterwards saying he would "defer to some future opportunity the examination of a ship's rotation about a longitudinal axis," he had *first demonstrated* that an error exists in Euler's solution, and that the proof given of the same problem, on page 657, vol. iii. of the Nautical Magazine, is also incorrect; and then, having done this, "endeavoured to prove" that to be true which he has left to rest on gratuitous assertion.

The second point, upon the assumption of the truth of which your correspondent has declared that my "theory" is founded, is, "that the *tendencies* of a ship to the motions of pitching and 'scending arise from, and are measured by, the moments of inertia of the fore and after bodies." This is the second of the "three errors" your correspondent states I have made, although these are not the only errors he could point out, and which three errors he says, "I shall only *at present* endeavour to prove are erroneous." Your readers, sir, may well be surprised to find that any one should endeavour to prove an error to be erroneous. I shall wait, sir, with all due patience and equanimity, for a future disclosure of the other errors your correspondent "could point out."

But, Mr. Editor, it is not true that my theory is founded on the assumption of the truth of the "point" in question. It has never been either supposed or stated by me, that "the tendencies of a ship to pitch and 'scend arise from the moments of inertia of the fore and after bodies." This verily is an error which needs not to be proved to be erroneous. According, sir, to my views, the tendencies of a ship to pitch and 'scend arise from the combined action of the wind and the sea on the vessel, and not from those moments of inertia from which nothing, as I conceive, can with propriety be said to arise.

The promise of a proof of the erroneous character of the error referred to, does not, however, appear to have been fulfilled by my

opponent, who has adroitly substituted for the task of furnishing such proof, a consideration of "under what circumstances the motions of pitching and 'scending occur," and an "endeavour to investigate around what point these motions take place, and prove that that point can never be coincident with the centre of gravity."

The "investigation" and the "proof" are both contained on page 36. A vessel A F H B, vide fig. 2, p. 36, is supposed to be inclined by the stern, so that the centre of gravity of displacement g is transferred towards the stern to a point γ, "into which the whole upward pressure of the water may be supposed to be collected;" and this, be it observed, is at once the endeavoured investigation and proof: this writer *asserts*, "the fulcrum of the imaginary lever (*in fact* the centre of motion) will then be transferred to γ." He immediately afterward repeats, that "this point γ is then the centre of rotation at the *commencement* of the vessel's pitching." And this naked assertion he again calls an "endeavour to demonstrate that the axis of rotation *does not* pass through the centre of gravity, that it is not to be found in any fixed point, but that its situation may be determined at any instant of time, from the mean direction of the upward pressure of the water at that time."

It will hardly appear credible to the intelligent reader, that any one presuming to speak of Chapman's being deficient in mathematical acquirements, could deliberately have written in this manner. If the reader will take the pains to look over pages 35 and 36 of the last number of this publication, he will certainly not discover any thing like "investigation" or "proof" (but only those unwarrantable assertions just quoted) that the centre of gravity of displacement is the centre of motion.

Let it be supposed, for the sake of argument, that the axis of rotation does pass through the centre of gravity of the displacement, and, in a ship at sea, suppose all the ballast is taken from the hold, and placed on the upper deck, so as to be 15, 20, or 30 feet higher, in a strictly vertical direction, than it was when in the hold. It is quite evident that, as the total displacement would be unchanged, the position of the centre of gravity of displacement would also remain unaltered; and if the axis of rotation passes through the point supposed, the moments of the weights above and below this axis must also remain unaltered, by the removal of the ballast from the hold to the upper deck. The absurdity of the notion that the axis of rotation passes through the point supposed is therefore manifest, except in the case (which perhaps never occurs in a ship) when the centre of gravity of the ship, and that of the volume displaced, are coincident.

It may just be mentioned, that when f and a, in fig. 2, page 36, are the centres of gravity of the fore and after bodies, and x and z represent those bodies respectively; that x, multiplied by the dis-

tance of *f* from the axis, does not "represent the tendency of the fore body to descend;" nor *z*, multiplied by the distance of *a* from the same, the tendency of the after body to do so." These moments express the upward action of the water on the fore and after bodies. The tendencies of the weights of the fore and after parts of a ship to descend, depend on the distances of the centres of gravity of those weights from the axis; and the latter points are always much further from the axis than the former.

I remark, sir, in conclusion, that your correspondent's endeavours to shew that my "theory is based on false deductions from false premises," are utterly futile; and I challenge him to point out any thing deserving to be characterised as "fallacious" in the calculations he alludes to. It is this writer's own statement, that I have "pointed out the monstrous deficiency of correct principles displayed in the construction of *all* our navy;" and, sir, it is not my place to plead not guilty of such an offence. He also has said, that my "system should be submitted to a fair and impartial examination;" and of this no one can be so desirous as I am. He speaks of an "unlimited eulogium" which I have bestowed on my system, and, in reply to this, I say I am not aware of having done so. And, finally, he adds, "if this system should prove to be that splendid discovery which is to enlighten the, until now, dark science of naval construction, it is but justice to its inventor that it should be followed in future designs for ships." From entertaining such a notion of what is just to an inventor, we may well hope and pray to be delivered.

I am, Sir, your very humble servant,
W. HENWOOD.

Portsmouth Yard, Jan. 13, 1836.

ORIZABA *and* VERA CRUZ.

[From a Series of Letters by Henry Tudor, Esq.]

ON the 10th of February the Sancho Panza got under weigh, and commenced her passage across the Gulf to Vera Cruz, the chief port of entry on the eastern coast of Mexico. On descending to the cabin, we found our Mexican skipper had played us a very unwarrantable trick, in choking up the only apartment that the passengers had for sleeping in, with a heterogeneous assemblage of parcels of cargo—baggage, boxes, and lumber—so as to close up entirely the few berths which it contained. In fact, our situation was much worse than it was a few days previously, in the hold of the boat, which was never intended to convey passengers, while the Sancho Panza was built for the express purpose. Our complaints, at the same time, amounted to very little; for the cunning navigator had got fairly "to windward of us," having

pocketed the passage-money; and the law being at his sole dictation, as judge and jury in the case, we were compelled, after grumbling and groaning and remonstrating, to make the best of our "untoward" situation. My companion compromised the matter, by sleeping, unconfined, on the open deck, where he could stretch himself on an even surface, though the dews were falling as heavily as a Scotch mist. With regard to myself, believing the danger of suffocation below to be less than that arising from the damp air above, I arranged my miserable bed, as well as I could, on the edges and angles of half a score trunks, sea-chests, and packages, placed in every form of inequality. Besides all this, I had the additional recreation, every evening, of a serenade from a great tom-cat, who was caterwauling through the live-long night, instead of catching rats, for which purpose he had been closely pent up in a kind of pantry adjoining. I could not avoid thinking, with the wisest of men, as well on this occasion as I had done on a variety of others, during the chequered scenes I have passed through in different parts of the world, that "he that increaseth knowledge increaseth sorrow!" The best philosophy, however, because I believe the only refuge under such circumstances, is patience; and being somewhat musical, and totally unable, in the present instance, to think of any thing but the cat, who was continually piping away with a marvellous diversity of tone, I tried, on the second night, as a "*dernier ressort*," to examine the compass of his most sonorous voice, and ascertain how many octaves he might be able to run through, in a concert of his own species, should any ingenious speculator be inclined, in this enterprising age, to buy him for the experiment. The operation was successful, and, at length, sent me to sleep—the best and most desirable result that could happen.

On the fourth day after leaving Yucatan we came in sight of the splendid scenery that characterises the sea-coast of the province of Vera Cruz; or, to speak more correctly, which forms the back-ground of that district. The sun had just risen, and the noble mountain Pic de Orizaba, elevated to the lofty altitude of 17,371 feet above the sea, shone with a resplendent brightness perfectly enchanting. Its extreme snowy whiteness, united with its vast height, was such as to deceive even the practised eyes of the captain himself. It was pronounced to be a cloud; till, unchanging as it remained, amid the gradually ascending masses of vapour that encircled its base and higher regions, as well as concealed a chain of mountains in its vicinity, we were convinced of our mistake. In a short time, this misty veil was withdrawn altogether, when a magnificent array and outline of peaks and ridges was exhibited, on which the sun was pouring down a flood of rosy light that I never saw exceeded, if equalled, even in Switzerland. We now beheld the Coffre de Perote, and the fine

chain of the Sierra di Cempoala, forming a brilliant semicircular sweep, and terminating with the shores of the Gulf. To these were superadded minor ridges and elevations occupying the foreground, thrown into the most fanciful and romantic shapes, which diversified, *ad infinitum*, the general effect; the extremity of the chain on each side curving downwards with a waving but gentle declination. The abstract beauty of this grand mountain landscape required no addition to set it off; but when contrasted with the flat and tame character of the coast of Yucatan that we had just left behind us, it increased, by comparison, the highly pleasurable emotions we experienced.

These huge mountains seemed to stand like the mighty portals of some mysterious region—the guardian giants of some happy valley beyond, where all was peace and security. Orizaba is distant from the coast about sixty miles, from which we were then about twenty-five, and in very clear weather can be distinguished as far off as 180 miles.

In the afternoon we came to anchor in the roads of Vera Cruz, situated in 19° 11′ 52″ of north latitude. Its appearance from the water is remarkably pretty; exhibiting a showy aspect of churches, with their various spires and towers—of white-washed houses with their terrace-roofs—and surrounded entirely with fortified walls. These latter, though very weak, are sufficiently strong for resistance, considering the elements of which an attacking force in this country would be naturally composed. Immediately opposite to the town, and perfectly commanding it, at a distance of about three quarters of a mile, and seated on an isolated rock in the sea, lies the strong fort of St. Juan de Ulloa,* which, on the expulsion of the Spaniards from the continent, was held by them for a considerable period, while the latter was in the possession of the Patriots. It maintains the same position with respect to Vera Cruz that the castle of Guernsey does to the town of that name; and is now united to the Mexican territories, as not a single Spaniard, except by sufferance, is allowed to remain in the Republic.

On entering the city, I found every thing in a state of alarm and military movement. The reports that had reached us in Cuba were all confirmed. The country was on the eve of a civil war. Numbers of the fair sex had already left the place, and the rest were preparing to follow their example — commerce was entirely suspended—the merchants were fortifying their houses with barricadoes of cotton bales, with which they were blocking up their doors and passages, and the lower range of windows—troops, both horse and foot, were flocking into the town—and every thing gave "dreadful note of preparation." The govern-

* The castle of San Juan de Ulloa, according to Mr. Tudor, who obtains it from popular tradition, cost the immense sum of £8,310,000 sterling.

ment forces were lying about three leagues off, at a small village called Santa Fé, from which the inhabitants were expecting an immediate attack.

Santa Anna is the leader of the revolutionary party in the province of Vera Cruz, and to whose military care has been committed the government of the city and fort. He is a handsome-looking man, of about forty-two, and has the reputation of being the most skilful and enterprising of the Mexican generals.

The cause of this civil commotion is stated to be for the purpose of driving from power the present ministers, who are represented as being extremely corrupt and profligate; appropriating the public money, voted for the benefit of general education, and for other national advantages, to their own use. They are charged also with the equally odious attempt, in the eyes of true and faithful Mexicans, of bringing back the old Spaniards, to extricate themselves from the dominion of whom, it cost the Republic so much blood and treasure.

Before paying my respects to the British consul, with the view of ascertaining the possibility of my proceeding to the capital, in the present juncture of affairs, and, if it were possible, the prudence of such a step, I took a survey, with my companion, of our beleaguered town, or at least such as it was threatened to be made in a short time. It is the place where the intrepid Cortez first landed on the 21st of April, 1519, and displays much regularity and elegance, having been constructed of materials of madrepore formation, drawn from the bottom of the ocean, as no rock is to be found in the vicinity of the city. Its form is a parallelogram, and its population about 10,000. The houses are in general handsome and well built, and require only a fresher coat of paint or white-wash to render them still more imposing. The streets are spacious, the foot-pavement well kept; and the whole appearance evinces more of neatness and orderly arrangement than I had expected to find in what was so lately a Spanish colonial town. The thoroughfares of the city exceed considerably in breadth and cleanliness the streets of Havana, which are, in truth, nothing better than lanes and alleys choked up with dirt. In the plaza, or square, stands the government-house, at present occupied by Santa Anna and his military court, and forming one side of it; a second is bounded by the cathedral, a rusty-looking, gloomy pile of building; the other two are filled up with a row of handsome private residences, and a line of shops covered by piazzas.

For some days prior to my setting off, the atmosphere had been completely purified by two or three tremendous gales of wind called "*northers*," which are, with certain intervals, as much to be wished for by a stranger while remaining on the coast, as to be dreaded by him when traversing the waters of the

Gulf. During the period of their continuance, and for some time afterwards, a person may feel himself secure from an attack of yellow fever, as they drive away, with hurricane-like violence, the mass of stagnant air hovering over the city, and charged with miasmata; throwing in a volume of the fresh sea-breeze to occupy its place, and in its turn also to become corrupted. A person is somewhat at a loss, in ranging through the town, to conceive, during the first few days of his residence, the cause of this deadly distemper; but on searching farther, he discovers that, in addition to the dirtiness which characterises the interior economy of the less respectable houses, the various pools of stagnant water lying in the vicinity of the town have a strong tendency, from the rank steam exhaled under the fervid sun of the tropics, to produce the effect.

MEANS PROPOSED FOR MANNING THE NAVY.

To the Editor of the Nautical Magazine.

MUCH has been said, and much written, on the means of manning the navy: little (I think nothing) has been done (notwithstanding Sir James Graham's bill,) towards this desirable end—an end absolutely necessary to attain, before impressment can be dispensed with.

Now, although I really believe that the British navy is rapidly becoming the service, of all others, which good, orderly, seamen will prefer, yet this opinion, though I think pretty general amongst those who have the means of observation, will not, however, justify a Government in relying too much upon *voluntary service;* which, though it probably will always in future man our navy, will certainly not do it in that prompt manner absolutely necessary in times of war, or threatened danger. Indeed, this is apparent from the collecting of a crew for a king's ship at present. When a pendant is hoisted, it is probable there are at the port where the ship is, and in London, ten times the number of men the ship wants, and of men perhaps intending to enter his Majesty's service, yet they must have time to spend their money; and they have a *spree of John Bull*, which pleases them, in strutting about, and shewing their independence for a time, before the very officers under whom they have probably determined to serve. All this will not do in times of war and emergency.

Therefore I beg, through your pages, Mr. Editor, to suggest a plan for effectually manning the navy; every man for which (strange as the assertion may appear) shall join it with his own deliberate and recorded consent. It is simply this:—

Let every seaman, before he can be admitted (by law) eligible to *demand the pay of such*, on board any merchant ship, or be

admitted to be counted as an able seaman in any such ship's crew, be obliged to serve an apprenticeship for a certain number of years, not less than five, concluding with his 21st year; let it be a *condition of such indenture of apprenticeship* (and more solemnly entered into than at present) that he then joins his Majesty's service for three years, into which he is to be received with the rating and pay of an able seaman. A substitute may be allowed here, to enable superior education and abilities to get on direct in the merchant service, for to such the service in the navy would be an unnecessary loss of time; after which the man (as well he who has found a substitute as the one who has served, provided he can satisfactorily shew that he has been serving in the merchant service, and then as something more than before the mast) is to be admitted an able seaman; his indenture of apprenticeship endorsed, with his subsequent services then registered: he is then a free young fellow of twenty-four years, never to be subject to serve again, either in the navy or any public service whatever, short of that which demands every one—a levy en masse. What will not this sort of training produce? The man—after his servitude in the merchant service has laid the foundation, upon which three years' practice and discipline in the navy have operated to make him a good, orderly, and obedient sailor—will then become, when rejoining the merchant service, what is rarely to be found now, a seaman who has learnt to respect his superiors, one who has had such a training as will in all probability restrain him from evil habits for the rest of his life, without having been adrift amongst crimps and sea lawyers.

Here is the great bulk (sufficient old hands will always be found in it) of the seamen provided for the navy, *without bounty*, and discharged not only *without pension*, but they have probably been made good and useful members of society, (a credit to the navy *somewhat new*,) from their being obliged to extend their apprenticeship as it were (between the two services it must be contrived that there be no interval) till twenty-four years of age; indeed they do not become, properly speaking, of age till that time. *Years of discretion* are postponed till that period of life; and it will readily be admitted that such *rare period* in the life of man is more likely to be attained by this seaman of twenty-four, than with those boys cast adrift at the end of their sea apprenticeship ever reaching it, during their natural existence.

Now, I can see no possible hardship in this regulation. The state has an undoubted right to the service of *every man*; it can ballot the man on shore, in time of war, for the militia; (for which I have paid £20 for a substitute;) it may select the gentleman for a sheriff; also, for the grand jury and constable of the parish, in both which latter capacities I have myself been *obliged* to serve; as a petty juryman; a witness, prosecutor, &c. And, what hard-

ships are we proposing to inflict upon a young man who intends to make the sea his pursuit? why, a condition on our part (the public) to provide him, first, the knowledge of a seaman; next, a *certainty* of three years' good pay and service, when he has completed the first part of his duties to the public, his apprenticeship; next, clean comfortable quarters, good and abundant food, medical care, (the attendance as on a child when sick,) habits of order and personal cleanliness, example, and means enforced of attendance on divine worship, the conscious pride of a man who has served his country; and, last, by the completion of a service which, coupled with the continuance of the sober and good habits he will have learnt, will enable him to earn a living for the remainder of his life as a free sailor, with credit to himself, and exempt from all compulsory service as long as he lives.

The register already provided by Sir James Graham's bill will serve to record every indenture; and there can be no difficulty in devising other means to oblige the youth to complete what he has agreed to at the outset, amongst which might be enumerated an obligation on the part of the master to retain a portion of the wages of the apprentice, to so far ensure his being forthcoming; an application on the part of the register office six months before the expiration of the indenture to the master, to render an account of where the boy is, where his parents live, (if any,) or his guardians; notice to them that his services are expected, and will be looked after; repetition of such notice in three months; and again at the expiration of the period. At which time, if the young man is not forthcoming voluntarily, take him by any means, and put him on board a man-of-war going on a foreign station. If this latter measure is required, (which I think will seldom be the case,) it is doing a great good to the young man, in the first place, and next to the public; it will teach him that a solemn engagement is not to be broken with impunity, and it will save the public against the probable consequence of such a one as thinks so, being allowed at that period of life to choose his own pursuits, in defiance of right, and of power.

Many other methods might be added to carry effectually into execution this measure, adding fine on both master and parents if they obstructed it; it is however my firm belief, that, long before the period could arrive that would bring the measure into operation, the confirmed opinion of seamen in favour of the public naval service, would render all but forms unnecessary, in carrying into execution this measure. And thus I think may be turned into account the machinery already prepared by Sir James Graham's bill, and in a much more efficacious manner than he ever contemplated.

I am, Sir, your obedient servant,

A SKIPPER.

Table XXVII.

For reducing French Fathoms to English, and English Fathoms to French.

1 French Brasse = 0·88813786 English Fathom.
1 English Fathom = 1·12595132 French Brasse.

French or Engl. Fthm.	English Fathoms and Dec. parts.	French Fathoms and Dec. parts.	French or Engl. Fthm.	English Fathoms and Dec. parts.	French Fathoms and Dec. parts.	French or Engl Fthm.	English Fathoms and Dec. parts.	French Fathoms and Dec. parts.
1	0·888	1·126	40	35·526	45 038	79	70·163	88·950
2	1·776	2·252	41	36·414	46·164	80	71·051	90·076
3	2·664	3·378	42	37·302	47·290	81	71·939	91·202
4	3·553	4·504	43	38·190	48·416	82	72·827	92·328
5	4·441	5·630	44	39·078	49·542	83	73·715	93·454
6	5·329	6·756	45	39·965	50·668	84	74·604	94·580
7	6·217	7·882	46	40·854	51·794	85	75·492	95·706
8	7·105	9·008	47	41·742	52·920	86	76·380	96·832
9	7·993	10·134	48	42·631	54·046	87	77·268	97·958
10	8·881	11·260	49	43·519	55·172	88	78·156	99·084
11	9·770	12·385	50	44·407	56·298	89	79·044	100·210
12	10·658	13·511	51	45·295	57·424	90	79·932	101·336
13	11·546	14·637	52	46·183	58·549	91	80·821	102·462
14	12·434	15·763	53	47·071	59·675	92	81·709	103·588
15	13·322	16·889	54	47·959	60·801	93	82·597	104·714
16	14·210	18·015	55	48·848	61·927	94	83·485	105·839
17	15·098	19·141	56	49·736	63·053	95	84.373	106·965
18	15·986	20·267	57	50·624	64·179	96	85·261	108·091
19	16·875	21·393	58	51·512	65·305	97	86·149	109·217
20	17·763	22·519	59	52·400	66·431	98	87·038	110·343
21	18·651	23·645	60	53·288	67·557	99	87·926	111·469
22	19·539	24·771	61	54·176	68·683	100	88·814	112·595
23	20·427	25·897	62	55·065	69·809	150	133·221	168·893
24	21·315	27·023	63	55·953	70·935	200	177·628	225·190
25	22·203	28·149	64	56·841	72·061	250	222·034	281·488
26	23·092	29·275	65	57·729	73·187	300	266·441	337·785
27	23·980	30·401	66	58·617	74·313	350	310·848	394·083
28	24·868	31·527	67	59·505	75·439	400	355·255	450·381
29	25·756	32·653	68	60·393	76·565	450	399·662	506·678
30	26·644	33·779	69	61·282	77·691	500	444·069	562·976
31	27·532	34·905	70	62·170	78·817	550	488·476	619·273
32	28·420	36·030	71	63·058	79·943	600	532·883	675·571
33	29·309	37·156	72	63·946	81·068	650	577·290	731·868
34	30·197	38·282	73	64·834	82·194	700	621·697	788·166
35	31·085	39·408	74	65·722	83·320	750	666·103	844·463
36	31·973	40·534	75	66·610	84·446	800	710·510	900·761
37	32·861	41·660	76	67·499	85·572	850	754·917	957·059
38	33·749	42·786	77	68·387	86·698	900	799·324	1013·356
39	34·637	43·912	78	69·275	87·824	1000	888·138	1125·951

MARINE INSURANCE.

To the Editor of the Nautical Magazine.

18th December, 1835.

SIR,—Some months back I had the pleasure of addressing a letter to you, in which I slightly alluded to the communication of Mr. Ballingall, expressing my disagreement from his propositions; since that time I have been actively engaged in the actual business of ship-owning, and have had but little time at my command to write upon the subject. However, I have always contrived to steal leisure to peruse your publication, in which I have been sorry to observe continual attacks (for I must call them attacks) on the order of society in which I am included, founded on, as it seems to me, shear ignorance of the subject. Perhaps, under this view, it is not worth while to reply to them, as most persons reading the Nautical must be aware of the errors. However, as I find that papers, to which you have given wings, light in societies not conversant with the subject, I beg leave to intrude so far on your pages as to give you the facts of the case, so far at least as a London ship-owner of some thirty years' standing can comprehend them, and upon which he has acted in such his occupation. I am sorry to even offer to make your pages the arena for an argumentative combat, as I had rather see them more usefully occupied with practical, hydrographical, and nautical information; but when I see mistatements and false deductions repeated monthly, I think it is no more than a debt to such part of the community who may not be informed in these affairs, for some one to give them the real facts. I deprecate all contradiction of Mr. Ballingall, or his adherents; I presume we both have the same object, viz. the best mode of conducting the mercantile marine of Britain, which, as in every other business under the sun, must eventually be that mode most consonant with straight-forward honesty.

From the letters and papers I have seen scattered through the periodicals lately, it appears to me that the principal positions of the writers are these—First, that the mode of calculating the tonnage of vessels is a primary cause that merchant-ships are misconstructed.

This is I believe originally a bantling of Captain Symonds; but whence its importance as a deteriorating cause in merchant building I cannot tell, except that some collector of the customs, in whose eye the 4d. or 5d. per ton is all-powerful, has suggested the idea.

The only imports I know of charged directly, and dependent on the registered tonnage, are the tonnage duties and the lighthouse dues. Now, suppose a vessel of two hundred registered tons make short over-sea voyages, say two returns to England in a

year, the amount of these taxes will be about £35. Now, that ship may be built (still retaining the same registered tonnage) to carry either 150 tons or 300 tons weight: if therefore these taxes be transposed to the actual cargo brought home, the utmost amount of saving or loss will be about £10 or £15 a year. I have entered into this calculation, that I may not be thought to pronounce quite ex cathedra, when I say that the idea of the tonnage never entered a ship-owner's head when about to build, but once, and that was about twenty-five years ago, when many large vessels were built in the north of England for the transport service, of proportions to give them excessive tonnage, because the Government paid freight per registered ton; this produced ships exactly in conformity with Captain Symonds' plans, viz. vessels short, low, and of immense beam; and very bad merchantmen they proved to be, except that under the *peculiar circumstances* they made large profits. I can safely say, that in laying the keel of a new ship, the owner's principal thought is, according to the best of his knowledge, to build a ship best adapted to the purposes she is intended for, which are, shortly, to carry a large cargo at a light draught of water, sail well, require few hands to manage her, be sea-kindly, and not require much ballast to stiffen her; as for the tonnage duty, his first thought of that is when he disburses the £5 or £10 on his homeward voyage. If those gentlemen who think the tonnage duty has spoilt our ships would go down the river, and look at our vessels, not two similar in *proportion* of dimensions, they must conceive our ship-builders very ingenious fellows, to find so many ways of avoiding so plain a difficulty. If Captain Symonds is pleased to find fault with our shapes, let him not blame the tonnage duty, but our ignorance. I assure him we wish to have good serviceable ships, and are perfect good judges as to what qualifications we require, but are not so clear on the means for ensuring those qualities. We do not want deductions, theories, or tirades, but plain facts; let us have, either in your pages, or "published by authority," the net results of those experiments on naval architecture which the Government have tried; let every constructor in every yard have the means of knowing data which have been obtained, in the only way they can correctly be, viz. by working experiments on a large scale, made by a Government for the good of its people, and not secreted by it for the small purposes of war, but rendered available by it for the higher interests of commerce.

Other statements are, that ships have become bad because of the facility of insurance; that the ship-owner is careless of his ship, and rather patronises a drunken captain, in very great hopes of his vessel being wrecked; in fact, that ship-owners over insure, (regardless of the high premium they pay,) and send a ship, which is certainly lost, (because if they were not, according to those

gentlemen's statement, evidently the owner would lose the premiums,) expressly for the purpose of defrauding their underwriters, who yet, still, though paying innumerable total losses, lose nothing at the year's end, but rise from every fall, like giants refreshed. Now, when it is known, that though there occur cases when a total loss may be an advantage to an owner, yet, that an average or partial damage is invariably (though insured) a loss in a pecuniary view, it follows that ship-owners must contemplate total losses, which generally involve a loss of life. The whole statement seems to me therefore to be *un peu trop fort*, and to sound something like an accusation on a body of men of being thieves and murderers, and the captains and crews with being either the veriest lambs in existence, or else, as Daniel says, "most incomprehensible fools." It seems to be quite forgotten by these writers, that the main object in going to sea is to bring the cargo home safe, cheaply to be sure, but still in good order; that if any damage arises from deficiency in the ship, the ship-owner is liable personally, not the underwriter; that, even if the underwriter has to pay the damage, that the ship's character is lost; she has made an average, the merchants refuse to ship in her; another and a better ship steps in and takes her place.

These gentlemen seem to think that competition is a thing unknown to the ship-owner. Bad ships, cheap ships, always will exist, but from a cause perfectly distinct from sea insurance; if insurance were unknown, it would still be the same. If I can do the same work with £1,000 as my neighbour with £2,000, I save in capital, in interest, and, above all, I save in premiums of insurance; whether we both risk the whole or only nine-tenths, I still have the advantage.

I have much more to say upon the subject, but I had rather see your columns occupied by more entertaining stuff either than this, or the Baillie or Provost speeches of Kirkcaldy; I may however mention, that so far from a greater loss of British shipping at present, it is an error, there never was a clearer book than that at Lloyd's this year. One of the reasons perhaps that make people think more losses occur, is in the accuracy *all* are reported now, down to the veriest fishing-bark. Put the tonnages to your list of wrecks, and you will find that at least to be fact. The Amelia may be a vessel of 15 tons, as well as 400 tons. Above all, I am astonished and alarmed at the spirit that appears in the prayer of the petition from South Shields, and in the Kirkcaldy speeches; I had hoped that education and experience had extended their influence sufficiently over our nation, to shew us that boards and fiscal regulations are only the resorts of ignorant and despotic governments; that the true method of conducting the trade of a great and free empire is by leaving the workings of the whole to the natural arrangement of the real mercantile check, Competition;

and if, in the eager press, some weaker and duller people be pushed into a corner, they only pay the penalty of their own idleness, or that of their parents, and their punishment may most likely induce their children to bestir themselves to a better purpose. The spread of information among the trading community has produced its usual effect—a deep and thorough conviction, that even in trade honesty is the best policy. I appeal to any who may be conversant with the habits and modes of the trading circles of the metropolis and large towns, if straight-forward dealing, and open-handed liberality, be not their characteristics; such we feel will eventually be those of the whole nation of the whole world. But these feelings, and this conduct, has not been produced by Government Boards, or Custom-house prohibitions, but by leaving every movement of trade unfettered, save by the great agent competition, which, as it is greater in the capitals, has taught there first, that to succeed in life you must do well.

I am, Mr. Editor, yours obediently,

Φ.

An Account of the perilous Situation of H.M.S. Centaur, *of 74 guns, Captain Henry Whitby, during a Hurricane experienced by a Squadron of His Majesty's Ships, under the command of Commodore De Courcy, on the 29th and 30th of July*, 1805. *By a Sailor.*

" Now darker grew the crowded atmosphere,
There was no moon on high, and not a star
Peeped through the sable conopy: the blast
Rang loud, and now the war more terrible,
Swept o'er the foaming waves."——*Cottle's Alfred.*

The hurricane in which the Centaur suffered, was considered the severest since that of 1782, when the old French ship of the same name, commanded by the late commissioner Inglefield, foundered.*

It is well known that in the early part of the year 1805, the French and Spanish fleets formed a junction, and proceeded to the West Indies, more for the purpose of creating a diversion, it is probable, than with any serious design of committing depredation on our possessions there. Admiral Lord Nelson pursued them unsuccessfully: and on the 16th of April Admiral Sir Alexander Cochrane arrived at Jamaica with six sail of the line and three frigates. It was a part of this squadron on its return to windward that encountered the hurricane.

On the 19th of June, the Centaur quitted Port Royal, in com-

* The old Centaur's storm was experienced in 48° 33′ N. and 42° 20′ W.; that of the new Centaur was in 26° 17′ N. and 57° 42′ W. to the northward of Barbados.

pany with the St. George, Eagle, Atlas (of the line,) and Success and Blanche frigates,* for the purpose of joining Lord Nelson at Barbados.

We were obliged to anchor when nearly clear of the shoals, in consequence of the commodore's ship, the St. George, having struck upon a coral rock.

The efforts to heave her off proved unavailing until five in the evening, when she was extricated, and anchored in the channel. As she made much water there was no doubt of her being damaged, but the worthy commodore determined to proceed; accordingly, at 7 P.M. the ships weighed, and stood out to sea.

On the 7th July we cleared the Mariguana Passage, after rather a tedious beat. It is proper to state here, that whilst on the windward station the Centaur had run on shore, which occasioned a leak, that now became troublesome. On the 13th, we spoke an American schooner, and obtained the information from her, that the French fleet had sailed from Martinique, destination unknown. No account, however, could be gained of Lord Nelson's movements.

On the 28th we boarded an American Indiaman from Batavia to Salem. This unfortunate ship never reached her port of destination, and, no doubt, foundered in the dreadful storm which came on shortly after: we spoke also several brigs and schooners, which probably shared a similar fate; as from their construction they appeared quite unequal to contend with such weather. For more than a fortnight preceding the hurricane, the winds had been very light and variable: on the day last mentioned it was moderate, from E. N. E., with a cloudy sky; in the early part, without any particular indication of blowing weather setting in. We were unprovided with a barometer, or, no doubt, we should have been forewarned of the approaching war of the elements. At six in the evening, however, the wind began to freshen so much, that the top-sails were double-reefed; it continued to blow during the night with a little increase of strength, but we had no apprehension of any thing more than a common gale occurring. As day-light, on the 29th, approached, the clouds assumed a dark hue and heavy appearance, and continued to thicken and spread around and in the zenith, until not a spot of the azure sky could be distinguished; squalls of wind soon followed, with heavy driving rain and vivid flashes of lightning, unaccompanied with thunder, precursors of the awful tumult that awaited us.

> "There's not a cloud in that dark plain
> But tells of storms to come, or past—
> Here flying loosely as the mane
> Of a young war-horse in the blast;

* The frigates were despatched singly to Barbados; the Blanche was taken and sunk, after a desperate action with a greatly superior force.

There, roll'd in masses dark and swelling,
As proud to be the lightning's dwelling!
While some, already burst and riven,
Seem melting down the verge of heaven;
As though the infant storm had rent
The mighty womb that gave him birth,
And having swept the firmament
Was now in fierce career for earth."*

The top-sails were now close-reefed, the courses were however still kept set, but the larboard bumpkin having snapped, the fore-yard went in the slings, and the sail was blown away from the broken yard; the other sails were instantly reduced. Soon after this every thing was made snug aloft, and the ship brought to under a close-reefed main top-sail; an endeavour was made to set the fore-stay sail, but it blew to ribands, and shortly after in a tremendous puff the main top-sail shared the same fortune.

It was now that doubt gave place to certainty: the hurricane in all its awfulness had truly set in; the seas rising in proportion as the wind increased, began to lash their white heads, and to strike the ship with a force that made her quiver in every plank.

Having arranged what was necessary upon deck, the portion of the crew that were not employed at the pumps were sent down to secure the guns, those fearful appendages to the sides of a ship during storms; and the hatches were battened down.

As long as the masts maintained their positions we expected that our gigantic vessel, although tossed about in a very rough manner, would be the better enabled to struggled with the elements, and acquit herself well; but our hopes and wishes on this head were short-lived. An hour before noon the wind increased to such a degree, that the main top-mast was literally blown away as if it had been a mere straw or a feather, and shortly after the fore top-mast followed, close to the cap. At this time the wind was raging with the most appalling force, and the appearance of the clouds, and the lofty breaking seas, such as no language is adequate to describe.

"The sea,
Now fiercer grown, raved with tremendous wrath;
And every blast that shook the elements
Seemed like the blast portentous of man's doom."

There was a compactness in the dense clouds, which were of a murky cinerous colour approaching to black, enveloping the whole heavens, that effectually shut out every ray of light, and gave to the picture that peculiar wildness of feature, which may be described as one of the characteristic touches of a hurricane. And, although the wind generally drove forcibly onwards in an oblique direction, yet, at times, when at its highest degree of vehemence, it seemed to gyrate or repercuss upon itself with a sound resem-

* Lalla Rookh.

bling the smacking of a thousand cart-whips. This singular property of the aerial current I noticed whilst sitting down (when not descending to or ascending from the lower deck) silently, under shelter before the captain's cabin, contemplating the awful and impressive scene. At such times none of the few persons on deck were allowed to move from under cover of the weather bulwark; there they sat mute spectators of the havock which the warring elements were making upon the noble vessel, and silent listeners of the cheers which now and then issued from their gallant shipmates at the pumps.

The ship rolled and laboured in a manner dreadful to behold, and her weather lurches were often so violent and sudden, that it was wonderful how the lower masts continued to stand; and the ponderous metal! (long 24's and 32's) which at every minute or two were almost vertically suspended. One gun only broke adrift, passing through the sick-bay bulkhead, and swinging across the breech of the opposite gun, where it was securely lashed.

Another source of anxiety was, the heavy seas that incessantly broke over the ship, and the quantity of water which, although the hatches were well secured, found its way into the lower deck. To admit this water to reach the well, it was absolutely necessary to scuttle the lower-deck; and to add to our distress, the leak from below was found to increase, notwithstanding the unwearied efforts of our noble fellows to surmount it.

The best bower-cable having been bent in readiness for anchoring at Barbados, the anchor, during the storm, was watched as rather a dangerous appendage, although on another occasion it would have been viewed with quite a contrary feeling; men, however, were stationed with axes at the manger-board, in readiness to cut the cable, should such be found necessary; the anchor did break its lashings, and a forecastleman, applying his head to the scuttle, gave the alarm to those below; the cable was cut and the anchor gone before it had time to strike the bow, and the alarming circumstance was not known to the captain until the ponderous mass had descended some hundreds of fathoms: its disappearance afforded the greatest satisfaction.

At half-past eleven I conveyed the unwelcome intelligence from the carpenter to the captain, that the leak was fast increasing; the quantity of water rushing in amounting to six feet an hour! Every spare hand was immediately sent down to the pumps, where the fine body of marines were exerting themselves in the most praiseworthy manner: these men were altogether the most perfect company of that useful branch of our naval service that I have ever seen, and men in all respects an honour to it, as they were assuredly to their country.

The lower-deck at this time presented a scene such as no person, who has not witnessed a similar case, can picture to himself: the

air being deprived in a great measure of its oxygen, by the inhalation of such a multitude, and a want of free circulation, was almost suffocating to those who descended, as they were obliged to do, suddenly, by means of man-ropes, (all the ladders being unshipped from the violent and continued motion of the ship,) from the fresh air they had been breathing on the upper-decks; but, it is singular that those who were below for some time did not complain of a similar inconvenience from the foulness of the air; the heat, however, was alike oppressive to all, and the men had thrown off all their clothes but their trowsers.

The water which had found its way through the seams, and up the pumps, was dashed from side to side, according to the inclination of the vessel, and with it were carried various articles which had not been properly secured.

Very few individuals succeeded in obtaining more than a few minutes' sleep during the continuance of the hurricane; on the deck I am speaking of, there was no "pricking for the softest plank," these were under water. The captain, whose 'Aid' I had the honour to be, taking compassion upon me, I suppose, after I had nearly been beaten to a mummy in my various slippery trips down to the lower deck, to convey his orders, and to learn how things were going on there, desired me to go down to rest, *if I could;* and to send another mid up. I was not long in descending, for, in truth, my eye-lids had become so "heavy," that I should have committed a breach of discipline by falling asleep without his order, if I had remained ten minutes longer upon deck. When I had reached below, I waded and floundered amongst the chests, benches, hammocks, &c. until I had gained the mess-table in the gun-room; this was lashed amidships, between the transom cabins; in one of which lieutenant (afterwards captain) Kenah* lay asleep, with the water flowing over his cot. When I reached the table, I found it already occupied by some of the mids, lashed over all, who were snoring away in concert with the roar of the tempest, whilst the water, as it was tossed by the violent motion of the ship, every now and then dashed over their inanimate bodies—happy fellows! thought I at the moment, I envy your perfect state of repose, and I will try to imitate your example; calling one of the men to my aid, I edged in, holding on by the ropes, until a turn or two was passed round me and made fast. I had scarcely adjusted myself ere I was sound asleep; but my slumbers were soon interrupted, for an unlucky weather lurch broke our moorings, and pitched table, mids, and all, fairly into the worthy lieutenant's cot, which breaking down with the heavy weight, nearly smothered us and him also; in truth, it was no easy matter to get extricated from this corner;

* This estimable man and excellent brave officer, after greatly distinguishing himself in India, under Sir C. Cole, was unfortunately killed by the Americans, when in command of H.M.S. Ætna.

as it was, most of us were severely bruised. We were also in a sad hungry state; there was no cooking, and, except the *shadow* of a weovily biscuit, nothing could be got at. I recollect an *animated scramble* taking place for a salt-beef bone, which one of the mates had, whilst foraging, fished out from the ruins of the mess cupboard under water, but which had slipped from his hands into it again. These trivial circumstances may serve to show the deplorable state to which we were reduced.

Incessant bodily labour, want of rest, food, and some stimulating beverage, had now impaired the strength of the men, yet their spirits were as buoyant as ever, for they were sensible that, under Providence, the safety of the ship and all on board depended upon their exertions. The captain and officers gave up the liquors that belonged to them, which, being served out at intervals in small quantities to the men, gave these fine fellows additional vigour. Their exertions were almost incredible; and I am satisfied that none of the surviving officers ever revert to the subject without feelings of the liveliest satisfaction, admiration, and gratitude. With the exception of the cheering, which was absolutely necessary, there was no noise, no confusion, and not a murmur ever escaped them, at the extreme bodily exertion required to work the chain-pumps, and under the privations mentioned; every point of duty was performed consonant with the best system of discipline, and with the most ready and cheerful obedience to the commands of the officers—their conduct might be equalled, but never surpassed, not even by the Alceste's.

There were a great many men, unfortunately, on the sick-list; their condition was wretched in the extreme, confined as they were to the cable tiers; every thing, however, that could be suggested for alleviating their situation, was done by the humanity and attention of the surgeon, who, being without an assistant, had to perform the duty himself.

As the mid-day approached, the motions of the ship became so violent, that apprehension was entertained of the immediate fall of the masts; very near noon, this apprehension was realized, the mainmast went over the side with a tremendous crash, without touching the bulwark! An idea may be formed from this circumstance, of the position of the ship at this awful moment: the weighty stick was sprung on the weather lurch, and tumbled headlong into the sea, at the moment the ship had reached her greatest inclination to leeward, when *the whole of the starboard bulwarks were under water!*

Shortly after, the mizen-mast followed, breaking in three pieces, the middle part falling upon deck; the two cutters were also lost; and the arm and signal chests smashed in pieces. At this moment, part of an enormous wave came with full force against the after part of the ship, and made a clear sweep over the poop

deck, carrying away the captain's gig and the lantern, and making every timber quake. The portion of this sea which passed astern, was much higher than the ship's hull abaft.

I observed, when looking to leeward, that some of the waves, when pressed by others in hasty succession, curled over to windward, with a round frothy top, which suddenly gave way, and the whole body of whitened water came down at once; in general, however, they doubled over, and ran forward with a sort of jumping motion, gradually, but still rapidly, forming a deep concavity, which, when it had reached its utmost depression, began again to swell up, and so on in succession.

All now upon deck was a scene of active bustle and emulation —the recollection is heart-stirring—the disregard of personal danger, in the noble efforts of the noble fellows to clear the wreck now endangering the ship, and amid the appalling scene of desolation that surrounded them, the deafening fury of the wind, and the lofty foaming of the rushing waves—in truth beggars description. The uplifted axe, the shining tomahawk, and the handy knife, were wielded and applied in all directions; the adventurous band often overwhelmed by the surging billows which, now as the vessel's motion increased, broke over her with unrelenting turbulence.

I cannot forbear mentioning one of these brave men (who, I dare say, will not yet have been forgotten by some of the survivors): his name was Hector Moore, a Caledonian—meet child of that poetic land—tall, bony, and powerful, with a countenance as serene and calm, amid the war of elements, as the most impassive judge ever wore. This worthy Scot's exertions were conspicuous among those made by the little band, and he was the admiration and praise of those officers who witnessed his exploits: it was he, too, who had cut the cable, and rid us of the anchor. Where art thou now, "poor Hector Moore?"* gone, perhaps, to the land of spirits!—peace be to thy undaunted soul—I shall never forget thy doings on this memorable day.

It is in the hour of need and peril (as has been remarked, over and over again) that the able and orderly seaman is known, and best seen to advantage; and it is at such times that that daring spirit, the noble characteristic of the sons of Britain, shines with peculiar splendour, surmounting obstacles which often appear impossible to be overcome.

Having cut away the wreck, and seen it clear of the ship, the few men that performed this duty were sent down to the pumps, for the leak was increasing, and there was no abatement of the hurricane.

* Hector was "a character;" he spoke always with humility of himself, commencing, invariably, with "poor Hector Moore;" but, like most sailors, he could not withstand the temptation of "grog."

Our perilous situation, as time advanced, became more and more apparent; the men could not possibly hold out much longer, and, as every hour lessened their strength, so the water must increase, and it was estimated that in twenty-four hours our fate would be decided! Under these circumstances, the officers came to the determination of offering to take their turn at the pumps; but this the captain, although fully appreciating their motive, would not allow, unless the men displayed symptoms of drooping. It must be observed, that the crew were ignorant of the progressive increase of the leak, which had now reached to eight feet an hour! This was certainly a wise precaution, and, indeed, under similar circumstances is generally followed; for, although I do not believe that the fact, if known to them, would have caused any feeling like despair, yet it might have created an alarm, and have given rise to serious consequences: the same motive, no doubt, influenced the commander, in not immediately yielding to the offer of the officers. Every mode that could be devised to cheer and encourage the efforts of the men, was resorted to; but in no one instance was there the slightest occasion for enforcing order; every individual did his duty cheerfully.

Thus were we situated, looking forward with anxiety to the period which was to determine whether we should sink or swim! On the gloomy side of the question, this could not be far distant; and whether the other would ever arrive to us, could only be hoped and devoutly prayed for: the latter, happily, soon became apparent. At four P.M. the clouds began to break; a spot of the heavenly blue* here and there was seen, and gazed at with that sort of intense satisfaction which the warrant of reprieve may be supposed to affect the unhappy wretch who had been condemned to die! and the wind, too, that mysterious power, the source of all our disquiet, began, in a slight degree, to decrease. The relief to the mind which this change afforded, can better be conceived than described.

More, perhaps, with the intent of cheering the men, than with any expectation of succeeding in the attempt, an order was given from the quarter-deck, for some of the men to come up and "make sail!" It is doubtful if ever these spirit-stirring words, ay, even to chase, were ever before received with more joy and exultation by a crew; the cheers that followed would almost have put new life into a dying seaman; they were delightful to hear, and electric in effect.

* It is a common observation among seamen, that there is hope when a bit of blue, "large enough to make a Welshman a pair of breeches," is seen during a storm at sea. The first blue speck we saw, when hope was fast waning her light, may be typified as the "Pitying Angel," sent from heaven to denote that mercy had been extended to us. Blue, *true blue*, that colour which never fades, is the sailors, and with reason—it is the most widely-spread colour constantly before their sight.

The sheet of the fore-storm stay-sail was hauled aft, and the sail attempted to be hoisted from the main-bitts to the stump of the mizen mast; it blew instantly into ribands, as if to mock our joy; nevertheless, the few hands who had come up were kept on deck, that our failure might not check the rising spirits of those at the pumps.

At half-past six in the evening the *scud* began to drive fast, and the weather became clearer, when one of the look-out men announced "a large ship coming right down upon us!" Every body sprang from under the bulwark, and looked to windward.

On the quarter (to the S. E.) a large vessel was indistinctly seen scudding (wind S.S.W.), and in a moment or two after, she dashed close past the stern, with a proximity and rapidity that were startling; she was soon lost to view in the gloom to leeward. We had just time to observe that her fore-topmast was gone, and from her great size we conjectured her to be the St. George, and were extremely happy to find her still buoyant, as, from her leaky state, we had been indulging (and, indeed, continued to do so afterwards) the most gloomy apprehensions for her safety; and we found out subsequently, when again meeting at Halifax, that these feelings had been reciprocally entertained; they on passing us thought it impossible that we could weather out the storm. This was another imminent danger most providentially averted; had it been an hour later, or indeed had not the weather cleared up as it did just at the time, so as to admit of the St. George's steer-men catching a momentary glimpse of our ship, and avoiding contact, by putting the wheel a spoke to port, both ships in all probability would have been ingulphed in the ocean; the Centaur undoubtedly must have gone down from the shock!

The news of the St. George being safe, and the hurricane breaking was soon conveyed to the men at the pumps, and they testified their joy and heart-felt delight by repeated cheers; and although, as may be supposed, their strength must have been greatly lessened from incessant labour, want of rest, &c. yet, I believe truly, that there was more water discharged at this time than at any preceding period; such influence has the animal spirits upon the physical powers of the body.

Night was now approaching, and as it was not possible to ascertain the relative positions of the other vessels, it was not without a reasonable degree of anxiety that we contemplated the possibility of one or other of these running us down. The near realization of such a catastrophe which we had just escaped, rather added to our disquiet; and it was impossible not to be impressed with the conviction, notwithstanding the height of the hurricane seemed to have past, that, unless some of our consorts should be at hand in the morning to afford us aid, there was no other prospect of our being able to keep the ship afloat! in such a forlorn-hope the

mercy of Providence alone could save us by the intervention of some unlooked-for succour; and to this "sheet anchor" of the Christian we clung.

At eight in the evening, the wind, although still blowing violently, had evidently lessened, and the clouds were moving in rapid succession; but the motion of the ship rather increased, as did the leak, now exceeding rather more than eight feet an hour; happily, however, the men still continued their labour, which was almost superhuman; indeed, an ordinary ship's company could never have gone through the fatigue attended by the privations, which these noble fellows underwent—they were a picked crew—the same gallant spirits who had performed so many deeds of daring under that ornament to the service, the late Sir Samuel Hood.

The night was pitchy dark, and the "*whipping smacks*" of the furious wind sounded in our ears, as the wail of the death-note; every hour seemed an age, and the minds of those who were left for a short time to the quiet indulgence of their own thoughts, if these could be defined, dwelt perhaps upon—

> "That tender farewell on the shore
> Of this rude world, when all is o'er,
> Which cheers the spirit, ere its bark
> Puts off into the unknown dark."

The dawn of day, on the 30th, at last arrived, and prepared objects for our sight that were hailed with indescribable delight; the Eagle and Atlas were seen to windward! It is impossible to convey to the minds of those persons who have not been placed in a situation of such extreme peril, the delight with which this intelligence was received by the almost worn-out crew.

Our situation, as must be obvious to the seaman, was not *immediately* bettered by the lessening of the wind, for, not until the sea went down also could we build upon our safety; and before that consummation so devoutly wished should arrive, the men, perhaps, might give way from shear exhaustion, and then our fate would speedily have been sealed, as, no doubt, that of many others have been under similar circumstances; but it pleased Heaven to ordain it otherwise; both wind and sea gradually subsided, and the timely assistance derived from the Eagle saved us. It was the consciousness of this, coupled with the personal exertions of the excellent captain, his officers, and men, that so endeared that ship, and all on board, to our officers and crew.

The two ships had lost their topmasts and sprung their lower-masts, and were otherwise damaged, but none of the squadron were so shattered as the Centaur; she was an unwieldly, though beautiful ship, of great length, carrying heavy metal, and had been considerably shaken when she had been aground.

We were towed to Halifax, N.S. by the Eagle, where we arrived

on the 15th of August; and thus all our fair prospects of reaping glory with Lord Nelson were blasted by this unlucky hurricane. We lost our station in the line at Trafalgar, for which no subsequent good luck could possibly compensate.

For the safety of the ship it was found necessary to heave many of the guns overboard, and the ship's bottom was bothered with a thrumbed sail, which greatly lessened the leak. In conclusion, I may state, that all the officers and crew attended divine service at church, where prayers were offered up to God for our deliverance.

The Lieutenants of the ship were—R. Campbell, R. Kenah, W. Croker, W. Brown, T. Smith, and W. H. Dickson.

To the Editor of the Nautical Magazine.

Royal Clarence Yard, Gosport, Dec. 1, 1835.

SIR,—The prevention of oxidation of iron, when in contact with salt or fresh water, has engaged, from time to time, the attention of various individuals, the attainment of so desirable a result would be fraught with many advantages generally, but more particularly as regards the use of that metal, not only in the construction of ships, but also to the many purposes to which it is applied on board of them.

I beg leave, therefore, to communicate, that for some months past I have been engaged in a series of experiments, having that object in view, and which, in reference to the Phisosophical Magazine for November, appears also to have occupied the attention of Mr. Davy, Professor of Chemistry, of the Royal Dublin Society; but as the conclusion to be drawn from the experiments made by that gentleman differ, in some respect, from those made by me, perhaps the following statement may not prove altogether uninteresting.

My attention was first drawn to the subject, with the view of obtaining a remedy for the quick wear and tear arising from the oxidation of iron tanks, at present generally used in the navy for the stowage of fresh water. I first fitted a small plate of zinc, three inches square, $\frac{1}{16}$ inch thick, with iron rivets, to a piece of sheet-iron six inches square, the two metals being completely in contact, and immersed the same into six gallons of spring water; at the same time I also annexed a piece of sheet iron of the same dimensions, without the zinc, into the same quantity and quality of water: at the expiration of 30 days the two pieces of iron presented nearly the same appearance, viz. *oxidation had commenced, and to the same extent in both.* I repeated this experiment with protectors of larger dimensions, still without any satisfactory result; and I have others still in progress, where the two metals bear a more

equal proportion; but sufficient time has not yet elapsed to form a correct opinion as to the result.

Experiments with two metals in contact in salt water, for the purpose of substituting iron sheathing for ships' bottoms instead of copper, have also engaged my attention, and have been attended with various results. As far as these experiments have proceeded, I fear they were not likely to be productive of the great benefit I at first anticipated, although no doubt can exist as to the zinc protecting the iron from oxidation, as the simple electrical action arising by the contact of the two metals in presence of the fluid, will produce that effect; yet I have found, in all instances, that the corrosion of the zinc is very considerable; the following experiment will shew to what extent:—

Two pieces of sheet iron, six inches square, were fastened to a piece of wood, the one with nine zinc nails, the other with the same number of iron nails, having small pieces of zinc, $\frac{3}{8}$ inch diameter, under the head of each nail; also a third piece of sheet iron fastened to the wood simply with iron nails, the board was then floated in the sea, and at the expiration of 30 days I found the heads of six of the nine zinc nails had completely disappeared, and the pieces of zinc corroded to such an extent, that only a very small portion of zinc remained. The protected iron up to this period was free from oxidation, whereas the iron unprotected was perfectly oxidised: this experiment has been repeated several times with the same result, which clearly shows, that although the zinc completely protected the iron, the zinc itself corroded in exact proportion to the protection it afforded to the iron.

Experiment has also proved, that the same evil which rendered Sir Humphry Davy's system of no practical use for the protection of copper on ships' bottoms from oxidation, is also apparent, to a certain extent, as regards the protected iron, viz. that by rendering it slightly negative, a calcareous substance is found deposited on its surface, and that sea vegetable matter appeared also, in a short period, to attach itself to the iron, although in a much less degree than in the experiments tried on the bottoms of boats, which were subject to the constant friction of the water passing by them.

In the experiments tried in still water, vegetable matter was found to make its appearance on the iron in six weeks after immersion, although a strong electrical action was kept up during that period.

The results of these experiments, as far as they have proceeded, lead me, therefore, to the following conclusion; in the first place, that iron and zinc in connection *will not protect* the former from oxidation in *fresh water*. Secondly, that when iron and zinc are in connection in salt water, the *iron will be protected*, but a calcareous and vegetable substance is generated on the iron. And, thirdly, that in the same proportion as the zinc protects the iron, the zinc itself becomes subject to corrosion.

I wish it, however, clearly to be understood, that although these experiments are not so favourable as might be wished, I by no means consider them so conclusive as to preclude the necessity of further investigation. I am, sir, your obedient servant,

THOMAS TASSEI GRANT.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

A DIARY OF THE WRECK OF H. M. SHIP CHALLENGER on the Western Coast of South America, in May, 1835; with an Account of the subsequent Encampment of the Officers and Crew, during a period of seven weeks, on the South Coast of Chili. Longman. London.

The title of this work informs the reader of its purport. The narrative is written in a plain and unassuming style, and will not fail to impress on the mind of the reader that great superiority in the conduct of British seamen under misfortune, which before this event has been so forcibly contrasted with the behaviour in similar cases of those of other countries. The peculiar circumstances in which the author was placed, enabled him to collect information on that part of the coast of Chili where the wreck took place. This will be found highly interesting by the general reader, while the event shews the great inaccuracies of the charts, the mouth of the river Leïbu, from whence the Challenger's crew were taken by the Blonde, being about twenty miles wrongly laid down in latitude! Our readers will find a concise account of the wreck (partly extracted from the work before us) in our last volume, page 789, and will also find in this "Diary" some plans and views illustrative of the position of the wreck, and the scenery of the country, which give it much additional interest.

A TABLE OF ARCS for facilitating the Computation of the Latitude by Double Altitudes of the Principal Fixed Stars, calculated for the Years 1835, 1845, and 1855, &c. By C. F. A. Shadwell, R.N. Rivington. London.

The observations of two stars for finding the latitude is but seldom resorted to; the obscurity of the horizon, the uncertainty in reading off the instrument at night, and the tediousness of the calculation, are very discouraging; every thing therefore that tends to lessen either one of these difficulties deserves favourable reception. In variable weather, when the sky is clear at intervals, and when, by waiting for the meridian altitude of a star, the latitude by observation might be lost altogether, this method is highly useful; but we cannot understand on what grounds the author gives it the preference over meridian altitudes in every case. Dr. Inman demonstrates in his Navigation, that in the double altitude an error of altitude produces generally a greater error in latitude; whilst by the meridian altitude such error produces an error in latitude neither more nor less. This preference is therefore erroneous; and even if it were not so, the greater length of the calculation of the double altitude, which exposes it to mistakes, would at once decide in favour of the

meridian altitude. In fact, two meridian alts. taken on opposite sides of the zenith at the same time, are worth any number of double altitudes.

The author gives the sign of the application of the arc according to the position of the zenith with respect to the star; it seems to us more natural, and therefore easier, to refer the star to the zenith.

He recommends the altitudes to be taken by different observers at the same moment. We are surprised that experience alone has not led navigators to perceive the uncertainty which must in many cases attend altitudes taken by two observers, the one on a rising and the other on a falling body; not to mention the discrepancies that will arise from the different modes of observing in the two individuals.

In page 7 the author directs the polar distance to be deduced by subtracting the declination from ninety degrees. He should have specified when it is to be added, and when to be subtracted.

The author will also improve his next table by denoting over Arc 1 what it is, namely, the true distance of the two stars; for this affords a convenient method of detecting the error of the arc of the sextant, when the stars are nearly in a vertical plane, by merely correcting the altitudes carefully for refraction.

The title of the work should be corrected. A double altitude of a star, like that of the sun, implies a second altitude of the same star, whereas this method is that of the altitudes of two stars. But we consider Mr. Shadwell's pamphlet a very useful supplement to Dr. Inman's method of working a double altitude, when applied to the case of two stars, as it saves much calculation, and preserves the computer from the liability of falling into the error of adding instead of subtracting Arc 1.

New Charts.

Central America: West Coast of Nicaragua, Guatemala, &c. By Don Felipe Bauza. Admiralty. No. 1129. Price 2s. 6d.

Central America: West Coast of Mexico. By Don Felipe Bauza. Admiralty. No. 1132. Price 2s.

The coast, as well as much of the interior of Central America, remains yet a terra incognita even in the present day, for our very best maps are sadly deficient in the latter, while all that we know of the former depends on the meagre details supplied by Malaspina, and some few observations of our own naval officers. The above charts are constructed on these data, and include the whole coast from the Gulf of California to Quibo island, near Panama. The observations of Captain Beechey, who has recently departed for the Pacific, in the Sulphur, we have no doubt will shortly supply materials to fill up the glaring deficiency here observable; and until we obtain his surveys, we must content ourselves with these, which may be considered the only special charts of this coast yet published in England. We find them enriched with plans of Mazatlan, Chamatla, San Blas, Guatulco, Sonsonate, Culebra, Sacrificios, and Tehuantepec, from Spanish and English surveys.

Arctic America, Sheet II., containing Barrow Strait, Prince Regent Inlet, Boothia Gulf, &c. Admiralty. No. 555. Price 3s.

We have here the result of the discoveries of our own seamen only. In whatever portion of this chart we look, we see the works of those intrepid

navigators—Parry, Franklin, Ross, and Back; names that will be handed down to future ages as combining scientific attainment with the adventurous daring of the British mariner. It is a chart that will probably be of more service to geographers than any one else; but it will derive an interest at present from containing the *sea face* of Captain Back's last discovery, as it appears to shew in a conspicuous manner that the Boothia Felix of Sir John Ross consists of a series of islands, and that Sir Edward Parry's voyage of 1822 determined the north-east extreme of America to be Melville Peninsula.—*Veremos.*

WEST COAST OF SOUTH AMERICA, Sheet II.: from the Gulf of Trinidad to the Gulf of Peñas. By Captain P. P. King, R.N. Admiralty. No. 1085. Price 3s. 3d.

We noticed the first of these charts in our January number. The present one extends to the latitude of 46° 40′ S., and developes new channels, inlets, and sounds, which, if we mistake not, will afford good places of resort to sealing vessels. With this chart before them, navigators may make free with a coast of which, before its appearance, we knew nothing.

FINE ARTS.

A Series of Four Sketches illustrative of various Situations of His Majesty's Ship Pique, on her homeward voyage in October, 1835. Drawn on Stone by J. C. Schetky, Marine Painter to His Majesty, &c.

The pencil of the artist has been more happily employed here on the paper than on the stone. The designs are good, and display the correct drawing, and elegance of style, for which Mr. Schetky's productions are so well known; and, had he been seconded by our old acquaintance Haghe, these drawings would have been more to our taste. As they are, the lithography is execrable, but the drawings, with the exception of the third, decidedly good, and they will no doubt be preserved, by those who were in the Pique, with all the interest due to the event which they are intended to commemorate.

WHAMPOA IN CHINA. By W. J. Huggins, Marine Painter to His Majesty, &c.

This is an admirable picture in aquatint, glowing with all the colour and splendour of the East. The view is well chosen; being from Daues Island, the spectator looking towards Canton, sees the entrances of the Whampoa and Junk rivers. The ships and junks are happily introduced, and, while they improve the perspective, impart a fine spirit of animation to the whole picture.

WRECK PLUNDERING.—On the subject of plundering wrecks, we noticed in our January number, page 44, an occasion on which the crew of an American vessel had been robbed, after being wrecked on our coast in September last. We are happy to find that the circumstance referred to by our correspondent occurred "a long time since," and we are glad therefore to exonerate our countrymen, on his authority, from the serious charge which had been brought against them. It affords us great satisfaction, as it no doubt will to our readers, to find that the glaring enormities committed so frequently on these unhappy occasions are likely to be taken up in a quarter where, of all others, we should

hope for most success in preventing them in future. We understand that the Committee of Lloyd's are about to appoint three lieutenants of the Royal Navy as agents to inquire into, and report to them on, the circumstances attending every wreck that takes place on our coast. We rejoice sincerely at this, and we trust that the appointments will fall into good hands. These officers will be entrusted with a heavy responsibility, and will on many occasions have to act with decision and firmness. They will, however, be assisted in the performance of their duties by every friend to truth and humanity in this country; and, with respect to wrecks abroad, they will no doubt be assisted with the best hydrographical information which the Admiralty can afford, of the localities where they may take place. As to those at home, it is not many days since, that a man was taken out of a cask of wine belonging to a vessel which had been wrecked at the mouth of the Tees, (we believe it was the Fanny from Cadiz,) in the very act of drinking it while he was up to his chin in it! This, however, is nothing to what occurs sometimes; but it is full time that such enormities were put down.

THE VESSELS LEFT IN THE ICE.—We have the satisfaction of announcing to our readers the arrival at Hull of the Viewforth, the Jane, and the Abram, three of the vessels which were frozen up in Baffin's Bay. It is remarkable that all the vessels got clear of the ice about the 31st of January, within two days of each other, in different positions, each having been drifted in it down Davies Strait. The Jane cleared the ice about midway between Cape Farewell and the Labrador coast, the Viewforth about one hundred miles to the northward of her, and the Abram about the same distance to the southward of her, on the coast of Labrador, after being drifted into Hudson's Strait, and carried out again. The crews of these vessels have suffered most severely from the intense cold, and being on short provisions. The lost vessels are the Middleton, the Dordon, the Lee, and the Mary-Frances. Hopes are yet entertained of the safety of the Lady Jane and the William Torr. The latter, it is believed, is in Home Bay, in latitude 69°, and supposed to have been last seen on the 15th of October; while of the former, little or nothing appears to be known. She may have drifted down with the ice along the coast of Labrador. On the arrival of the ship Jane at Stromness on the 13th Feb. she found H. M. ship Cove lying there, on the point of sailing again, after having repaired the damages she had sustained at sea, and which had compelled Captain Ross to bear up for that place. The Cove had left Stromness on the 11th of January, and had reached the longitude of 34° west, when she lost her bowsprit, and received other damage about the bows. The behaviour of Captain Ross, her commander, on this occasion, is spoken of in terms of the highest praise. The manner in which he put the ship before the wind, and secured his foremast after the loss of the bowsprit, and the cool and collected fortitude which he displayed on this occasion, was the admiration of all on board.

SEAMEN'S ASYLUMS.—We have observed with much interest the proceedings at a recent public meeting in London for the purpose of establishing an asylum for merchant seamen. We find it proposed to erect a building in, or in the vicinity of, London; and, as no one can wish for the success of the projectors more than ourselves, we trust they may eventually accomplish their object. We are sorry, however, to see it exclusively intended for merchant seamen, thereby drawing a line or placing a barrier between them and those of the navy, and producing a feeling of caste which in our opinion should be done away as much as possible.

Now, we have long been of opinion that asylums for seamen are much wanted in this maritime country, but instead of erecting them in the metropolis,

or in any great town, we would rather see one in every seaport town of Great Britain, *proportional in size* to the number of seamen belonging to it. Love of home is a leading quality in human nature, and however seamen may roam about the world, they would rather pass their last days in a comfortable retreat at a place which has their earliest recollections, and which may still be dear to them from its containing many of their relations and friends, than they would in a palace where they know no one, and are unknown. Indeed, we have a verification of this in the seamen of Newcastle and Sunderland. They care not for an asylum in London; they have their clubs and their societies in their own ports, where, surrounded by their friends, no doubt, they are far happier than they would be any where else. And why should not other seaports have clubs and societies in the shape of asylums? the principle is the same; and it requires only the active energy of some master minds to work out this feeling into producing a comfortable and respectable building at each place, to which the seamen themselves, as well as the people of the place should contribute. The veterans of the navy have something more, to induce them to live together at Greenwich. Many of them have served and fought together, and can talk over old battles and by-gone hurricanes; but the greater part of their brethren of the merchant service have no such tie, and one half may never have seen the other half before. We throw out these hints for the consideration of those philanthropic gentlemen whom we see engaged at present in the subject, and are quite sure that they will be entitled to the gratitude of the country as well as the class of persons they are desirous of benefiting, if they succeed; but we are equally satisfied that they will have a better chance of success, and will attain their object more effectually, by directing their efforts to the establishment of SEAMEN'S LOCAL ASYLUMS.

PORT WILLIAM.

To the Editor of the Nautical Magazine.

SIR.—The warm support which you have given to my project, for the formation of Port William, induces me to request, through your pages, the attention of your nautical readers to the treatment which that measure has received from the Committee of the General Ship-owners' Society.

Port William was, you are aware, originally designed to be constructed by Shareholders, who were to have been repaid by a passing-toll.

The Committee of the Ship-owners objected to the passing-toll being levied by a joint-stock company, and stated their determination to give it their "most strenuous opposition." At this period one of your correspondents supported the project by his letter, which appeared in your Magazine of February 1834, page 105, in which he exposed the inconsistency of that Committee, for having, in the very same report, expressed their assent to a passing-toll for a mere light on the Start Point, and their design to give their "strenuous opposition," to another, which had for its object the safety of *lives* and shipping between Flamborough-head and the Frith of Forth, — and shrewdly guessing at the cause of their opposition, he observes, "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!"

To the rest of that able exposé of the motives of the General Ship-owners Committee, which greatly encouraged me to continue my humble exertions, I beg to refer your readers.

Shortly after the appearance of the above letter, a highly influential member of the Ship-owners' Committee, in reference to the previous correspondence which had taken place, suggested to me that no ground for opposition on the

part of their Society could possibly exist—if the promoters of Port William would propose to execute it by commissioners in lieu of shareholders.

The above suggestion was immediately acted upon, and to prove that the advocates of the measure were solely actuated by the desire to prevent the great loss of life and property which occurred by shipwreck, I was directed to correspond with the Committee of the Ship-owners' Society on the subject, and in my letter to them, of March 1st, 1834, I thus wrote:—"I am, therefore, directed to request to be informed whether it will receive the honour of your support, if the measure be brought forward as one to be executed by Commissioners to be appointed by Parliament, thus clearly divesting it of all private speculation:"—to which I received the following resolution of the Ship-owners' Committee, on the 11th of March, as their reply.—"Resolved, That under the explanation of Mr. Brooks, this Committee *will not oppose the introduction of a Bill into Parliament founded on the principle expressed in his letter;* but they desire it to be distinctly understood, that they adhere entirely to their former determination, of opposing a passing-toll on shipping, except under the strongest proof of the necessity of the project, and the practicability of carrying it into effect."

The Committee of the Ship-owners' Society are thus pledged to let the measure be fairly investigated before the proper tribunal, Parliament! and the strongest proofs to be there given by nautical men, who must be allowed to be the best judges of its necessity, and by engineers,* as to its practicability.

Notwithstanding this pledge to give the measure a fair hearing, the Ship-owners' Committee have renewed their hostility towards the formation of a harbour which will possess all the requisite qualifications for a place of refuge, as well as a naval station on our eastern coast, while they have extended "their fostering care" towards Scarboro' Harbour, which Sir John Rennie, in his Report, of 1834, to the Commissioners of that place, describes as *wanting the essential requisites of "depth of water, capacity, and facility of entrance for refuge.*

In fact, Scarboro' is at low water a perfectly dry harbour, and its area is only about one-thirtieth part of Port William at Redcar, where at low water there is a depth of thirty feet, and which, from being at the bottom of the bight formed by the coasts of Yorkshire, Durham, and Northumberland, is also better adapted for a wide sphere of useful action.

In contradistinction to the opposition from interested parties, and some shipowners whose property is secured from all loss to them, though not to the public, by the system of sea insurance, as incontrovertibly proved by Mr. Ballingall of Kirkcaldy, and other of your correspondents, you, who know the dangers of our iron-bound eastern coast, will not be surprised to learn how enthusiastically petitions have been signed by many hundreds of the masters of vessels belonging to all the ports on the eastern coasts of England and Scotland.

These intrepid mariners, who command vessels which form the great nursery for British seamen, are grateful for the sympathy shown by the Royal Navy, of which the following officers honoured and promoted the projected harbour, by becoming members of the Committee of Management, when it was proposed to execute it by commissioners, viz.:—The Admiral of the Fleet, Sir C. E. Nugent—the present Commander-in-Chief at Portsmouth, Admiral Sir P. Durham—Admiral Sir E. Codrington—the Commander-in-chief at the Nore, Vice-Admiral the Hon. C. E. Fleeming—Rear-Admiral Sir C. Adam—and Captains Sir Thomas Troubridge, Bart., J. W. Deans Dundas, and Sir Thomas Pasley, Bart.

* See Mr. Cubitt's Report on this subject, p. 239, Vol. IV.

Since your first notice of the harbour in February, 1833, how vast has been *the loss of human life* and property on our eastern coast! On one occasion, only five days after his Majesty's gracious assent that the harbour should be called Port William, as suggested by you, not less than one hundred and twenty-one sail of vessels were wrecked or driven ashore, and an appalling loss of human life thereby incurred.

The recent north-easterly gale has greatly added to the melancholy list; and I particularly call your attention to the wrecks of last week,—the brigs Alfred, Enterprize, William, in Tees Bay, and the Hero, Amity, Emma, Free Briton, Thornley Close, and John Parker, which parted or slipped from their anchors in the bay, and were afterwards wrecked further south.

Applications to Parliament for powers to levy tolls and harbour dues for the miserable dry harbours of Scarborough and Bridlington, have been made, *unopposed by the Ship-owner's Society*, of which former port their *chairman* is the representative in their committee. The petition for leave to bring in a bill to authorize the formation of Port William has also been presented, which will be proceeded with in defiance of an interested opposition, the motives of which will be sifted and properly appreciated by a Committee of the House of Commons.

I am, Sir, your most obedient servant,

28, Old Bond Street. Feb. 1836. W. A. Brooks, Civil Engineer.

In the London Gazette of the 12th of February, we find that the proclamation for the distribution of prize-money arising from the seizure of smugglers and slavers, dated the 19th of March, 1834, was annulled, and the following scale of distribution substituted:—Flag-officers, one sixteenth of the whole,—captains and commanders, one eighth part of the remainder; or if they be not serving under a flag-officer, one eighth part of the whole.—That the remainder be divided into shares and distributed as under:—

Sea lieutenants, field officers and captains of marines or land forces, master and physician of the fleet, and masters—ten shares each.

Subalterns of marines and land forces, secretaries, chaplains, surgeons, pursers, mates, second masters, gunners, boatswains, carpenters, and first engineers—six shares each.

Assistant-surgeons, midshipmen, master's assistants, schoolmasters, junior engineers, clerks, masters-at-arms, coxswains, quartermasters, boatswains' gunners' and carpenters' mates, captains of the forecastle, hold, fore and main tops, coxswain of launch, sail and rope makers, caulkers, armourers, serjeants, pilots—three shares each.

Ships' cooks and corporals, captains of the mast and afterguard, yeomen of signals, coxswain of the pinnace, sailmakers, caulkers, and armourers' mates, coopers and corporals of marines—two shares each.

Gunners' carpenters' sailmakers' and coopers' crews, seamen gunners, able and ordinary seamen, yeomen of store-room, stokers, privates and fifers of marines above seven years' service—one share each.

Cooks' and stewards' mates, barber, pursers' captains' gun, wardroom, and young gentlemen's stewards, gun, wardroom, young gentlemen's cooks, landsmen, or boys of first class, privates and fifers under seven years' service—two hirds of a share each.

Volunteers and boys of second class, one third each.—When captains and commanders share together, captains to have double the amount of commanders.—Commanders doing duty of first lieutenant, to share as other commanders.—Lieutenants commanding small vessels, when not in company of a captain or commander, to share as a captain.—Clerk in charge to share as a purser, unless a purser be in company, when he is to share as a clerk only.

THE COVE.—Extract of a Letter from an Officer on board H. M. S. Cove to a gentleman in this neighbourhood :—

"H. M. S. Cove, off the Lewis, 4th Febr., 1839.

"We sailed from Stromness on Monday, the 11th ult.; on the 13th we had heavy gales from the northward and westward, with hard squalls of snow and hail, which weather continued without intermission till the 28th, when it was such as neither I nor the oldest seaman on board ever saw equalled—blowing a perfect hurricane from N.W., with a most tremendous sea, and heavier falls of hail and snow than I ever supposed could come down. At about half-past four, one of the lieutenants and myself having the watch, and being lashed to the mizen rigging, a most awful sea broke on our starboard bow; I shut my eyes, expecting, when I should again open them, to see the ship dashed into ten thousand pieces; I felt myself almost suffocated with the volume of water which burst over me, and, on opening my eyes, saw the ship on her broadside, the bowsprit lying alongside the bulwarks, all washed away, and to every appearance on the point of going down. But God in his infinite mercy gave a few minutes' interval between the seas, which enabled her to right and come bow to the sea again, before the succeeding one washed the deck fore and aft. The orders were given coolly by Capt. Ross 'to have every thing ready, to hoist the main-stay-sail and drop the goose-wing of the fore-sail, down mizen stay-sail and try-sail, and up the helm at the same moment'—and most trying and anxious moments they were during the time the ship was paying off; she, however, did pay off beautifully; the wind got aft the beam, the main yard was squared, and we were comparatively safe. To give you any idea of my feelings, would be impossible; not a soul on board supposed it possible the ship would have ever recovered herself. The cry on the lower deck was—'the ship is going down; her bows and side are all stove in—' this, however, was not the case. She now, notwithstanding the wind and swell, scudded beautifully; but it was blowing in the most awful manner I ever saw; in thirty-six hours afterwards it became moderate, when we found ourselves all but a perfect wreck. The carpenters have reported one large iron knee in the forehold broke in two, one of the beams all adrift, and a fastening knee loose, many of the tree-nails started, and the coverboard on the bows broken, all the deck ends forward started, bowsprit gone, &c. So you observe that our damages are pretty serious. We expect to get into Stromness to-morrow, having a fine breeze from S.W., and are running along seven knots an hour, under the lee of Lewis, about nine miles off. The captain is, without exception, the finest officer I have ever met with, the most persevering, indefatigable man you can imagine. He is perfectly idolized by every one. The degrees of frost have not been very considerable, not having, I think, been more than 14°; but, for all that, every one has complained of the severity of the cold, owing to the tremendous winds and the rolling of the ship, which has prevented our keeping our limbs in exercise by walking. We have been in company with ice-bergs; and the aurora borealis has been almost every night splendid beyond my powers of description. *Stromness, Friday* (*5th*) 11 *a. m.*—We have this moment anchored."

ROLLERS IN THE ATLANTIC.

One of the most interesting phenomena that the island affords is that of the Rollers; in other words, a heavy swell, producing a high surf on the leeward shores of the island, occurring without any apparent cause. All is tranquil in the distance; the sea-breeze scarcely ripples the surface of the water, when a high swelling wave is suddenly observed rolling towards the island. At first it appears to move slowly forward, till at length it breaks on the outer reefs. The swell then increases, wave urges on wave, until it reaches the beach, where it

bursts with tremendous fury. The rollers now set in, and augment in violence until they attain a terrific and awful grandeur; affording a magnificent sight to the spectator, and one which I have witnessed with mingled emotion of terror and delight. A towering sea rolls forward on the island, like a vast ridge of waters, threatening as it were to envelope it; pile on pile succeeds with resistless force, until, meeting with the rushing offset from the shore beneath, they rise like a wall with impetuous fury on the long line of the coast, producing a stunning noise. The beach is now mantled over with foam, the mighty waters sweep over the plain, and the very houses at George Town are shaken by the fury of the waves. But the principal beauty of the scene consists in the continuous ridge of water crested on its summit with foam and spray; for, as the wind blows off the shore, the over-arching top of the wave meets resistance, and is carried, as it were, back against the curl of the swell; and thus it plays elegantly above it, as it rolls furiously onward, graceful as a bending plume; while, to add still more to its beauty, the sun-beams are reflected from it in all the varied tints of the rainbow.

Amid the tranquillity which prevails around, it is a matter of speculation to account for this commotion of the waters, as great as if the most awful tempest or the wildest hurricane had swept the bosom of the deep. It occurs in situations where no such swell would be expected, in sheltered bays, and where the wind never reaches the shore. The strong and well-built jetty of George Town has once been washed away by the rollers, which sometimes make a complete breach over it, although it is twenty feet above high-water mark. On these occasions the crane at its extremity is washed round in various directions, as the weathercock is turned by the wind, and landing becomes impracticable for the space of two or three days. Such are the rollers of Ascension, and like unto them are those of St. Helena and Fernando Norouha.

The season in which the rollers prevail is from December to April, not but that they do occur at other periods, and they have been severely felt in July. Ships at the anchorage are perfectly secure, and they have to apprehend no danger unless within the immediate influence of breakers. Not only are the seasons of the rollers the same at St. Helena and Ascension, but they sometimes are simultaneous in occurrence. The Chanticleer, while at anchor at St. Helena on the 17th and 18th of January, experienced some very high rollers, insomuch that Captain Foster and his gig's crew landed with the utmost difficulty. On our subsequent arrival at Ascension, I inspected the meteorological journal of my friend Mr. Mitchell, the surgeon of the island, and found it noted that the rollers were so violent on the 15th, 16th, and 17th January, that landing was impossible. Here, then, is a coincidence as to time.

The cause of the rollers has been speculated on, and various conjectures have been formed of them. Some have attributed them to the effects of the moon,—

> "Whom ocean feels through all his countless waves,
> And owns her power on every shore he laves."

And others have attributed them to the tides; but it is evident that these have nothing to do with them. They occur in the most tranquil season of the year, when the south-east trade wind is often very light, where the vast volume of water is constantly impelled in one direction. There is, then, a tendency to a back-set, or a rush of water in a contrary direction, and a tumultuous swell is produced wherever it meets with the resistance from the islands and the banks on which they are based, as well as the shores of a continent. The long steep beaches of Ascension are admirably adapted for the full display of the effect which has been just described.

Naval Register.

THE ROYAL NAVY IN COMMISSION—FEBRUARY 21ST, 1836.

PORTSMOUTH.—Admiral, Sir Thos. Williams, G.C.B.—*Flag-Ship*, BRITANNIA, 120.

PLYMOUTH.—Admiral, Sir William Hargood, G.C.B., G.C.H.—*Flag-Ship*, ROYAL ADELAIDE, 104.

NORE.—Vice-Admiral, Hon. C. E. Fleeming.—*Flag-Ship*, HOWE, 120.

ASTREA—Capt. J. Clavell, Falmouth.

BRITANNIA, 120—Capt. E. R. Williams, Portsmouth.

COVE—Capt. James Ross, 11th Jan. left the Orkneys. Driven back, damaged. Sailed 13th Feb.

EXCELLENT—Capt. T. Hastings, Portsmouth, for practice of naval gunnery.

HARPY, 10—Plymouth.

HOWE, 120—Capt. A. Ellice, Sheerness.

MELVILLE, 74—Flag of Vice-Admiral Sir P. Halkett, G. C. H., Capt. P. J. Douglas, Portsmouth, fitting for West Indies.

PORTSMOUTH, *Yacht* — Lieut. W. M'Ilwaine, Portsmouth.

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

QUAIL—Lieut. Com. P. Bisson, Portsmouth station.

ROYAL GEORGE *Yacht*—Capt. Rt. Hon. Lord A. Fitz Clarence, G.C.H., Portsmouth.

ROYAL SOVEREIGN *Yacht* — Capt. Sir Charles Bullen, Kt., K.C.H., Pembroke.

ROYAL ADELAIDE, 104 — Capt. G. T. Falcon, Plymouth.

SCOUT—Com. R. Craigie, Portsmouth.

SEAFLOWER, *Cutter*, 4—Lieut. J. Roche, Portsmouth station.

SPEEDY, *Cutter*—Lieut. J. Douglas, Portsmouth station.

TERROR, Com. E. Belcher, Chatham. Nearly ready for sea.

WILLIAM & MARY, *Yacht*—Capt. Sir S. Warren, Kt. K.C.H., Woolwich.

LISBON STATION.

Rear-Admiral, W. H. Gage.—*Flag-Ship*, HASTINGS, 74.

CAMELEON, 10—Lieut. Com. J. Bradley, 19th Jan. in the Tagus.

CASTOR, 36—Capt. Rt. Hon. Lord J. Hay, North coast of Spain.

HASTINGS, 74 — Capt. H. Shiffner, in the Tagus 19th Jan.

MAGICIENNE, 24—Capt. G. W. S. J. Mildmay, 26th December, at Cadiz.

PEARL, 20—Com. H. Nurse, 19th Dec. in the Tagus.

PHŒNIX, St.V.—Com. W. Henderson, Plymouth.

RINGDOVE, 16—Com. W. F. Lapidge, Oct. north coast of Spain.

ROYALIST, 10—Lieut. Com. C.A. Barlow, Oct. north coast of Spain.

RUSSELL, 74—Capt. Sir W. H. Dillon, K.C.H., 19th Dec. left Cadiz for Corunna.

SARACEN, 10—Lieut. T. P. Le Hardy, Oct. north coast of Spain.

TWEED, 20—Com. T. Maitland, 8th Jan. arrived at Cadiz.

VIPER, 6—Lieut. Com. L. A. Robinson, 19th Dec. in the Tagus.

MEDITERRANEAN STATION.

Vice-Admiral, Sir Josias Rowley, Bart., G.C.B.—*Flag-Ship*, CALEDONIA, 120.

BARHAM, 50—Capt. A. L. Corry, 6th Jan. at Malta.

CALEDONIA, 120—Capt. G. B. Martin, C.B., 6th Jan. at Malta.

CANOPUS, 84 — Capt. Hon. J. Percy, 6th Jan. at Malta.

CEYLON, 2—Malta.

CHILDERS, 16—Com. Hon. H. Keppel, 16th Jan. at Barcelona.

CLIO, 16—Com. W. Richardson (*a*), 3d Jan. at Gibraltar.

COLUMBINE, 18—Com. T. Henderson, 6th Jan. at Malta.

EDINBURGH, 74—Capt. J. R. Dacres, 6th Jan. at Malta.

ENDYMION, 50—Capt. Sir S. Roberts, 8th Oct. at Cadiz.

FAVORITE, 18—Com. G. R. Mundy, Dec. at Smyrna.

JASEUR, 18—Com. J. Hackett, 3d Jan. at Malaga.

MALABAR, 74—Capt. Sir W. A. Montague, 19th Jan. at Cadiz.

MEDEA, 6 — In company with the Portland.

ORESTES, 18—Capt. H. J. Codrington, 6th Jan. at Malta.

PORTLAND, 52 — In attendance on the King of Bavaria.

REVENGE, 78—Capt. W. Elliott, C.B., K.C.H., 6th Jan. at Malta.

RODNEY, 92—Capt. H. Parker, 16th Jan. at Barcelona.

SAPPHIRE, 28—Capt. R. F. Rowley, Dec. at Corfu.

THUNDERER, 84—Capt. W. F. Wise, C.B., 6th Jan. at Malta.

TRIBUNE, 24—Capt. J. Tomkinson, 6th Jan. at Cadiz.

TYNE, 28—Capt. Viscount Ingestrie, Jan. at Barcelona.

VERNON, 50—Capt. J. M'Kerlie, 6th Jan. at Malta.

VOLAGE, 28 — Captain P. Richards, 30th Oct. arrived at Malta from Constantinople ; remained 17th of December.

CAPE AND AFRICAN STATION.

Rear-Admiral, P. Campbell, C.B.—*Flag-Ship*, THALIA, 46.

BRITOMART, 10—Lieut. W. H. Quin, 19th Dec. at Ascension.

BUZZARD, 10—Lieutenant Com. S. Mercer, June, Bight of Benin.

CHARYBDIS, 3 — August, Bight of Benin.

CURLEW—Lieut. Com. E. Norcott, Dec. off Sierra Leone.

FAIR ROSAMOND, *Schooner* — Lieut. Com. G. Rose, June in Bight of Benin.

FORESTER—Lieut. Com. G. G. Miall, 21st June off Prince's Island.

GRIFFON, 3—Lieutenant Com. J. E. Parlby, July in the Gambia.

LEVERET — Lieut. Com. C. Bosanquet, 3d Dec. at Sierra Leone.

LYNX, 10—Lieut. Com. H.V. Huntley, 12th Dec. left Ascension.

PELICAN—Lieut. Com. B. Popham, 4th July arrived at Cape from Ascension.

PYLADES, 18—Com. W. L. Castle, 30th Oct. arrived at the Gambia.

ROLLA, 10—Lieut. Com. T. H. H. Glasse, 24th Nov. at Ascension.

THALIA, 46—Captain R. Wauchope, 13th Dec. left Ascension for Gambia.

TRINCULO, 18 — Com. H. J. Puget, (act.) June in Bight of Benin.

WATERWITCH—Lieutenant Com. J. Adams (*b*), 16th Dec. sailed for coast of Africa.

EAST INDIA STATION.

Rear-Admiral, Hon. Sir T. B. Capel. *Flag-Ship*, WINCHESTER, 52.

ANDROMACHE, 28—Capt. H.D. Chads, 15th July arrived at Mauritius from Madras.

HYACINTH, 18—Com. F. P. Blackwood, 2d Oct. arr. at Batavia.

RALEIGH, 16—Lieut. Com. M. Quin, 19th Aug. at Canton.

RATTLESNAKE, 28—Capt. W. Hobson, 2d Aug. left Bombay on a cruize.

ROSE, 18—Com. W. Barrow, 20th June arr. at Trincomalee.

VICTOR, 18—Com. R. Crozier, 25th July arrived at Bombay; 28th sailed for Trincomalee.

WINCHESTER, 52—Captain E. Sparshott, R. M., 21st April sailed for Bombay.

WOLF, 18—Com. E. Stanley, 1st Nov. left Mauritius for Madras.

ZEBRA, 16—Com. R. M'Crea, 21st May left Madras for Colombo.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral The Right Hon. Sir G. Cockburn, G.C.B. *Flag-Ship*, PRESIDENT, 52.

BELVIDERA, 42—Capt. C. B. Strong, 7th Oct. arr. at Barbados from Bermuda; 11th Nov. remained.

CHAMPION, 18—Com. R. Fair, 7th Nov. left Jamaica for Nassau.

COLUMBIA, St. V.—Master Com. J.

Henderson, 11th November at Barbados.

COMUS, 18—Com. W. P. Hamilton, 10th Dec. left Jamaica.

CRUIZER, 18—Com. W. A. Willis, 28th Nov. at Bermuda.

DEE, St. V. 4—Com. W. Ramsay, 22d Oct. at Jamaica.

DROMEDARY—Bermuda.

FLAMER, St. V.—Lieut. Com. J. M. Potbury, running with mails between Jamaica and Barbados.

FORTE, 44—Captain W. O. Pell, 8th Nov. at Jamaica.

GANNET, 18—Com. J. B. Maxwell, 2d Dec. arrived at Jamaica.

LARNE, 18—Com. W. S. Smith, 9th Dec. left La Guayra for P. Cabello.

MAGNIFICENT, 4—Lieutenant Com. J. Paget, Port Royal.

METEOR, St. V.—Lieut. Com. G. W. Smith, 4th Oct. arrived at Barbados.

NIMROD, 20—Com. J. Fraser, 25th Dec. arrived at Madeira, on her way to the West Indies.

PICKLE, 5—Lieut. Com. A. G. Bulman, 8th Dec. left Jamaica for Nassau.

PIKE, 12—Lieut. Com. A. Brooking, 26th Nov. arrived at Jamaica from Maracaybo.

PINCHER, 5—Tender to flag-ship, 20th Sept. left Jamaica for Nassau.

PRESIDENT, 52—Captain James Scott, 28th Nov. at Bermuda.

RACER, 16—Com. J. Hope, 26th Jan. left Spithead for Barbados.

RACEHORSE, 18—Com. Sir J. E. Home, 23d Sept. arrived at Maranham from Para.

RAINBOW, 28—Capt. T. Bennet, 17th Nov. sailed from Jamaica for Bermuda.

SAVAGE, 10—Lieut. Com. R. Loney, 11th Nov. at Bermuda.

SCYLLA, 18—Com. E. J. Carpenter, 15th November arrived at Jamaica from Havana. To sail 16th for Carthagena.

SERPENT, 16—Com. E. Nepean, 30th Dec. arrived at Havana from Nassau.

SKIPJACK, 5—Lieutenant Com. S. H. Ussher, 13th Dec. arr. at Jamaica.

SNAKE—Com. R. L. Warren, 9th Nov. arr. at Spithead and sailed for Port Royal.

VESTAL, 26—Captain W. Jones, 6th Feb. left Portsmouth for West Indies.

WASP, 18—Com. J. S. Foreman, left Jamaica for Vera Cruz.

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hamond, K.C.B. *Flag-Ship*, DUBLIN, 50. 2d June.

ACTÆON, 28—Capt. Rt. Hon. Lord E. Russell, Dec. at Bahia.

BASILISK—Lieut. Com. G. G. M'Donald, Oct. on coast of Peru.

BLONDE, 46—Captain T. Mason, C.B., Oct. at Callao from Valparaiso.

CLEOPATRA, 26—Capt. Hon. George Grey, 19th Dec. arr. at Madeira.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

DUBLIN, 50—Capt. G. W. Willes, 10th Dec. at Rio Janeiro.

HARRIER—Com. W. H. H. Carew, 19th November left Spithead for South America.

HORNET, 6—Lieutenant Com. T. R. Coghlan, running between Monte Video and Rio Janeiro.

NORTH STAR, 28—Capt. O. V. Harcourt, Dec. off coast of Mexico.

RAPID, 10—Lieut. Com. F. Patten, Falkland Islands.

ROVER, 16—Com. C. Eden, 14th Oct. sailed for Pacific from Rio.

SATELLITE, 18—Com. R. Smart, 9th Feb. arr. at Portsmouth, 12th sailed for Plymouth.

SPARROWHAWK, 18—Com. C. Pearson, Oct. coast of Peru.

TALBOT, 28—Captain F. W. Pennel, Dec. river Plate.

WANDERER, 16—Com. T. Dilke, 11th Nov. arrived at Madeira; 14th sailed for Rio, thence for New York, and, finally, for West Indies.

TROOP SHIPS.

ATHOL, *Troop Ship*—Master Com. A. Harley, 9th Sept. arrived at Plymouth from Cork.

JUPITER, *Troop Ship*—Captain Hon. F. W. Grey, 17th Nov. arrived at Rio, with Lord Auckland and suite, for India.

ROMNEY, *Troop Ship*—Master Com. James Wood, 23d Jan. arrived at Portsmouth from the Cape.

STEAM VESSELS.

AFRICAN—Lieut. Com. J. West, Packet Station.
ALBAN—Blackwall, refitting.
BLAZER—Woolwich, ordinary.
COLUMBIA—See West Indies.
CARRON—Blackwall, refitting.
COMET—Mast. Com. J. Wright, coast of Ireland.
CONFIANCE, 2 — Lieut. Com. J. M. Waugh, mails between Malta and Corfu.
DEE, 4—See North American Station.
ECHO—Woolwich, fitting.
FIREBRAND—City Canal, fitting new boilers.
FIREFLY—Woolwich. In dock.
FLAMER, 6—See West India Station.
HERMES—See Packets.
LIGHTNING—Woolwich, ready for sea.
MEDEA, 6—See Mediterranean Station.
MESSENGER, 1—Woolwich, ready for sea.
METEOR—See West India Station.
PHŒNIX—See Lisbon Station.
PLUTO—Plymouth.
RHADAMANTHUS—Woolwich basin.
SALAMANDER—Woolwich basin.
SPITFIRE, 6—Woolwich basin.
TARTARUS—
EXPRESS—Lieut. W. P. Croke, Sheerness.
SWIFT—Woolwich basin.

SURVEYING VESSELS AT HOME AND ABROAD.

ÆTNA, 6—18th Dec. sailed for the survey of the Gold Coast.
BEACON—Archipelago. Ordered home.
BEAGLE, 10—Coasts of Patagonia and Chili. On her way home.
FAIRY, 10—Woolwich.
GULNARE, Hired Schooner—Gulf of St. Lawrence.
LARK—19th Dec. arrived at Madeira.
MASTIFF, 6—2d Feb. arrived at Spithead; 12th sailed for Chatham; 20th paid off.
RAVEN—18th Dec. sailed with Ætna.
SULPHUR—22d Dec. sailed for Pacific.
THUNDER—28th Nov. at Bermuda.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; Assistants, Lieuts. J. Harding, G. A. Frazer.—Coast of Ireland.
Lieutenants, M. A. Slater; H. C. Otter.—East Coast of Scotland.
Lieutenants, W. L. Sheringham; A. Kortright.—Cardigan Bay.
Lieutenant C. G. Robinson.—North Coast of Wales.

COMMISSIONED.

EXPRESS—Sheerness.
SWIFT—Woolwich.

PAID OFF.

PANDORA—Sheerness.
ALBAN—Woolwich.

APPOINTMENTS.

AFRICAN, St. V.—*Sec. Mast.* J. Allen.
ACTÆON, 26—*Coll. Mid.* F. S. Chetham.
ALERT, 10—*Mast. Assist.* T. Walker.
CRUIZER, 16—*Purser*, E. Thorne.
COVE—*Surg.* C. H. Fuller.
HARPY, 10—*Lieut.* Hon. G. R. A. Clements; *Assist. Surg.* R. T. C. Scott.
HASTINGS, 74—*Coll. Mate*, G. E. Walford.
MELVILLE, 74—*Mast.* J. M'Donald; *Surg.* J. Noot; *Mast. Assist.* J. M. Fox.
NAUTILUS, 10—*Assist. Surg.* W. F. Carter.
ORESTES, 18—*Com.* J. F. Newell.
PLUTO, St. V.—*Lieut.* J. Duffil.
RACER, 16—*Assist. Surg.* J. Selleck; *Mid.* R. A. Bligh.
REVENGE, 78—*Com.* W. J. Cole.
ROMNEY, 76—*Sec. Mast.* J. Loudon.
SEAFLOWER, 4—*Mate*, H. N. N. Mottley.
THALIA, 46 — *Lieuts.* O. H. Dyke, J. R. L. Stoll, H. Coryton; *Clerk*, J. Adams.
TERROR — *Surgeon*, R. M'Cormick; *Mate*, F. Robinson; *Mids.* Geo. Sunderland, Aug. C. Murray.

NAVY LISTS OF JANUARY, 1815, AND JANUARY, 1836, COMPARED.

Rank.	Nos. on the List in 1815.	1836.	Amt. of Incr.	decr.
Admirals of the Red	24	8	—	16
Admirals of the White	24	8	—	16
Admirals of the Blue	21	13	—	8
Vice-Admirals of the Red	27	15	—	12
Vice-Admirals of the White	24	13	—	11
Vice-Admirals of the Blue	22	19	—	3
Rear-Admirals of the Red	27	17	—	10
Rear-Admirals of the White	26	17	—	9
Rear-Admirals of the Blue	24	25	1	—
Superannuated Rear-Admirals	35	27	—	8
Retired Captains	39	9	—	30
Retired Commanders	—	100	100	—
Captains	824	753	—	71
Commanders	762	834	72	—
Lieutenants, including those retired with the rank of Commanders	3211	3235	24	—
Masters	666	467	—	199
Physicians	15	11	—	4
Surgeons	886	674	—	212
Pursers	974	593	—	381
Assistant-Surgeons	567	281	—	286

NAVAL FORCE OF RUSSIA, IN 1836.—The Russian navy, in active service, consists of three squadrons: the Baltic squadron, commanded by admiral Siniavine; the Archipelago, commanded by vice-admiral Heyden; and the Fleet in the Black sea, commanded by admiral Greig.

Baltic and Archipelago Squadrons, 15 Line of Battle.—Peter the Great, 110; Alexander, 110; 13 two-deckers 74 guns—13 frigates of 44; 2 corvettes of 24; and 5 brigs of 18 guns.

Black Sea Fleet, 15 Line of Battle.—Paris, 110; Francis I. 110; 4 two-deckers of 84; 6 do. 74; 3 do. 60 guns.—5 frigates of 44; 7 corvettes of 20 guns; 7 Brigantines, 6 cutters, 50 schooners, 120 gun-boats, 20 gallies, 25 floating batteries.

The navy is manned by 35,000 men, including 3,000 artillery men, and 9,000 troops or marines.

WHALES AND PRUSSIC ACID.—A new whaling harpoon has just been invented, at the point of which there is a cavity, in which is placed a quantity of prussic acid. The harpoon having been cast, the whale starts back, and, upon re-acting upon the line attached to the harpoon, the vial is crushed, and, its fatal contents mingling with his blood, very soon destroys his life.

We have extracted the foregoing from the Hull packet. Our readers will find an account of this plan by the inventor, Mr. John Lewthwaite of Rotherhithe, in our third volume, p. 48 for 1834, and a further notice of it in the preceding volume, p. 741.

SYMINGTON'S PADDLE-WHEELS.*—The Lord Mayor, accompanied by several shipowners, engineers, and other gentlemen, proceeded down the river on board the Wm. Symington steam-boat, to obtain a practical knowledge of Symington's patent paddle-wheels, for the exhibition of which the boat has been built. The experiment proved highly satisfactory to all present, and induced a hope that the period is not distant when steam navigation shall no longer be incompatible with the security of life and safety of small craft upon our rivers.—*Morning Herald.*

* See a previous notice of this wheel in our 3d vol. p. 757. We congratulate Mr. Symington on his success.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

Continued from Vol. iv. page 765.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
1	Abeona			Newfndld.	Scatterie	12 Nov.	Crew saved.
2	Agnes	Malcolm	StPetersbg.	London	I. Amack	2 Nov.	Crew saved.
3	Albion	Ryan	Limerick		Ireland	26 Nov.	Crew lost.
4	Amelia	Kinsment	London	Metia	Trinity B.	Oct.	
5	Asia	Heselton	Calcutta	London	Saugor I.	25 Aug.	Crew saved.
6	Argus		Quebec	Plymouth	Off St.Peters	29 Oct.	Abandoned.
7	Aurora		Bathurst		Brijon Island	Sept.	Crew saved.
8	BenjaminShaw	Watkins*					
9	Civilian	R. Lawson	StJohn NB	Hull	At Sea	29 Nov.	Abandoned.
10	Collins	OfMaryprt.	Quebec	Liverpool	Dunmore	24 Nov.	
11	Cora	Whitley	Liverpool	B. Ayres	R. Plate	18 Sept	Crew saved.
12	David	London	Perth	London	Palling	20 Jan.	Crew saved.
13	Dickenfield	Jackson	Mirimichi	Scarboro'	At Sea	Nov.	Abandoned.
14	Earl Kellie	Hindmarsh	Quebec	London	At Sea	3 Dec.	9 saved.
15	Eleanor	Todd	Loudon	Liverpool	Wexford	23 Jan.	Crew saved.
16	Elgin				Off Ostend	Nov.	
17	Elizabeth		London		Richebucto	30 Sept.	All lost.
18	Elizabeth	March	Of New-	foundland	Trinity B.	3 Dec.	All lost.
19	Elizabeth	Fielding	Gaspé	Jersey	I. Parsea	Nov.	Crew saved.
20	Emblem		Scarboro'	Odessa	Off Odessa		Crew saved.
21	Emerald Isle		Charleston	Liverpool	StGeo.Chanl.	Jan.	Crew lost.
22	Enchantress	Roxburgh	London	Hobart T.	D'EntrecaCh		
23	Endeavour	Douglas	Quebec	Liverpool	St. Lawrence	2 Dec.	Abandoned.
24	Fanny		Of New-	foundland	Trinity B.	3 Dec.	All lost.
25	Fanny		Hull		C. Norfolk		
26	Fidelity	Bryant	Teignmth.	Dartmouth	Mewstone	28 Nov.	Crew saved.
27	Fisher				North Sea	26 Oct.	
28	Five Sisters	Stoneman	Of New-	foundland	Trinity B.	3 Dec	Crew saved.
29	FrancesSpeight	Gorman	StJohn.NB	Limerick	At Sea	Dec.	Crew saved.
30	FriendsAdvntr		Newcastle		C. Norfolk		
31	George	Waterhouse	OfBideford	Antigua	At Sea	8 Nov.	Abandoned.
32	GovernorKing	Hidden	Bath	Sydney	Mira B.	14 Nov	Crew saved.
33	Greyhound	Angove	Helford	Plymouth	Off Falmouth	25 Nov.	Crew saved.
34	Happy Jack	Chambers			St. Michael's	27 Dec.	1 saved.
35	Hardings		Stranraer	Liverpool	Whitehaven	23 Jan.	2 saved.
36	Harmony				At Sea	24 Nov.	Abandoned.
37	Harriet		Petersburg.	Liverpool	Bruham	9 Nov.	
38	Hebron		Dublin	StAndrew's	Waterford	22 Nov.	Crew saved.
39	Helen	Cheeseman		Shoreham	Herd Sand	Nov.	Crew saved.
40	Home	Duncan	Quebec		At Sea	Nov.	Crew saved.
41	Hunter	Murray	Liverpool	Bathurst	St. Paul's I.	21 Sept.	Crew saved.
42	Indian Lass						
43	Industry		Shields	Dundee	Goa Sands	2 Nov.	
44	J. Miller	Ramsay	Liverpool	Savana	Off Flores	25 Nov.	Crew saved.
45	John Betts		Liverpool	Philadelph.	Nova Scotia	1 Dec.	Crew saved.
46	John Thomas	Patterson	Quebec	Belfast	At Sea	18 Dec.	Abandoned.
47	Lark	Cook	Yrmth.NS	Berbice	At Sea	31 Oct.	Abandoned.
48	Leonard		Of New-	foundland	Placentia B.	Dec.	Crew saved.
49	Lyra		Plymouth		At Sea	31 Oct.	Abandoned.
50	Majestic	Smith	N. Orleans	Liverpool	KayWest	15 Sept.	Crew saved.
51	Margaret	Coulthard	Chaleur	Ayr	St. Paul's I.	22 Oct.	Crew saved.
52	Margt.&Emili	Thompson	Quebec	Limerick	At Sea	9 Nov.	Abandoned.
53	Mariner		Frazerbrgh		Aberdeen	Nov.	Crew saved.
54	Mary	Of Maryprt.	Bristol	Glasgow	C. Wales	16 Jan.	Crew saved.
55	Medway	Robinson	Newcastle	Liverpool	Off Liverpool	15 Jan.	1 drowned.
56	Neva	Peck	Cork	Sydney.	Bass. Strait	14 May	224 lives lost.
57	New Felix	Miller	Liverpool	Havana	Guanakay	19 Sept.	Crew saved.
58	Nimble	Johnston	Newcastle	Dublin	Stornaway	3 Dec.	
59	Norman		Of New-	foundland	Plactia B.	Dec.	Crew saved.
60	Ocean		Quebec	London	Bay 7 Islands	7 Sept.	
61	Perseverance		Of New-	foundland	Togo	Dec.	
62	PrinceFerdnd.		Liverpool	Leghorn	Blkwtr. Bank	3 Nov.	Crew saved.
63	Providence		Aberystwth	Liverpool	Galway Bay		
64	Qun. Adelaide		Quebec	Sunderland	At Sea	6 Dec.	Abandoned.
65	Resolution					Dec.	
66	Robert & Ann		Cardiff	Liverpool	At Sea	4 Nov.	Abandoned.
67	St. David		Quebec	Plymouth	At Sea	Nov.	Abandoned.
68	St. Domingo	Corran	Killough	Belfast	P. Nessock	4 Jan.	Crew saved.
69	Sarah	Webber	Charente	Bristol	Rochelle	Nov.	Crew saved.
70	Stephen Gee				Aldboro'	Nov.	Crew saved.
71	Susan Crane	Stewart	Gloucester	StJohn.NB	C. Sable	8 Dec.	Crew saved.
72	Thetis		M. Video	Liverpool	Corvo	Nov.	Crew saved.
73	Thomas	Tweedie	Laguna		India Cave	Sept.	
74	Triune		Goole		Co. Norfolk		
75	Two Brothers	Sims	Sunderland	London	Supposed	19 Dec.	Foundered.
76	UnitedFriends	Courtney	Bristol	Glasgow	At Sea	20 Nov.	Foundered, crw.sd.
77	Venus						Crew saved.
78	Vicissitude	Davidson	Perth	London	Shipwash	16 Nov.	Crew saved.
79	Violet	Calder	Cadiz	Hull	Trepasses	1 Nov.	Crew lost, except 1.
80	W. Allen		Belfast	Jamaica	Portpatrick	23 Jan.	6 saved.

* Not heard of since 6th Nov. for Aberystwith. Wreck fallen in with 3d Dec. lat. 42½, long. 46½.

Births.

On the 10th of January, at Brunswick-place, Stoke, the lady of Captain George Pierce, R.N., of a son.

On the 18th of January, at Kingston, the lady of Lieut. White, R.N., of a son.

Marriages.

At Great Marylebone Church, Lord Colchester, Captain of the Royal Navy, to the Honourable Elizabeth Susan Law, second daughter of the late Lord Ellenborough.

On the 12th of January, at Budock, by the Ven. Archdeacon Sheepshanks, Mr. F. D. S. Edwards, Master of H. M. packet. Plover, to Hannah, eldest daughter of Mr. Thomas Dryden, of Falmouth.

Deaths.

On the 27th Jan., John Ferrier, Esq. Admiral of the Blue, aged 77.

At Weymouth, on the 9th of Jan., Com. P. R. Minster.

January, Lieut. John Burnett, R. N. (1827.)

On the 10th of January, at Topsham, Lieut. Robert Follet, R.N.

Lately, at Dartmouth, Mr. John Woolcock, Mast. R.N. (1811), aged 58.

Drowned, on the 13th of January, at Liverpool, Lieut. Joseph Walker, R. N. (1815) aged 64.

On the 13th of Nov. last, at Halifax, Mr. Wm. Hudson, Master, R.N, (1793) aged 64.

On the 13th of January, Lieutenant J. G. Osborne, R.N., aged 47.

In London, aged 45, Lieut. James Reed, R.N.

On the 16th of Jan. in Davies-street, Berkely-square, London, John Pratt, Esq., Purser, R.N. (1804), aged 60.

At Cambridge, Lieut. R. Nicholson, R.N. (1810.)

On the 13th Jan., at Hammersmith, George Manners Sutton, Esq., Com. R.N., aged 49.

Caution to Shipmasters.—In going to any port in Russia, shipmasters cannot be too cautious of what materials their utensils are formed, as an instance has come to our knowledge of a penalty of ten pounds being levied for an infringement of the laws in this respect. The vessel in question had been in the West India trade, and the backs of a couple of green turtles had been for some time used for the shakings of rope yarn, or as dust-pans, a common practice with vessels in this trade. On the vessel's arrival at a Russian port, a keen eye was kept on the turtle backs, and the master of the vessel was at last told he was fined as many roubles as amounted to £10 sterling. This fine was resisted, but a clearance at the Custom-house was refused till it was forthcoming, and ultimately the shipmaster was arrested in the street by two soldiers with drawn swords, and put under confinement till the fine was paid. When a complaint was made to the British Consul, the reply given was, that the shipmaster might be thankful he had not been sent in a pleasant voyage to Siberia, for opposition to the just demands of the government.—*London Paper.*

Extract from George Colman's "Random Records," Vol. I. p. 201.

"In the adjacent village of Kirkleatham [near Gisborough] there was at this time [1775] an individual residing in a neat comfortable cottage, who excited much interest. His looks were venerable from his great age, and his deportment was above that which is usually formed among the lowly inhabitants of a hamlet. How he had acquired this air of superiority over his neighbours it is difficult to say, for his origin must have been humble. His eightieth summer had nearly passed away; and only two or three years previously, he had learned to read, that he might gratify a parent's pride and love, by perusing his son's first voyage round the world!—he was the father of Captain Cook.

How to discover a Leak at Sea.—In a frigate in which the author had served, this fact was somewhat paradoxically *defined* by a lieutenant of the ship, a native of the Sister Isle. The ship, during a heavy gale of wind, struck upon a dangerous shoal; six feet water was soon in the frigate's hold; and, upon the captain's expressing his apprehension that the "people at the pumps could not possibly *keep the ship free*," the Milesian lieutenant immediately replied—"Don't be *unaisy*, sir,—the *more* that comes in, the *less* there'll be!"—— This Hibernianism produced a laugh, though it was no laughing matter. Still, upon further inquiry, Pat's theory, bordering as it was upon the *bull*, was, nevertheless, discovered to be founded upon philosophical principles. The truth is, the lieutenant "was no fool;" his object was to produce a laugh, and to put to the test of truth the old adage, "Let those laugh that win." They did *win*. The people gained on the leak.—*Capt. Glascock's Officer's Manual.*

Meteorological Register, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

JANUARY, 1836.

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.	30·26	30·38	31	26	18	32	E.	N.E.	7	7	Os (2)	Os (3)
2	S.	30·64	30·63	16	25	13	32	E.	S.	3	3	B.	Os 4)
3	Su.	30·51	30·45	36	41	32	42	S.W.	S.W.	3	3	Bcq.	Bcq.
4	M.	30·21	30·19	45	47	43	48	S.W.	S.W.	6	7	Qod (2)	Qod (3)
5	Tu.	30·24	30·26	44	50	42	50	S.W.	S.W.	3	3	O.	O.
6	W.	30·23	30·19	44	47	43	48	S.W.	S.W.	1	1	Od 2)	Od (3
7	Th.	29·92	29·90	36	37	32	38	S.E.	S.	3	3	O.	Od (3)
8	F.	29·98	29·98	39	40	34	40	S.	S.E.	2	3	O.	Bc.
9	S.	29·97	29·91	29	32	28	33	E.	E.	3	3	F.	Ops (4)
10	Su.	29·65	29·40	32	33	31	33	E.	E.	4	6	O.	Os (3) (4
11	M.	29·28	29·28	31	34	30	35	S.W.	S.W.	5	6	Bcm.	Bcmqrs (4)
12	Tu.	29·42	29·44	28	35	27	36	S.W.	S.W.	3	3	B.	B.
13	W.	29·83	29·85	30	38	27	39	S.W.	S.W.	3	7	B.	Bcqp (3
14	Th.	29·92	29·86	44	47	37	49	S.W.	S.W.	6	8	Qo.	Q o.
15	F.	29·48	29·46	39	41	39	42	W.	W.	7	5	Qr (2)	Q`b c.
16	S.	30·14	30·20	31	37	30	38	N.W.	N.W.	3	3	" B.	B.
17	Su.	30·30	30·30	31	39	30	40	N.W.	N.W.	5	5	Bm.	Bm.
18	M.	30·26	30·10	35	40	30	46	N.W.	N.W.	4	6	O.	Oq.
19	Tu.	30·26	30·32	31	37	28	38	N.E.	N.E.	1	1	B.	B.
20	W.	30·27	30·21	36	42	28	43	S.W.	S.W.	3	4	Go.	Go.
21	Th.	29·88	29·77	32	39	32	40	S.	S.	5	5	O.	O.
22	F.	29·55	29·61	42	38	37	49	S.	S.W.	5	8	Oqqd (2)	Qop (4)
23	S.	29·45	29·61	52	54	49	55	S.W.	S.W.	9	8	Qp (1)	Bcq.
24	Su.	30·04	30·14	43	48	42	50	S.W.	S.W.	4	3	`B.	O.
25	M.	30·37	30·39	40	43	39	45	S.W.	S.W.	1	1	Bcm.	Bcm.
26	Tu.	30·35	30·15	41	45	36	46	S.W.	S.W.	5	5	O.	O.
27	W.	30·06	29·98	42	44	37	45	S.W.	S.W.	5	7	Op (2	Bcq.
28	Th.	29·76	29·66	43	47	40	48	S.W.	S.W.	5	6	Bc.	Qprh 4)
29	F.	29·50	29·36	36	40	32	42	S.W.	S.W.	7	7	Qbc.	Qrs (4
30	S.	29·08	29·24	37	43	31	43	S.W.	N.W.	7	8	Bcqps 2)	Qbc.
31	Su.	29·47	29·17	36	48	31	49	N.W.	S.W.	6	6	Oqr (2)	Oqr (3)

January—Mean height of Barometer=29·946 inches: Mean Temperature=37·8 degrees; Depth of Rain fallen=1·70 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

ORIGINAL PAPERS.

April, 1836.

To the Editor of the Nautical Magazine.

East India House, 23d Feb. 1836.

Sir,—The Court of Directors of the East India Company having received from the government of Bengal an amended notice of the position in which ships may expect to find pilots at the Sand Heads at each season of the year, dated 6th July last, I am commanded to transmit to you a copy thereof, for the purpose of insertion in the Nautical Magazine, for the information of mariners. I am, Sir, your most obedient humble Servant,

James C. Melvill.

Notice.—Position in which Ships bound to Calcutta may expect to find Pilots at each Season of the Year.

References having been made to the Marine Board, with a view to ascertain the position in which pilot vessels may be expected to be found at the different seasons of the year, the following is published for general information.

During the south-west monsoon, from the 15th of March till the 15th of September, the pilot vessels cruise during the day off Point Palmyras, anchoring during the night in a line east and west, in latitude 20° 42′ to 20° 48′ north, with the light on the Point, bearing west to west by south. If, however, about the beginning of September the wind comes from the eastward, or the weather assumes a threatening appearance, the pilot vessels haul off to the eastward, and may be found in a line between the Light on the Point and the Floating Light Vessel.

From the 15th of September to the 15th of March, the pilot vessels cruise during the day between Saugor Sand and Western Sea Reef, anchoring in the night east and west of each other, latitude 21° to 21° 10′ north.

Vessels approaching the station, on seeing the pilot vessels, are requested in the day to make for that vessel, on board of which they will see a large red flag flying at the main, whenever they can do so without great inconvenience or delay. In the night, the vessel having the next turn pilot on board, is ordered to burn a maroon every hour, and in thick weather every half hour; and vessels are requested in like manner to seek their pilot in the night from that vessel: it being understood, however, that any pilot vessel, which may be first seen, is bound immediately to use every exertion to put a pilot on board, night or day, without referring to any turns or rotation, and that this latter is only allowed when no delay is occasioned thereby.

By order of the Marine Board,

Fort William,
6th July, 1835.

(Signed,) Charles B. Greenlaw,
Secretary.

NOTES MADE IN HIS MAJESTY'S KETCH BASILISK, *on her passage from Rio Janeiro to Valparaiso, through the Strait of Magellan.*

WE sailed from Rio Janeiro on the 6th July. On the 9th, finding the weather was undergoing a change, I disencumbered the vessel of her lofty spars; this I was induced to from understanding that the region through which I had to pass was a boisterous one, and the result proved its propriety. On the parallel of the river Plate, as usual, we experienced a heavy gale from N.E.; the day following the gale veered to N.W., and ultimately moderated in the S.W. quarter, between which and N.W. it continued till our arrival at Berkly Sound on the 25th. The general feature of the wind between the river Plate and the Falkland Islands, was that of considerable force, invariably commencing in the N.W. and ending in the S.W.; the duration of the former being one day to three of the latter, in general. In rounding the Volunteer Rocks off Cape Vincent, entrance of Berkly Sound, H. M. ketch nearly ran on a rock, which only broke in the hollow of the sea, situated about half a mile north-east of the outermost Volunteer Rock. I have since learnt this is the same on which the French corvette Uranie was wrecked, and, as its position is now well known, no further remark from me is necessary. It does not appear in the chart with which H.M. ketch is supplied; but in beating into the sound, I found its general feature to be correct.

Having completed the water (since found to be brackish) I proceeded on Tuesday the 28th to sea. While proceeding out of the sound, the weather became thick and rainy in the S.E. quarter, and soon freshened up to a gale; and it was with some anxiety, and a press of sail, that I was enabled to weather the rocks off Cape Vincent at 7 h. 30 m. P.M. I determined on taking advantage of the breeze, and to pass to the northward of the islands, so as to make westing. The next morning, on sighting the Sebaldines, H.M.S. North Star was not in sight, and, acting on my discretion and responsibility, I determined on making the best of my way to Cape Virgins, and pass to the Pacific through the Straits of Magellan; pursuing this course to avoid the tempestuous weather generally experienced off Cape Horn, as well as being impressed with the idea that this strait is a much shorter and less dangerous route to the Pacific.

The chart and directions with which H.M. ketch is supplied are those of Captain P. P. King. In approaching Cape Virgins, the lead and nature of soundings are of the utmost consequence, as in such high latitudes the sun is not always to be seen, though in this instance we were fortunate in having an altitude at noon of the 31st, being then ninety miles from the Cape, in nearing which at

midnight we found the soundings *fine dark-grey sand*, from thirty-three to twenty-six fathoms. I think this important point of making the land requires to be enlarged on, the depth and nature of the soundings clearly pointed out, so that Cape Virgins may not be mistaken in the absence of the sun.

At 7 A.M. of the 1st of August, we bore up for Cape Virgins, distant two or three miles south-west, and easily recognized it from Captain King's description: the small reef off its point was breaking for about three-quarters of a mile, and, rounding it, the low shingly point of Dungeness presented itself to the southward, to which we directed our course, giving it a reasonable berth. The wind now came strong from W. by S., directly contrary, but against part of a tide, and with a whole one, we gained an anchorage off Cape Possession, at 7 P.M. in seventeen fathoms, sandy bottom, the cape north (Mag.) five miles. In turning to windward, I recommend making short tacks on the north shore, as mid-channel presented a short hollow sea.

On Dungeness Point we saw several walrusses, which at a distance had the appearance of troops of horses, but at our approach to tack they fled to the water. Higher up, towards Cape Possession, we saw a large herd of the guanaco feeding, but they also were disturbed at our approach, and fled in terror. The tide off Cape Possession ran about three knots, and we judged it to be high-water at 5 h. 30 m. P.M., the moon's age seven days.

The following morning, the 2d of August, we weighed, with a fine breeze from N.E., intending to stem the tide to the first Narrows, but ere we reached half way the breeze failed us, and we were just enabled to hold our own, till the return of tide at noon, which brought with it a fresh breeze from west, and with such we soon passed the first Narrows, and anchored for the night in St. Jago Bay, half way to the second Narrows. During the night it blew a gale from S.W., which caused a short heavy sea, that point of the compass being the most exposed.

We observed fires on the beach, from which we inferred the approach of natives, whom the following morning we saw, principally on horseback, having a large pack of hounds, resembling very much our English fox-hound. I much regret the state of the weather did not enable me to land, of which the natives seemed desirous, from their signs, and frequently raising a volume of smoke, which we now understand to be an invitation to land. On weighing at noon with the tide, we made short tacks close to the shore, the natives accompanying our course, which afforded me an opportunity of seeing them closely. They appeared a fine race of men, though not of that extraordinary stature usually attributed to them. They wore skins from head to foot, and their horses appeared well bred, some of whom resembled the Arab in size and make. The breeze now coming favourable, and tide strong, we

gradually withdrew from our companions, and, passing through the second Narrows, anchored soon after dark off Peckett's Harbour, which, according to Captain King, seems to be the head-quarters of the Indians.

Our anchorage was in four fathoms and a half, between the harbour and the north-east end of Elizabeth Island; and, in coming through the second Narrows we had no difficulty in recognizing every headland, and came to our anchorage in perfect confidence, with which I had now armed myself, from finding Captain King's directions so explicit and minute in minor points, which latter tends to remove a doubt of any particular place. The coast is well delineated, the depths and nature of soundings perfect, as well as the various bearings of headlands, shoals, tides, &c. The whole claim my admiration, and, with such guides as his chart and book, no one need fear.*

The following morning (Aug. 4) we weighed, with a strong breeze at west, and passed to the southward, through the strait that divides Elizabeth Island from Porpoise Point, (or Cape Negro,) and kept mid-channel, according to direction. In passing along the highland, we experienced those sudden gusts of wind of which Captain King warns us (the "Williwaws.") They blow the spray of the sea constantly in a foam over the bulwark, until you arrive at Port Famine, a fine anchorage nearly half-way through the straits, and where we anchored at 3 P.M. It is here where the few vessels that pass, stop to procure wood and water; and of the former we found abundance, and staid twenty-four hours to procure a supply. In different parts of the bay we found several tombstones, indicating the resting-place of those who had paid the debt of nature in this region: among others, was that of Captain Stokes, of the Beagle, and three seamen, and of several persons of the Adventure, as well as of sealing vessels. I think whoever named this anchorage did so very appropos, for, with the exception of wood and water, nothing but famine stares you in the face. This day's work was about forty-five miles sailing along the land, the wind blowing off. The face of the country assumed a very different appearance from that of the preceding three days, (or that portion between Cape Virgins and Laredo Bay,) being hilly and woody, and no traces whatever of inhabitants; yet the beautiful bays by which we passed afforded a picturesque scenery, forming a contrast to the surrounding hills.

On the 5th August we weighed at daylight, with a light breeze from west, the weather more like summer than winter. During the afternoon we had some squalls of hail and snow off Mount Tarn and Nodules Peak, but the barometer being high (29·60)

* We have much satisfaction in calling the attention of our readers, and particularly that of our merchant commanders, to the above eulogium of Captain King's charts and directions.

and the moon bright, I determined on keeping under way all night, which proved fine, and at 8 A.M. of the 7th we were close to Cape Holland. The weather now altered to violent squalls of snow from the S.W., but at 2 P.M. we anchored in Fortescue Bay, the small islet W. N.W. a quarter of a mile. This day's work was fifty-one miles against the wind. The weather in the afternoon, and during night, proved a series of squalls of snow and hail, and I was glad in having attained so good an anchorage as Fortescue Bay, inside of which there is a beautiful sheltered harbour called Port Gallant, which in the evening I visited, and found its shores to abound with wild duck.

From Port Famine to Fortescue Bay, I did not find the stream of tide to be of that strength as to make it imperative on a good sailing vessel to anchor, arising probably from this portion of the strait being wide, and of great depth; but farther on, through English and Crooked Reaches, from their circumscribed bounds, the case was different, for, against a tide in these reaches, I am doubtful if the best sailing-vessel could make head.

On the following morning, the 8th, we weighed, with a favourable tide, and against a strong S.W. wind, and snow-squalls so dense as occasionally to obscure the jib-boom. We gained the anchorage of Borjie Bay in Crooked Reach, the most beautiful and snug we had yet met. This was our most boisterous day, yet we had occasionally clear weather, which enabled us to ascertain our position. The land about Borjie Bay is very high, and not unworthy of being considered the termination of the Andes, said to extend to the Straits of Magellan. The mountains by which we came from Cape Negro to Cape Pillar are covered with snow, while their base is green with brush-wood. The soil is in general rocky, and wherever a plain patch may intervene, there the soil is black and hollow to the step, with thick coarse grass growing. The other portion of the strait between Cape Negro and Cape Virgins, assumes a very different aspect, being flat, and apparently fertile, and that portion only where we saw man and beast, a proof of its possessing subsistence.

On Sunday morning the 9th we weighed from Borjie Bay, with a light breeze from S.S.W., and on coming outside the Ortis Islands encountered a strong current setting eastward, and it took us two hours ere we could round Cape Quod. After which we steered W. ½ N. down Long Reach, with a fine breeze and clear weather, the thermometer varying this morning between 29 and 34, and the barometer as high as 29·95, indicating fine weather and south-easterly winds. Long Reach being only two and a half to three miles wide, afforded us a perfect view of all the bays and inlets with which it abounds. The land on both sides is mountainous and spiry, under which we were occasionally becalmed, but the breezes out of the valleys enabled us to proceed. This of

the 9th was one of our most pleasant days, the water as smooth as glass, and the sail reminded me of the Canal of "Mamoudie," running from the Nile to Alexandria, forty-eight miles long and ninety feet wide, by which I passed in a canju, or boat, in eight hours. With the exception of the height of the land, this reach has some resemblance to it, that is to say, as far as a straight course through a narrow reach may resemble it. In the afternoon it fell calm; but from the gradual rising of the barometer there was every appearance of an easterly wind, which at sunset we saw coming down the reach, and gradually freshening through the night. At 8 the following morning we passed Cape Pillar, and entered the Pacific Ocean, encountering a long swell from the S.W., being just nine days from passing Cape Virgins, including the day at Port Famine. Two-thirds of this distance was against strong S.W. winds, from Cape Virgins to Cape Quod, and the other third with a fair wind from east, the weather as fine as can be imagined. The night of the 9th being as clear as day, we readily recognized the various headlands of Capes Tamar, Providence, and Parker. The opposite shore of Tierra del Fuego was high, barren, and rugged, and I think not inappropriately termed "the Land of Desolation."

In having now passed through the Straits of Magellan, I am called on to bear testimony to the correctness of the charts and book of Captain King; and with such excellent guides, no one can meet with accident, but from neglect. His description of that important branch, "*the tides*" eastward of Cape Froward, is quite clear and perfect, but westward of that not so. He says, "At Cape Froward the ebb sets northward, and flood southward," &c. Now this portion of the strait runs nearly due west and east (Mag.) to the Jerome Channel. We found the flowing tide to run westward between Cape Holland and Fortescue Bay, and seemed to fail us at 2 P.M., the moon's age being then twelve days. Next day we found a strong flood-tide westward, as far as Cape Cross-tide, near to Borjie Bay, and then lost sight of its further progress, having from thence encountered a set to the eastward, which seems unaccountable, not knowing how the flood disposes of itself on reaching this point.

I have another observation to make relative to a patch of kelp lying E. by N. (Mag.) of Cape Quod one mile and a half, which appeared shoaled or rocky, and induced me to tack on its edge; on looking over the addenda to Captain King's book, I found it mentioned, stating it had only nine feet water. I had therefore a narrow escape. Its position should be generally known, though it is somewhat out of the fair-way of ships rounding Cape Quod.

From all I have read and heard of the straits, I am inclined to believe this our passage through, was of a more favourable nature than may generally occur, particularly in clearing the straits with

an easterly wind; yet I think the dangers and terrors generally set forth have been greatly exaggerated, and I should not hesitate to undertake the safe-conduct of any ship in the British Navy, at any time of the year, through the Straits of Magellan. It also appears a much shorter route in time; for the ship that sailed in company with us from the Falklands has not yet arrived here: and to this should be added the avoiding a heavy sea, and floating ice, generally experienced round Cape Horn; for, had we been exposed off Staten Land to the strong S.W. winds experienced in the straits from the 1st to the 8th of August, we should have been compelled in all probability to stand to the southward, to perhaps 62°, and would on the wind's coming fair be about eight hundred miles from Cape Pillar, whereas in the present instance this distance was gained. It therefore appears to me, that, were this route made available generally, it would be ultimately attended with many benefits, and might open an introduction to British commerce and industry, and tend to sow the seeds of civilization and knowledge among a fine race, who claim this in as great a degree as those among whom we are diffusing them in other regions. This beautiful strait is admirably adapted to commerce, abounding with safe harbours and anchorages, affording in this early stage abundance of fuel and water, to which may be added the guanaco beef, for the natives finding that this their strait was generally resorted to, would soon enter into a species of commerce by barter; and from small beginnings of this nature great results might ultimately follow. As to the soil, and its capabilities of improvement, I had not an opportunity of ascertaining, other than that the portion between Cape Virgins and Laredo Bay appeared fertilized plains, and, being the resort of man and beast, it is reasonable to suppose it has subsistence for them.

On the Gales and Hurricanes of the Western Atlantic.

By W. C. Redfield.

To the Editor of the Nautical Magazine.

As an accurate knowledge of the dangers to which the navigator is liable, is of the first importance to the nautical profession, I trust that you will permit a trans-atlantic friend to call your attention to an error, relating to the storms of the Atlantic, which has found its way into Purdy's Memoir of the Atlantic Ocean, and has also been copied from that useful manual, into the nautical books of other countries.

The error alluded to, is contained in the following paragraph:—

"In the year 1782, at the time the Ville de Paris, Centaur, "Ramilies, and several other ships of war, either foundered, or "were rendered unserviceable, on or near the banks, together

" with a whole fleet of West Indiamen, excepting five or six, " they were all lying-to, with a hurricane from west; the wind " shifted in an instant to east, and blew equally heavy, and every " ship lying-to, under a square course, foundered." *Memoir of the Atlantic, 7th edition, page* 96.

In the examination which I have been led to make of the storms of the Western Atlantic, I have found them to pursue a generally uniform course, which is always north-westerly, in the tropical latitudes, and till they approach the latitude of 30° N. In the vicinity of this parallel, the storms turn to the northward, and their course then becomes north-easterly, on a track which appears to incline gradually to the east, as they sweep over the higher latitudes of the Atlantic. The course thus pursued, is entirely independent of the direction of wind which the storm may exhibit at the different points over which it passes; the wind, in all such storms, being found to blow after the manner of a whirlwind, around a common centre or vortex, during their entire progress, in a circuit which is commensurate with the lateral extent of the storm; and in a determinate direction or course of rotation, which is from right to left, (that is, in the direction from north to west,) horizontally.

From this uniform and regular rotative action, result certain regular phases or characteristic changes, which are peculiar to the opposite margins or longitudinal sections of the track of each and all of these storms.*

At an early period of the inquiry, however, I was met by the statement above quoted from the Atlantic Memoir, which, by the direction and change of wind therein mentioned, seemed to indicate that this region of the Atlantic had been visited by at least one storm of a different character. Such, however, was the remarkable uniformity presented to my view in the phenomena of the storms which were investigated, that I was led, at length, to suspect some error in the above statement, and, on further inquiry, I soon found my doubts fully justified. I have now before me several printed authorities of that period, from which it appears that the first part of the hurricane in question, was from *E.S.E.* and that it shifted suddenly to *N.N.W.*†

* See American Coast Pilot, 12th edition, page 626, 629: or the American Journal of Science and Arts, vol. xxv. page 114, 121.

† *Extract from the Journal of an Officer on board the Ramilies.*

" September 16th, 1782. At noon, lat. 42° 15′ lon. 48° 55′, wind at E.S.E., blowing fresh; 1 P.M. gale increased, hazy weather; at 3 took in sails: at 6 P.M. gale very strong; brought-to under the mainsail. Midnight, three and a half feet water in the hold; gale E.S.E., exceeding strong: at 2 A.M. on the 17th, heavy rain and squally: at 3 A.M. the wind shifted; a violent squall from the N.N.W. without the smallest warning of a shift, took the mainsail aback; the mainmast, mizenmast, fore-topmast, and fore-yard, carried over the ship's side, and the tiller broke: water 4 feet 4 inches, and gaining on us: at daylight,

It appears, therefore, that instead of blowing, as described in the Memoir, this gale exhibited the usual characteristics of the Atlantic hurricanes.

If the movements of the atmosphere in these storms were of that vague and erratic character that has usually been assigned to them, the above correction would be of little importance. But, notwithstanding the supposed, and even proverbial uncertainty of the winds, navigators may be assured, that they will never, in the temperate latitudes of the Atlantic, encounter a gale which shall blow violently from the west and then shift suddenly to the east.

This cannot happen until storms shall be found in this region, pursuing a retrograde course, or else spinning from left to right, instead of from right to left, as they have heretofore done; or, in other words, till a new system of terrestrial physics shall have been established by the Great Author of nature.

The interest of this subject to navigators, and the neglect into which this branch of philosophical inquiry has been suffered to fall, will be a sufficient apology for some additional remarks on these storms.

Those who adopt the views which I have maintained on this subject, will, doubtless, be able to explain in a satisfactory manner, the facts which are contained in the following statement, found in the paragraph next preceding that which we have quoted from the Memoir; namely, "That while one vessel has been lying-to in a heavy gale of wind, another, not more than thirty leagues distant, has at the very same time been in another gale equally heavy, and lying-to with the wind in quite an opposite direction."

This statement is obviously to be understood as applicable to two vessels falling under the two opposite sides or portions of the same storm, where the wind in its regular circuit of rotation, must, of course, blow from opposite quarters of the horizon. We will suppose one of the vessels to be at A and the other at B, in the annexed figure.* The storm in pursuing its course from W towards k, will strike the first-mentioned vessel in the direction which is shewn by the wind-arrows at the point c, which, if the

5 feet 8 inches, and gaining, ship labouring in great distress: at 5 A.M. one of the convoy foundered close to us; several near us dismasted, and signals of distress making from all: a prodigious swell of the sea, and heavy gale from N.W.: at 10 A.M. hard gale from N.W. and prodigious swell; six feet water in the hold; afternoon, threw guns overboard, &c.

A letter from Captain Edwards, who commanded one of the convoy which foundered after the storm, states the early part of the gale to have been from S.E by E. and the shift to have been to N.W. This trifling discrepancy confirms, rather than invalidates, the general fact, and may be accounted for as a slight inaccuracy on the part of the observers, or by supposing the position of Captain Edward's ship to have been some distance to the southward and eastward of the Ramilies.

* See figure near the title in the plate.

storm be encountered in the temperate latitudes, north of 30°, will be from eastward. Now, it is obvious, that as the storm advances in its course north-eastward, this vessel, if nearly stationary, will intersect the body of the gale on the line c A d. As the storm advances, the wind must also veer to the northward, as shewn by the arrows, being at N.E. when the vessel is brought under the point A, and near the close or departure of the storm by its further progress eastward, the wind will have further veered to the direction shewn at d, which, with due allowance for the progressive motion of the storm, we will set down at N.N.W. The other vessel, as is equally obvious, will first take the wind from the southward, as shewn at e, in which quarter it will blow, with no great variation, till, by the advance of the storm, the ship is brought under the point B. The barometer, which had previously been falling, will now commence rising, and the wind, veering more westerly, will, at the departure of the storm, be found in the direction shewn at f, which, after the allowance already referred to, may be stated at W.N.W.

Such, substantially, are the facts commonly reported by vessels which fall under the lateral portions of the Atlantic storms, and it is readily seen, that the opposite winds which prevail on the two different intersections of the storm, as above described, will very naturally be mistaken for two separate and distinct gales. The phases of the wind in these gales, are, however, in all cases, modified more or less by the course or changing position of the vessel exposed to its action. For example; a ship on taking the gale, say at E.S.E. at the point h, on the figure, and lying-to with her head to the northward, may by that means be brought to intersect the storm on the line h i, and, at the point i, would suddenly be taken aback, with the wind, say at N.N.W., as in the case of the homeward-bound fleet in 1782.

A further reference to the figure will shew that a ship, which may be at the point G during the passage of the gale, would be exposed to a heavy swell from the southward and westward; but, being beyond the organized limits of the storm,* may remain

* The terms *organized* and *organization* are used by the writer in the sense in which he conceives them to be applicable to all eddies, whirlpools, and whirlwinds, and, generally, to all fluid and aerial vortices, while in a state of activity, and as involving, in the case of storms, the production of rain and all the other incidental phenomena which result from such organized action. The true character of these rotative movements, does not appear to have been closely studied by men of science, and however necessary or desirable a more correct knowledge of these movements may be, in order to a just apprehension of the subject before us, still, a discussion of their specific character, and of their agency in production of the most important atmospheric phenomena, even if the ability were possessed, would be foreign to our present object. It is believed, however, that a proper development of this subject would do much to illustrate, in a clear and satisfactory manner, the formation and production of storm-clouds and rain, and especially of summer hail, and all violent electric phenomena.

entirely unaffected by the violence of the wind, which at the same time may be raging with destructive fury at the distance of a few leagues. The writer has knowledge of many such examples.

The following passage is found in the late edition of the Atlantic Memoir, at the head of the article on Hurricanes.

"A hurricane is a tempest of the most extraordinary violence, "forming a kind of imperfect vortex, towards the centre of which "the wind proceeds, successively and abruptly, from different "points of the horizon. Of such phenomena, the most violent "and destructive in the western hemisphere, are known to ori- "ginate in or near the West Indies; and they commonly proceed, "in a cycloidal line, from their point of origin, to the W.N.W., "N.W. and N.; or if limited to the West Indian sea, from "E.S.E. to W.N.W. *as well as from W.N.W. to E.S.E.*" *Memior, page* 97, *7th edition.*

As most of this paragraph was probably intended to agree with the facts which I had formerly given in relation to these hurricanes, it will only be necessary to notice the closing statement, quoted in italics, in connection with another passage which introduces the abstract, that is given in the Memoir, of my earliest attempt to elucidate the character and course of these tempests, and particularly those of 1821 and 1830.

"With these hurricanes (says the Memoir) might have been "included the ever-memorable one of the year 1780; the latter, "it appears, commenced near the west end of Cuba. On the "3rd of October it passed over the western part of Jamaica, and "reduced Savanna la Mar to a state of desolation; it then in its "gyrations passed along the coasts of Hayti, or St. Domingo, "and Porto Rico, and it ended at Barbadoes, on the 10th of the "same month." *Memoir of the Atlantic, 7th edition, page* 101.

It must be evident that if there be no error in the statements here quoted, the systematic and uniform movements which I have considered as pertaining to at least all hurricanes which visit the western portions of the Atlantic, are liable to some decided exceptions, and it is important, therefore, that the facts of the case should be ascertained. I am confident, however, that on a full and careful inquiry, we shall find that nature has not, in this case, been regardless of her own fixed laws, and accustomed modes of action.

From such evidence as I have in my possession, it appears, that the first hurricane of October 1780, passed over the western part of Jamaica on the 3rd of that month, and that the storm commenced a few hours *earlier* at Black River and Montego Bay, than at Savanna la Mar, which is near the west end of the island; and also, that on the 4th, at half-past 5 A.M. H.M.S. Phœnix was wrecked on the island of Cuba, near Cape Cruz, a little

before the close of the gale at that point, *but several hours after its termination at Jamaica.* There are no accounts from which I can infer either the presence or absence of the storm on the more usual course down the Caribbean Sea, into the gulf of Mexico, but if, following the indications already before us, we suppose this storm to have commenced its *detour* to the northward, and which accords well with the general course of a storm of a corresponding date in the year 1830, on a more eastern meridian, we shall then recognize it as the hurricane which was encountered on the 5th of October, in the gulf of Florida, and northward of the Bahama Islands, in which many vessels were wrecked, and a squadron of H. M. Ships was entirely disabled. This storm appears, also, to have been of limited extent and duration, as compared with that which visited Barbados on the 10th, and I can find no evidence of its having pursued a retrograde or eastwardly course, while in the tropical latitudes.

The violent and extensive hurricane which desolated Barbados on the 10th of the same month, appears to have commenced at St. Lucia several hours *later* than at Barbados, and I also find that it did not take effect at the other neighbouring islands till the 11th, which is sufficient proof that this storm could not have been the same which ravaged the western parishes of Jamaica on the 3rd of the month. In its lateral extent it covered at one and the same time the entire distance between the islands of Antigua and Tobago, and it appears to have pursued the usual course or route, towards the north-west. A letter from Jamaica mentions that they had a small share of this hurricane at that island on the 12th, which is in due course of time, and accords with the extent and previous position of the gale. It appears, in its wide-spread desolations, to have dispersed a Spanish fleet off Havana on the 16th, and to have visited, with its opposite margin, the island of Bermuda, on the 18th of the same month. I have also two accounts from vessels which encountered this storm at sea on the 17th, which agree with the foregoing.

The supposed errors in the statements we have last quoted from the Memoir, seem to have arisen from mistaking two hurricanes of different dates, which passed in a north-westerly course, for one and the same storm passing eastward; or, possibly, from conceiving the direction of the wind, from a western quarter, at some one of the islands, during the first part of the storm of October 10th and 11th, as directly indicating the route of the gale; a very natural conclusion, and one that is, perhaps, identified with all our preconceived associations on this subject. It is by this instinctive association that most writers appear to be governed, in their accounts of violent storms, but, than which, in its application to the point before us, nothing can be more fallacious and unfounded, as the history in detail of all such storms will certainly

show. So strong, indeed, is the influence of our established modes of thinking on this subject, that it seems to be difficult, even for those who admit the rotative character of these hurricanes, to understand correctly the true bearing and relations of the different phases of the wind, which are presented at two or more points or places visited by the same storm, unless the subject has been thoroughly and carefully studied. Speculative opinions, also, upon the course of a storm, are, usually, if not always, founded upon the erroneous notion of a rectilinear course in the wind. In the accounts received of the hurricane at Barbados on the 3rd of September 1835, which raged for a few hours from E.N.E. fears were expressed for the safety of the islands to the northward; but subsequent intelligence from Guadaloupe and Martinico, shewed that the gale had not extended to these islands. Had the direction and phases of the wind been viewed in their true relations, it would have been perceived that the heart of the gale must have passed to the southward of Barbados; and, as a general rule in the West India latitudes, where the onset of the storm is found to be in the general direction of the trade-wind, or more eastward, the observer may consider himself as under the northern verge of the gale; but if the onset of the gale be from the north-westward, veering afterwards by west to the southern quarter, the heart of the storm will be found to have passed to the northward of the point of observation, the latter being under the southern margin of the gale.

Among other proofs of the circuitous or curvilinear course of violent winds, is the fact that the track of a vessel which runs directly before the gale, will, in many cases, be found to be strikingly curvilinear when traced on the chart; in other words, the veering of the wind, which so often occurs, when duly considered, is, in itself, a complete demonstration of the fact in question. Many readers will recollect the case of a vessel driven from Falmouth in the great hurricane of 1703, by a circuitous course to the Isle of Wight, with only a cabin-boy on board, which course clearly indicates the phases of one marginal section of that memorable storm. It can but seldom happen, however, that the track of a vessel which scuds through a gale, will fully develope the entire circuit of the wind, the combination of circumstances necessary to this result being but rarely encountered. Still, I have obtained notice of a few such cases, and a respectable ship-master not long since informed me that he once scudded for twenty-four hours under a typhoon in the China Sea, and, on its departure, found himself nearly in the position where he first took the gale.

In order to illustrate more fully the foregoing remarks, I annex a chart of the Western Atlantic, on which is delineated the route of several hurricanes and storms, as derived from numerous

accounts which are in my possession, by which their progress is specifically identified from day to day, during that part of their route which appears an the chart.

The route designated as No. I. is that of the hurricane which visited the islands of Trinidad, Tobago, and Grenada, on the 23rd of June, 1831. Pursuing its course through the Caribbean sea, it was subsequently encountered by H. M. Schooner Minx, and other vessels, and its swell was thrown with great force upon the south-eastern shores of Jamaica on the 25th, while passing that island, where the wind, at this time, was light from the northward. After sweeping through the Caribbean Sea, this hurricane entered upon the coast of Yucatan, on the night of June 27th, having moved over the entire route from Trinidad to the western shore of the Bay of Honduras in a little more than one hundred hours, a distance of about seventeen hundred nautical miles, which is equal to nearly seventeen miles an hour. I have no account of this storm after it crossed the peninsula of Yucatan, and it is probable that it did not again act with violence upon the ocean level. Its course or track to Honduras was N. 74° west.

Route, No. II. is that of the memorable hurricane which desolated Barbados on the night of August 10th, 1831, and which passed Porto-Rico on the 12th, Aux-Cayes, and St. Jago de Cuba on the 13th, Matanzas on the 14th, was encountered off the Tortugas on the 15th; in the gulf of Mexico on the 16th, and was at Mobile, Pensacola, and New Orleans, on the 17th; a distance of 2,000 nautical miles in about 150 hours, equal to something more than 13¼ miles an hour.* Its course, until it crossed the tropic of Cancer, was N. 64° west, or W.N.W. nearly. In pursuing its northern course, after leaving the ocean level, it must have encountered the mountain region of the Alleganies, and was perhaps disorganized by the resistance opposed by these elevations. It appears, however, to have caused heavy rains in a large extent of country lying north-eastward of the gulf of Mexico.

Route, No. III. is that of the destructive hurricane which swept over the Windward Islands on the 17th of August, 1827; visited St. Martin's and St. Thomas on the 18th; passed the north-east coast of Hayti on the 19th; Turks' Islands on the 20th; the Bahamas on the 21st and 22nd; was encountered off the coast of Florida and South Carolina on the 23rd and 24th; off Cape Hatteras on the 25th; off the Delaware on the 26th; off Nantucket on the 27th; and off Sable Island, and the Porpoise Bank, on the 28th. Its ascertained course and progress is nearly 3,000 miles,† in about eleven days; or, at the average rate of about fourteen miles an hour. The direction of its route before crossing

* Mr. Purdy states that this gale was felt at Natches, 300 miles up the Mississippi.

† All the distances are expressed in nautical miles.

the tropic, may be set down at N. 61° west, and in lat. 40°, while moving eastward, at N. 58° E.

Route No. IV. is that of the extensive hurricane of September, 1804. It swept over the Windward Islands on the 3rd of that month; the Virgin Islands and Porto-Rico on the 4th; Turks' Island on the 5th; the Bahamas and gulf of Florida on the 6th; the coast of Georgia and the Carolinas on the 7th; the great bays of Chesapeake and Delaware, and the contiguous portions of Virginia, Maryland, and New Jersey, on the 8th; and the States of Massachusetts, New Hampshire and Maine on the 9th; being on the highlands of New Hampshire, a violent snow-storm. The destructive action of this storm was widely extended on both sides of the track indicated upon the chart, and the same fact pertains, in a greater or less degree, to the other storms herein mentioned. It appears to have passed from Martinico, and the other Windward Islands, to Boston in Massachusetts, by the usual curvilinear route, in about 6 days; a distance of more than 2,200 miles, at an average progress of about 15½ miles per hour.

Route No. V, represents that of the hurricane which ravaged the islands of Antigua, Nevis, and St. Kitt's, on the afternoon and night of August 12th, 1835; St. Thomas, St. Croix, and Porto-Rico on the 13th; Hayti and Turks' Island on the 14th; the vicinity of Matanzas and Havana on the 15th; was encountered off the Tortugas in the gulf of Mexico on the 16th; in lat. 27°21, lon. 94°, and other points on the 17th and 18th; and also at Metamora on the coast of Mexico (lat. 26°,04) on the 18th, where it was most violent during the succeeding night. This storm is remarkable, as moving more directly, and farther to the west, than is usual for storms which pass near the West India Islands, it having reached the shores of Mexico before commencing its sweep to the northward. Its course, so far as known, is N. 73° west. Its progress, more than 2,200 miles in six days; which is nearly equal to 15½ nautical miles an hour.

Route, No. VI. is that of the memorable gale of August, 1830, which, passing close by the Windward Islands, visited St. Thomas' on the 12th; was near Turks' Island on the 13th; at the Bahamas on the 14th; on the gulf and coast of Florida on the 15th; along the coast of Georgia and the Carolinas on the 16th; off Virginia, Maryland, New Jersey, and New York on the 17th; off George's Bank and Cape Sable on the 18th; and over the Porpoise and Newfoundland Banks on the 19th of the same month; having occupied about seven days in its ascertained course from near the Windward Islands, a distance of more than 3000 miles; the rate of its progress being equal to seventeen miles an hour.* If we suppose the actual velocity of the wind, in its rotary movement,

* For a more extended notice of this storm, see Silliman's American Journal of Science, vol. xx. pp. 34—38.

to be five times greater than this rate of progress, it will be found equal, in this period, to a rectilinear extent of 15000 miles. The same remark applies, in substance, to all the storms which are passing under our review. What stronger evidence of the rotative action can be required, than is afforded by this single consideration?

Route, No. VII. is that of an extensive gale, or hurricane, which swept over the Western Atlantic in 1830, and which was encountered to the northward of the West India Islands on the 29th of September. It passed on a more eastern ronte than any which we have occasion to describe, to the vicinity of the grand Bank of Newfoundland, where it was found on the 2d of October, having caused great damage and destruction on its widely extended track, to the many vessels which fell in its way. Its course is quite analogous to that which we have considered as having been probably pursued by the hurricane of October 3d, 1780. The ascertained route may be estimated at 1800 miles, and the average progress of the storm at 25 miles an hour.

Route, No. VIII. is that of a much smaller, but extremely violent hurricane, which was encountered off Turks' Island on the 1st of September, 1821; to the northward of the Bahamas and near the lat. of 30° on the 2d; on the coast of the Carolinas early in the morning of the 3d; and from thence, in the course of that day, along the sea-coast to New York and Long Island; and which, on the night following, continued its course across the states of Connecticut, Massachusetts, New Hampshire, and Maine. I am not in possession of accounts by which its farther progress can be successfully traced.* The diameter of this storm appears not to have greatly exceeded 100 miles; its ascertained route and progress is about 1800 miles, in sixty hours; equal to thirty miles an hour.

The last mentioned route may also be considered to be nearly the same as that of a similar, but less violent storm, which swept along the same portion of the coast of the United States on the 28th of April, 1835.

No. IX. represents the route of a violent and extensive hurricane, which was encountered to the northward of Turk's Island on the 22d of August, 1830; northward of the Bahamas on the 23d; and off the coast of the United States on the 24th, 25th, and 26th of the same month. Much damage was done on the ocean by this storm; but it scarcely reached the American shores. Its duration, off this coast, was about forty hours, and its progress appears to have been more tardy than that of some other storms.

No. X. represents the track of a violent hurricane and snow-storm, which swept along the American coast from the lat. of 30° N. on the 5th and 6th of December, 1830.

* The phenomena and progress of this storm have been more fully noticed in Silliman's Journal, vol. xx. pp. 24—27.

The last mentioned track also corresponds to that of another storm, of like character, which swept along the sea-coast on the 13th, 14th, and 15th of January, 1831. These winter storms exhibit the same phases of wind and general characteristics, as those which appear in the summer and autumn.

I have thus given a summary description of the route of twelve storms, or hurricanes, which have visited the American coasts and seas, at various periods, and at different seasons of the year. The lines on the chart, which represent the routes, are but approximations to the centre of the track or course of the several storms; and the gales are to be considered as extending their rotative circuits from fifty to three hundred miles, or more, on each side of the delineations; the extent of the storm being estimated both by actual information and by its duration at any point near the central portion of its route, as compared with its average rate of progress. The dimensions of the several storms appear also to have gradually expanded during their course.

Storms of this character do not often act with great violence on any considerable extent of interior country to which they may arrive. Even upon the coasts on which they enter, such violence is not often experienced under the posterior limb of the gale which sweeps back from its circuit over the land, the usual woodlands and elevations being a sufficient protection. Often, indeed, the interior elevations afford such shelter as entirely to neutralize the effect of the wind at and near the surface, and the presence and passage of the hurricane is, in such cases, to be noted chiefly by the unusual depression, which the extensive whirling movement of the incumbent stratum of air produces in the mercury of the barometer, which thus indicates the presence or passage of the hurricane, in positions where the force of the wind is not felt at all, or only with a moderate degree of violence. The action of these storms appears, indeed, to be at first confined to the stratum or current of air moving next the earth's surface; and they seldom, while in this position, appear to exceed a mile or so in altitude. During their progress, however, by the influence of high land and other causes, they often become transferred, in whole or in part, to the next higher stratum of current. Thus we sometimes see a stratum of clouds moving with the full velocity of a violent storm, while the stratum of surface wind is nearly at rest, or moves with its ordinary velocity; and thus also it happens that balloons, ascending under such circumstances, are carried forward with a velocity of from 60 to 100 miles an hour. These remarks are by no means hypothetical, but are the result of long-continued observation and inquiry.

The routes of many other storms and hurricanes might be traced on the chart, from materials now in hand, were it necessary; and they may, it is believed, be somewhere found in action, at all

seasons, and on every day in the year, although their appearance is more frequent in some seasons, and even in some years, than in others. The hasty outline of their progress and development, now submitted to the readers of the Nautical Magazine, is, probably, quite sufficient to overthrow some of the most common hypotheses respecting their origin and times of appearance.

Perhaps it might be deemed proper to point out, on the present occasion, the catenation of natural causes by which the systematic organization and progress of these storms is produced and maintained; but I do not intend, Mr. Editor, to weary the patience of your readers with a more prolonged chapter on the natural history of hurricanes, nor to deprive the *savans* of their prerogative to dispose of our facts in such manner as may seem best to accord with their favourite systems. Besides, our business at this time is rather with the facts themselves, than with their relations in a correct system of meteorology. It may be remarked, however, that unless the writer has greatly mistaken the mass of evidence presented to his notice during the progress of his inquiries, these phenomena, as also the general winds in which they occur, are to be ascribed, mainly, to the mechanical gravitation of the atmospheric strata, as connected with the rotative and orbital movements of the different parts of the earth's surface. But, should any one, after an unbiassed and full consideration of the great facts which are now before us, and of their bearing as illustrative of the physics of the atmosphere, seriously ascribe them either to lunary, cometary, electric, or volcanic influence, or even to calorific agency in any just and proper sense—then the writer can only say, that he finds himself unable to explain these, and certain other phenomena of the atmosphere, upon such principles, and that he desires to concede all the honour of theorizing to those who may imagine that such relations can be established. It would promise better, however, to inquire whether we have not, in these developments, a clue to the true system of atmospheric physics, a subject which has always been beset with difficulties, and to explain which we hitherto have obtained nothing better than plausible hypotheses. In regard to the fall of the barometer, which attends these storms throughout their progress, its *rationale* is deemed to be so obvious as hardly to admit of question.

In conclusion, I will venture to hope, that the facts and considerations now presented may prove, in some degree, useful to the nautical profession, and promotive, also, of the general interests of science. At the same time it is hoped, that in future notices of violent storms, more attention will be given to specific dates and location, and also to the direction and changes of the wind, all which may be expressed in the most summary manner; and the facts, when once recorded, are for ever available, in tracing the progress and character of such storms. It seems desirable, also,

that the general route and character of European storms should be investigated by those whose local position and means of information best qualify them for the task. The writer of this communication is but scantily furnished with materials for this object, and would gladly see it accomplished by other and abler hands.

New York, Nov, 1, 1835.

[We request the attention of our West India navigators to the above valuable remarks of Mr. Redfield, and we hope this gentleman will favour us with some further observations hereafter on this interesting subject. In the mean time we shall be obliged to our readers if they will communicate to us their observations on his theory for knowing whether they are on the southern or northern side of the focus of the hurricane when they first meet with it. We need not add, that the larboard tack is the proper one to lie to on, as the wind will then be found to draw aft. ED. N. M.]

LYING TO AT SEA.

The following plan, communicated to us by the worthy Secretary to Lloyd's, although not new, we believe is not so often practised as it should be; there can be no doubt of its advantages over the usual mode, and masters of ships would do well to attend to Mr. Brown's advice.—ED. N. M.

W. DOBSON, Esq.

SIR,—In submitting the following method of enabling ships to ride out heavy gales of wind at sea, I am induced to do so, first, from a desire to preserve human life, and, secondly, to prevent the disasters of vessels springing a leak, and straining themselves, so as to become mere wrecks, which frequently occurs from "laying them to" in heavy gales of wind, as they almost invariably sustain the damage before mentioned in consequence of the heavy "lee lurches," and unequal balance they are subject to by being thrown into the trough of the sea, independent of having their decks swept of every thing that is portable, as well as of the men occasionally, by riding out a gale of wind in the usual way.

The practical knowledge I possess is derived from the experience I have had as a sailor, having served my time in the coal trade, and been some years on board of a man-of-war. As a proof of the practicability of my plan, I may be allowed here to mention, that once, in the Gulf of Florida, there were two boats let down from the quarter of a seventy-four I had the honour to belong to, in order to board a small Spanish vessel. It was then blowing a gale of wind. The first boat that went off shipped a heavy sea, and was swamped, and lost. I was fortunate enough in the second boat, and, by using the oars upon the principle I am about to lay down, succeeded not only in saving my own boat and crew, breaking the waves that threatened us with destruction, but also was enabled to rescue the first boat's crew from a watery grave.

I therefore know the effects of riding out gales of wind by "lying to," and am convinced that in all cases where my plan is adopted, beneficial effects must be the result; for, instead of the vessel being entirely at the mercy of the sea, as they always are when "lying to," she will still be under the control of the crew, and will ride with her head to the wind, by which means the heavy head-seas (which in these cases strike terror into the stoutest hearts, when the word "Watch, watch," or "Hold fast fore and aft," is given) will be broken and dispersed, and the ship will ride in a comparative smooth sea, surrounded by a foam, and free from the sea's breaking over her.

It may be necessary here to observe, that all square-rigged vessels lie within about *six* points of the wind, but when hove to they will not lie within seven; now, by my plan, they will not only ride head on to the wind, but also make less lee-way, which is of great importance in these cases.

Plan of a Break-sea for enabling Ships to ride out Heavy Gales at Sea, without "Lying to."

In case of heavy gales of wind at sea, when it is usual to "lie to," instead of doing so, get a spare topmast, yard, boom, or spar of some sort; also a spare topsail or course, and bend the clews, with the buntline holes, to it. The reason this part of the sail should be uppermost is in consequence of the tabling and lining cloths, which give strength to resist the power of the sea, which is most violent upon the surface. Then lash a good line to each end of it, so as to form a span, to the centre of which bend on a hawser; then, to the lower end of the sail, from the earings inwards, (leaving the midships clear,) lash on some chain-shots, kedge anchor-stocks, deep-sea leads, or any other iron or leaden weights you may have handy, sufficient to keep the body of the sail down in the water, allowing the spar used to float above them. Now let it go over the weather-beam, with forty or fifty fathoms of hawser, holding the bite in forward; now square your yards, and hoist your mizen with a balance reef; secure the boom in mid-ship, and her head will come right to the wind. Now, as the ship drifts more than the sail, which is thus kept down in the sea by the weight which is attached to it, she will keep the hawser taught, the belly of the sail will break the belly of the rolling wave, and the spar will break the top of it, so that the danger of heavy lee lurches in the trough of the sea will be avoided. The head-seas will break and disperse before they reach the ship; and thus the heaviest gales may be rode out at sea, in comparative ease and safety.

I am, Sir, &c.

JAMES BROWN,
Patentee of the Improved Capstan and Chain-Cable, Stopper and Controller.

30, Ashford-street, Hoxton New Town,
Feb. 27th, 1836.

Newcastle-upon-Tyne, 26th Feb. 1836.

Sir,—It has so long been a subject of complaint among ship-owners, underwriters, and others interested in the careful management of ships, that I am surprised it has never entered into the regulations at Lloyd's to secure good, steady, and eligible persons to take charge of vessels wherein the underwriter's interests are so deeply involved. The ships in the merchant service of this country are notoriously the worst officered of any enlightened country in Europe, whether you look at their general nautical information, education, or propriety of conduct.

How often too is it to be apprehended, that if an owner wants to get rid of an old ship, he insures her well, puts a man in command, who is either a drunkard, an ignoramus, or both, that she may be well sold.

Now, in my opinion the remedy is easy and simple. Let there be a Board established at every principal port, composed of one Post-Captain or Commander in the navy, connected with two experienced Masters of merchant-ships, and let young men go before them to pass an examination, say for mates in the coasting trade, or skilful practical men, or mates for foreign service, conversant in navigation; masters in the coasting trade, or masters for foreign service; and after a given date make it known, that no vessel can be insured if not provided with officers having a certificate of efficiency.

By the adoption of this measure, young men would find the necessity of educating themselves, and of studying their profession, which is now almost entirely neglected, except such part as is brought about by constant manual labour, and a repetition in working their ship; whilst few indeed ever think of looking in a book, until by some accident they are placed in charge. This would produce sobriety, and steady, manly conduct among young seamen, which are matters of much deeper importance to the safe conducting of our commercial marine, than those so deeply interested seem to be aware of.

I have the honour to be, Sir,
Your obedient servant,

Joseph Shield,
A Seaman, a Ship-owner, and Ship and Insurance Broker.

To W. Dobson, Esq., Secretary at Lloyd's, London.

[This letter of Mr. Shield's demands the serious attention of all who wish to see our mercantile marine on its proper footing. The evil he complains of is one of long standing, and we have reason to believe has at length attracted the attention of influential men, who are meditating, among other salutary measures, a Board of Examination. It is too notorious to enlarge on here, but we will

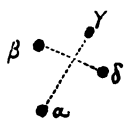
give a recent instance, not exactly of want of science, but perhaps something less excusable :—

CURRENTS.—"Whilst on the subject of currents, I shall be excused for relating an anecdote, which would in all probability have given rise to one, had I not happened to have been present. When we were at Santa Cruz, Teneriffe, a brig arrived from Guernsey, with the master of which one of the officers was acquainted. This person told the officer, that on his passage out he had been set by a current three hundred miles to the westward! The officer acquainted me with the circumstance. I went on board the vessel, and, on questioning him, found that he actually had been three hundred miles to the westward, but could elicit nothing to throw any light on the subject. A thought struck me to examine his binnacle, which I did, and found it put together with iron nails! This man had lost two vessels before this voyage; and it was perhaps more by good luck than good management that he had found his way to Teneriffe."

The foregoing is an extract from some notes of a naval officer, and its authenticity may be relied on.

• ON THE SOUTHERN CROSS. *By Mr. Gustavus Dittman, of H.M.S. Rodney.*

" — — — posi mente
All' altro polo, e vidi quattro stelle,
— — — — —
Goder pareva 'l Ciel di lor fiammelle;
O settentrional vedovo sito
Poichè privato se' de mirar quelle!" *Dante.*



" — — — I fixed my mind
On the other pole attentive, where I saw
Four stars, — — —
— — — Heaven of their rays
Seemed joyous. O thou northern site,
Bereft indeed and widowed, since of them deprived!"
Cary's Translation.

MANY Europeans proceed beyond the tropic of Cancer, nay, even visit the southern hemisphere, without appreciating the practical value of that beautiful constellation, the Southern Cross, the emblem of Christianity, flaming amidst the starry hosts. Even writers of some fame, all of whom I need not mention, have recorded the most erroneous ideas concerning its nature. One says, it indicates the hour of midnight when standing upright; another states, that the inhabitants of South America ascertain that

it is past midnight when the Cross begins to decline, and count the hours of the night by it, &c. &c.*

Now, the fact is, that a fixed star comes to the meridian, above or below the pole, *at a certain time*, not more than once a year. The Cross, therefore, will be seen upright at midnight on one day only, and that is *on the 26th of March*. On every following evening it will assume that position nearly four minutes sooner, and, three months after, it must culminate at 6 h. P.M. This circumstance, I should think, sufficiently proves the absurdity of the above assertion.

Those celebrated naturalists, Drs. Spix and Martius, might as well have read the correct and elegant description given by Humboldt, who very properly calls it, "un horloge qui avance très regulièrement de près de quatre minutes par jour:" and this scientific traveller, moreover, points out the nations among whom he noticed the habit of observing it; "dans *quelle* partie de la nuit, *en différentes saisons*, la croix du Sud est droite ou inclinée."

However, whilst exhibiting several striking qualities of the Southern Cross, tending to benefit mankind, I shall propose a popular method, by means of which the hour can be found from the mere aspect of that constellation, whether its appearance be perpendicular or oblique, upright or inverted.

My present object is to call the attention of young navigators to this most useful and interesting subject; and at the same time, the voyagers, travellers, or settlers in the southern hemisphere may derive both advantage and amusement from it, however ignorant of astronomy they may be.

The Southern Cross, as it is said in the sublime and beautiful verses of the immortal Florentine bard above quoted, consists of four bright fixed stars placed in the form of that figure, when connected by the straight lines $\alpha\gamma$ and $\beta\delta$. This is the position in which it is seen when on the meridian above the pole, *to the southward* of the observer.

The northernmost star of the constellation, representing the top of the Cross, is γ, the southernmost, α, β its eastern, and δ its western arm. The latter star, however, is less radiant than the

* Among others are Spix and Martius, whose names I cannot pass over in silence, since many a reader has been misled by their authority. These gentlemen, in their "Travels in Brazil from 1817 to 1820," a translation of which was published by Longman, Hurst, and Co. in 1824, seem to have laboured under a strange delusion. They state, Vol. I. page 116, "It was on Sunday, the 29th of June, in the evening, the Southern Cross had attained a *perpendicular position, indicating the hour of midnight.*" But, in subtracting the sun's A.R. for the date mentioned, 6 h. 32 m. from the mean of the A.R. of α and γ crucis, 12 h. 19 m., we get 5 h. 47 m. P.M. as the moment of the meridian passage above the pole, or perpendicular position of those stars. Our voyagers, who then were near the Line, could not even have seen the Cross at midnight, because it must have set about a quarter of an hour before that time.

other three, which appear to be nearly of the same magnitude between the first and second.

The two stars, γ and α, having nearly the same right ascension, a line drawn from γ to α, if produced, would nearly pass over the south pole, and those two stars, therefore, may justly be called the "*Antarctic Pointers.*"

The eye looks in vain for another constellation to rest upon; it is to the glorious revolving Cross that the southern hemisphere is indebted for its celestial beauty: for there are even no bright constellations near the dark pole, as Camoës makes his naval hero observe:—

"Vimos a parte menos rutilante,
E par falta de estrellas menos bella
Do polo fixo."

"——— there the blue vault of heav'n shone,
Less spangled with diminish'd starry hosts."
Musgrave's Translation of the Lusiad.

Gamma, (γ), the upper star of the Cross, is almost thirty-four, and Alpha, (α), the lower, is twenty-eight degrees of a great circle distant from the south pole. The distance of those two stars from one another, therefore, is 6 degrees. Dividing twenty-eight, the nearest distance of the Cross from the pole, by six, the length of the Cross, we get $4\frac{2}{3}$. Hence a line drawn from γ through α, and produced to $4\frac{2}{3}$ times their respective distance from one another, will *terminate near the pole of the heavens*, whatever position the Cross may assume whilst describing its diurnal arc. This enables an observer to estimate the direction in which the *south point of the horizon* is to be looked for. This is, moreover, very nicely indicated by the line connecting the pointers, *whenever they appear perpendicularly* to the horizon.

As long as the observer is north of the Cross, that is to say, in less than sixty-two degrees south latitude, which is the amount of the south declination of its foot-star α, it will, at the moment of its upper culmination, have an aspect as in the above diagram. But it will show itself *inverted* when it passes the meridian below the pole.

In order to see it in the latter position, the south latitude of the place of observation must be at least equal to the south-polar distance of the northernmost pointer γ, thirty-four degrees, and *somewhat more:* for the rays of light which convey its image to the observer, having to pass so close to the horizon, lose a large portion of their brilliancy before reaching his eye.*

* This constellation, when below the pole, therefore, is *not visible* "*straight nigh over the horizon*" to the inhabitants of the Isle of France, in twenty degrees south latitude; where the upper and *only* meridian altitude of the star γ amounts to fifty-four degrees. And the words "il est tard, il est minuit, la croix du Sud est droite sur l'horizon," spoken by the Eremite in Paul and Virginia's parting scene, are more beautiful than true.

The Southern Cross, consequently, may be seen inverted on the meridian; for instance, near the mouth of the River Plate, off the Cape of Good Hope, south of Botany Bay, &c.

Should the zenith of the observer be to the southward of the Cross, it then will appear inverted at both meridian passages; but, at its lower culmination, it will bear south, and at its upper, north of him.

The Southern Cross, on the same principle, might be perceived in as high a northern latitude as the south-polar distance of its foot-star α amounts to twenty-eight degrees. On account of the atmosphere, however, it cannot often be seen in its perfect shape to the northward of the tropic of Cancer.

The young scientific navigator, when first sailing towards the south, enjoys the singular charm which is afforded to him by the sight of the antarctic constellations, invisible to him before, as they gradually emerge from the southern horizon, whilst the northern circumpolar stars at their lower culmination are as rapidly disappearing. If, for instance, he should leave the Canary Islands in the beginning of May, to approach the equator for the first time, he will often give a parting look at his old acquaintance, the north polar star: he might then say with Vasco da Gama,—

"Por este largo mar emfim me alongo
Do conhesido Polo de Calisto."

"Withdrawing from Calysto's starry pole,
The sea I traverse."

J. Musgrave's Translation of the Lusiad.

But how agreeably will he be struck, when, on turning around, he beholds the brilliant Cross of the south, new to his admiring eyes. He might then readily enter into the feelings of those bold circumnavigators of the "Cabo Tormentoso," who were enabled to relate to their astonished countrymen:—

"Ja descoberto tinhamos diante
Là no novo hemispherio nova estrella,
Naõ vista de ontra gente."

"In this new hemisphere we first perceived
A constellation great and brilliant,
By all but Lusians hitherto unseen."

J. Musgrave's Translation of the Lusiad.

And in admiring the beauty of the constellation before him, he will gladly learn how to turn it to account in its various positions. But it is not to him alone that a knowledge of it will be useful. Military officers, serving in the southern colonies, the settler, the voyager, and travellers in general, whether they may be immersed in the dense primitive forests of South America, or wandering in the deserts of Central Africa, or exploring the interior of the vast continent of Australasia, or preaching the gospel to the pagans on

the South Sea Islands; to all, a familiar acquaintance with the motions of the Southern Cross may assuredly be useful.

In order to know the time from noon when the Cross passes the meridian above the pole, *or when it stands upright*, the spectator has only to subtract the sun's right ascension from the mean of the right ascension of the two antarctic pointers, α and γ Crucis, which being 12 h. 19 m. may easily be recollected. The latter is to be increased by twenty-four hours, if it should happen to be less than the former.

I shall now endeavour to shew how the sun's right ascension may be found off hand, sufficiently correct for the present purpose, without being obliged to consult the Nautical Almanac, or employ any tables.

There can be no difficulty in remembering, that at the southern winter solstice, 21st of June, the right ascension of the sun is *six hours;* at the northern autumnal equinox, 21st of September, *twelve;* at the southern summer solstice, 21st of December, *eighteen;* and at the northern vernal equinox, 21st of March, *twenty-four* hours, very nearly. Hence, its daily increase the whole year round is, on an average, *almost four minutes.*

If therefore a person should wish to know the sun's right ascension for the 1st of August, he may recollect that at the last solstice, 21st of June, it was six hours.

From this date forty-one days will have elapsed, which multiplied into the daily increase, four, make its accumulation 164 m., equal to 2 h. 44 m.; and those six hours added to it give the sun's right ascension for the day proposed = 8 h. 44 m.

To find the time when, on the 1st of August, the Cross will come to the meridian above the pole, or will attain its upright position, 8 h. 44 m. need only be subtracted from the right ascension of the antarctic pointers, 12 h. 19 m. The difference, 3 h. 35 m. P.M., is the time required to be known; and *nearly* twelve hours after the Cross will likewise be seen perpendicularly, but *inverted* at its lower culmination.

Thus, any one who perceives this constellation in either of those positions, and recollects the right ascension of the pointers, may know what o'clock it is, if he merely takes the trouble of computing that of the sun, in his head.

Example: A person in a ship off the Cape Verd Islands, in the middle-watch on the 22d of February, sees the Southern Cross standing upright, from which he is desirous of knowing the hour of the night. Being aware that the sun's A.R. at the next equinox, 21st of March, will amount to twenty-four hours, he multiplies its daily increase, 4 m., into 27, the number of days wanting to the equinox. By this he gets 108 m. = 1 h. 48 m., which subtracted from 24 h. leave 22 h. 12 m. as the sun's right ascension required. He now subtracts it from 12 h. 19 m., the right ascension of the

pointers, which in this and similar cases is to be increased by 24 h., making it 36 h. 19 m.; and 22 h. 12 m. taken from it gives the time of the upper culmination of the Cross = 14 h. 7 m. counting from the preceding noon. It is consequently 2 h. 7 m. A.M. or past four bells.

Another person off Cape Horn, perceives late in the evening of the 11th of September that the Southern Cross is in a perpendicular but *inverted* position, and wants to know what o'clock it is.

The sun's A.R. being at the next equinox, 21st of September, 12 h., its daily increase, 4 m., multiplied into 10, the number of days wanting to it, gives 40 m., which subtracted from 12 h. leave 11 h. 20 m. as the sun's right ascension on the 11th of September. The difference between it and that of the antarctic pointers, 12 h. 19 m., gives the time of their culmination above the pole equal to 0 h. 59 m. P.M. But, half a diurnal revolution having taken place since, the ship-time indicated by the inverted perpendicular aspect ought to be about as much *past midnight*.

It must however be observed, that by treating the sun's right ascension in the manner proposed, the southing of the Cross will always be in *mean time* nearly.

If a plumb-line be held before the eye, so as to pass over the antarctic pointers when they are approaching the meridian, the moment of their passage may be ascertained very correctly; for, since the star α comes to the meridian about 4 m. *sooner* than γ, a line drawn from γ through α, if produced, can *never exactly* meet the pole, nor indicate the south point of the horizon. Hence your meridian would be marked by the plumb-line best whenever α has passed beyond it as much as γ wants to reach it.

Whilst taking this observation, the *variation of the magnetic needle* may be nearly estimated with a compass before the observer. By observing when the plumb-line is in the meridian, where, an imaginary vertical plane passing through the eye, the plumb-line and the point of the needle cuts the opposite graduated circumference of the compass-card, which intersection will give *the true south point*, and hence the variation.

If the magnetic south is east of it, the variation will be *westerly;* if west of it, *easterly*, the amount of which can be read off, counting from the south point of the compass.

This method is no doubt a rough one, yet it may, nevertheless, afford useful approximation in certain cases.*

But, on shore, by using two plumb-lines, this experiment might be made to a considerable degree of nicety. By placing the pivot of the compass-card exactly beneath one of them, and suspending the other at a little distance from it, to the northward, so as to be in an exact line with the pointer, and that over the centre of the

* By the same method, with the pole star only in the northern hemisphere, the variation may be ascertained within tolerable limits. ED.

compass, the two plumb-lines will then be suspended in the same true meridian in which the pivot of the needle is, and from thence the magnetic variation may be readily obtained.

Having explained how the hour may be found from the Southern Cross, when it is *perpendicular*, or on the meridian, I now subjoin a simple method by which it may be done when that constellation is seen in an *oblique* position, or off the meridian.

Let me first assume that the observer is on *the equator*, where the south pole is in the horizon. There the line passing through the antarctic pointers must, at the moment of their rising and setting, almost fall into the plane of the latter, which consequently takes place *six hours before or after* their meridian passage. Hence, the time may by this means be likewise estimated.

But, if it were desired to find the hour when the Cross is above the horizon, and not perpendicular, its inclination, or the angle, must be measured, which the imaginary straight line drawn through both pointers to the south pole makes with the meridian; in short, *the hour-angle* of the Cross must be obtained. Any ship-carpenter may trace upon a thin board, with a radius of about eighteen inches, an arc of 90 degrees, answering to six hours, which is to be divided into as many subdivisions of time as convenient—the more the better. After sawing off the quadrantal piece, fasten a plumb-line to the vertex of the angle at the centre.

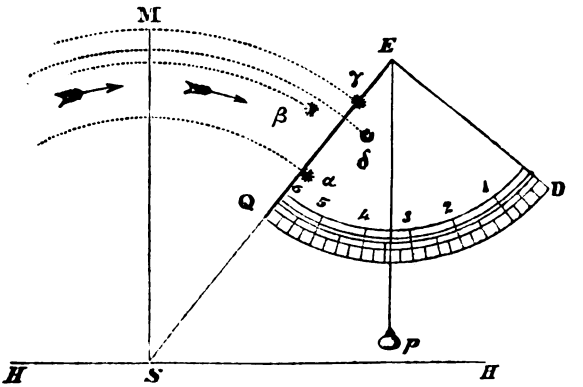
The instrument being ready, by holding its face before the eye, make one of the two straight edges coincide with the antarctic pointers. If, for instance, the plumbline should then intersect the arc at two hours, counting from the corner of the quadrant that is *nearest to the meridian*, it would indicate that the Cross wanted so much to attain a perpendicular or upright position. Supposing such an observation was taken when it appeared *west* of the meridian, it would indicate that two hours had elapsed since its upper culmination. Had that hour-angle been measured east of the meridian, it would represent the time wanting to that moment.

A large and neatly-worked wooden quadrant, with an easy sliding index and clamp, instead of the plumb-line, Gunter's quadrant, or the old instrument called "Nocturnal," might produce a very fair result.

It must also be observed, that when you are holding the quadrant's edge over the two pointers, you ought to make some allowance for their difference of right ascension by *just* covering α while you keep γ *clear of the edge*. The arrows are merely inserted to point out the direction of the stars' motions.

Example I. A ship is becalmed on the equator in the evening of the 1st of April, and it is required to find the hour from the oblique aspect of the Southern Cross seen from her. The observer first finds the right ascension of the sun, which, at the last equinox, 21st of March, was 0 h. 0 m. The 10 days elapsed since,

multiplied into the number of minutes, forming its daily average increase, 4, make it for that day = 40 m., which, subtracted from 12 h. 19 m., gives the moment of the upright position or upper culmination of the Cross = 11 h. 39 m. p. m.



Quadrantal pice of board, Q E D.
Plumbline, E P.
Meridian, M S.
South Pole, S.
Sea Horizon on the Equator, H S H.
Hour Angle of the Cross, Q E P.
Pointer line, produced to the Pole, Q S.

The observer now measures the inclination of the pointer-line,* as explained before, and reads off 2 h. 30 m. east of the meridian. This is the time wanting to its attaining a perpendicular direction, and is to be *subtracted* from those 11 h. 39 m. The difference, 9 h. 9m., is ship's mean time, p. m.

Example 2. Another person near the mouth of the river Amazon, observes, on the 16th of June, the Southern Cross in a

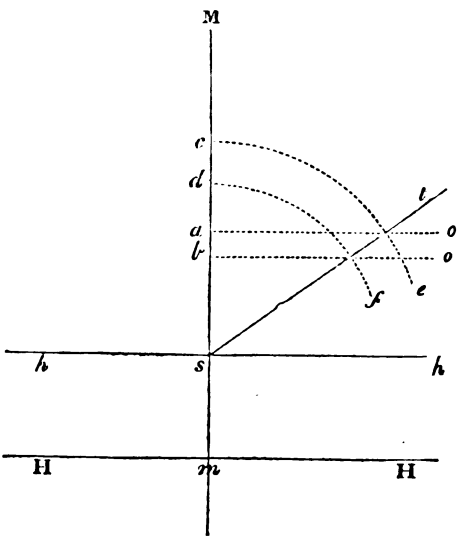
* As the method of measuring the inclination of the pointers by means of a quadrant and plumb-line at sea, may prove easier in theory than in practice, the following means of obtaining it may be found useful. Supposing the observer to be on the equator, let him take with Hadley's quadrant the altitude of each of the pointers, noting on which side of the meridian they are, and also which of the stars α or γ has the greatest altitude, or, in other words, whether the top or foot of the cross be uppermost. Draw a right line M m to represent the meridian, and from a scale of equal parts, lay off the observed altitudes from S at a and b; through the point S draw H H at right angles to the meridian M m, and through a and b on the meridian, draw lines parallel to H H. As the observer is now on the equator, the south pole is on the horizon, then with a radius of 34° from the same scale of equal parts, describe the arc $c\gamma$ to the east or west of the meridian, as the constellation may be; and with the radius of 28° from the same scale describe the arc $d\alpha$. Then the points of intersection of the two arcs with the two lines parallel to H H, will be the places of γ and α, the two pointers. A line drawn through them to the pole S, will

similarly inclined position, but *west* of the meridian. He recollects that the sun's right ascension at the next solstice (21st of June) will amount to 6 hours. The 5 days wanting to that period multiplied into 4, gives 20 m., and in subtracting them from 6 h., the difference, 5 h. 40 m., is the sun's right ascension required. This subtracted from 12 h. 19 m., gives the moment of the Cross's upper culmination.

Its hour-angle measured by the quadrant being 2 h. 30 m., it must in this case be *added*, which makes the ship-time 9 h. 9m. p. m. as before.

But it is not necessary that a person should be on the equator, to find the hour from the obliquity of the Southern Cross. This method will prove no less correct in *northern* latitudes where it is visible; but it is less practicable on account of the diurnal arc described by that constellation being less conspicuous the farther the observer is to the northward.

show their inclination, which may be measured with a scale of chords, or a protractor, and converted into time for the hour angle.



If the observer be in north latitude, as the south pole will be depressed to a quantity equal to his latitude, having drawn the meridian as before, assume a point s for the south pole, and lay off from it and above it the number of degrees of latitude from the scale of equal parts, through which point draw the horizon as before. The observed altitudes may be then laid off on the meridian from its intersection with the horizon as before, and by describing the

For common purposes it does not matter whether you even be a *few degrees* to the southward of the line. But in much higher south latitudes you cannot in this manner measure the hour-angle of the Cross when above the pole.

To *demonstrate* the reasons for fixing those limits of observation would be incompatible with the popular tendency of this paper. Hence I merely beg to call the attention of young navigators to the undoubted fact, that to an observer placed at the south pole of our earth, the Cross can neither rise nor set, but must, in a perpendicular inverted position, keep revolving equally high above the horizon.

Yet you may find the approximate time in a similar way, whenever that constellation shows itself slopingly inverted below the elevated pole, provided you are not in a much higher south latitude than the south-polar distance of the northernmost pointer γ amounts to—about 34 degrees.

arcs with the radii of 34° and 28° as before, from s the positions of γ and α will be found.

Again, if the observer be in south latitude, and the constellation be south of him, the south pole will be now elevated equal to his latitude. In this case assume s in the meridian as the place of the pole, and lay off as many degrees beneath it as the latitude, and draw H H through *m*. Then lay off the altitudes on the meridian from *m*, and from s describe the arcs with the radii of 34 and 28 for the places of the pointers.

Example: A person in 15° south latitude measures the altitude of the pointers as follows: $\gamma = 35°$ and $\alpha = 31°$ west of the meridian. Required the angle of inclination.

Here the south pole will be above the horizon. Draw the meridian M *m*, and assume a point s as the south pole. Then from a scale of equal parts lay off 15° below s to *m*, and through *m* draw H H as the horizon. Then from *m* lay off the altitudes observed, equal to 35° and 31° at *a* and *b*, towards M, and through them draw lines *bo*, *ao*, parallel to H H. Then with a radius of 34 (which is that of the circle described by γ round the pole) describe from the point s the arc *c e*, and with the radius of 28° from the same point describe the arc *d f*, then the points of intersection of the two arcs with the lines *ao* and *bo* will indicate the places of γ and α; and a line drawn through them from s will give their angle with the meridian, which, measured with a scale of chords, will be equal to 56° or 3h. 44m.; or the same may be found without projection, thus, by means of the traverse table. Turn the difference between the stars' altitudes into minutes, and with this, as a difference of latitude, and the difference between the stars' polar distances in minutes as a departure, find the course answering to them, which, converted into time, is the hour-angle. The difference of the altitudes here is $4° = 240'$, and the difference between the polar distances $6° = 360'$; the course answering to 36′ dep. and 24′ diff. lat. = 56°, or 3h. 44m.

It will be equally necessary to attend to the position of the stars with respect to each other and the meridian, adding 6 hours to the time found, when the star α is uppermost on the west, and 12 hours when to the east of the meridian, and 18 hours when to the east of the meridian it is the lower star, or when the constellation is to the east of the meridian, the angle found, subtracted from 12 hours, will then become its distance in time from the next meridian passage.—Ed. N. M.

Example 1. A passenger in an East Indiaman off Cape Agulhas beholds, on Christmas Eve, the Southern Cross in an oblique inverted position in the eastern sky, and wants to ascertain ship-time from that aspect. After recollecting that the sun's A. R., at the last southern summer solstice, (21st of December,) was 18 hours, he merely adds 3 days' increase, 12 m., to it. Those 18 h. 12 m. being more than the right ascension of the antarctic pointers, the latter, 12 h. 19 m., must be increased by 24 h., making it 36 h. 19 m.; and in subtracting 18 h. 12 m. from it, the remaining 18 h. 7m. indicate the moment of their upper culmination. But almost 12 hours before that time, the Cross has passed the meridian below the pole, at about 6 h. 7 m. p. m.

The observer measures its inclination, and reads off 5 hours *east* of the meridian. Now since the revolving Cross, after its lower culmination, continues to move easterly, this hour-angle shows the time elapsed since, and ought to be added to the former 6 h. 7 m. The sum, 11h. 7 m., is ship's mean time, p. m. nearly.

2. Another voyager off New Zealand observes, on the 24th of July, that constellation in a similar inverted position.

In order to find the hour from its aspect, he remembers that the sun's A. R. at the last southern winter-solstice, (21st of June,) was 6 hours. There are 33 days elapsed, which multiplied into 4, give its accumulated increase = 132 m. = 2 h. 12 m., which, added to 6 h., make it on the day given = 8 h. 12 m. The difference between this and 12 h. 19 m. is the time of the upper culmination of the Cross = 4 h. 7 m., p. m.

About 12 hours after, it must attain its perpendicular inverted position, culminate below the pole, at 16 h. 7 m.; counting from the noon preceding the observation.

Having measured its inclination = 5 h. west of the meridian, the observer subtracts this hour-angle from those 16 h. 7 m.; the remainder, 11 h. 7 m., is ship-time p. m. as above.

Whilst measuring the angle of inclination formed by the pointer line and the meridian at the pole, when the Cross appears below it, the observer should read off, counting from the edge of the quadrant that is farthest from the meridian; because the plumb-line in this case will only give its complement if he reckons from the edge laid over the pointers.

Persons skilled in estimating angles do not want any instrument for the purpose of finding the hour in a rough way, from the oblique position of the Southern Cross. But after having estimated the amount of its inclination, they may take a plumb-line, and let it pass through the southernmost pointer (α). The *acute* angle formed by the imaginary line connecting the pointers and the plumb-line at the vertex (α), represents the slope or hour-angle very nearly.

The Southern Cross thus affords to young navigators a convenient opportunity for gradually acquiring the art of estimating

angles with some accuracy, an accomplishment highly useful; for instance, in reconnoitring distant fortifications, the slope of their ramparts being required, in coast surveying, &c.

Whilst enumerating the various advantages which are afforded by that beautiful constellation, it must not be forgotten that there are no other fixed stars by which the latitude at sea can more correctly and readily be found than from the *culminating* brilliant Cross of the South. For in watching the meridian passage of a star, observers, with their quadrants, keep its reflected image sweeping on the sometimes very ill-defined sea-horizon, and repeatedly exhaust their tangent-screws, until they discover too late that it must have dipped some time before. But no such mistake can be committed with respect to α and γ Crucis, which being moreover particularly bright stars, mark, by their relative position, the time of their own culmination; and the mean of both latitudes derived from their meridian-altitudes, will give you a very fair result.

I now hasten to state, that all I have said about the nature of the *antarctic* pointers is not less applicable to the *arctic* ones, α and β, in the square of the Great Bear. But these stars do not attract the attention so much as the insulated Cross does; in reference to which the celebrated Humboldt justly observes—"aucune autre groupe d'étoiles n'offre à la vue simple une observation du temps aussi aisée a faire." The arctic pointers, moreover, look by far smaller than α and γ crucis.

Yet, since the stars of the Great Bear appear more conspicuous in the clear tropical sky than in our foggy latitudes, they equally serve, under similar conditions, to find the hours, &c. &c., from their position, as explained above. They are seen about as far to the southward of the equator as the antarctic ones to the northward of it. The mean of their right ascension is 10 h. 52 m., and a line drawn from Beta through Alpha, if produced to five times their distance from one another, terminates close to the north pole.

Thus the Southern Cross and the Great Northern Bear prove to one or the other part of our globe, and jointly to the inhabitants of the torrid zone in particular, two radiant celestial clocks, never erring, and combining the properties of gnomon and dial with that of an invariable magnetic needle. The European Christian, moreover, who in a calm night is attentively watching the revolution of the Cross, involuntarily gets absorbed in religious thoughts. His dazzled eye beholds far from home a cluster of brilliant stars, the form of which he learned in his infancy to revere as a type of salvation. His mind naturally is carried back to the days that are gone, to all his earliest deeds, better feelings, and dearest affections. And the heavenly Cross of the South, thus, may often rouse slumbering germs of virtue, and create feelings of contrition in the heart of the travelling sinner or the transported felon.

Roadstead of St. Marcou. *North Coast of France.*

To the Committee of Lloyd's.

Brig Elizabeth, Newport, March 1, 1836.

Gentlemen,—Having, by a mere fortuitous event, been enabled to save my ship, and probably, by it, the lives of those on board, I feel it a bounden duty, for the good of all concerned with the sea, particularly those whose lives are so often exposed to its fury, to endeavour to make it public: and, should you consider it worthy of notice, I am aware that it is in your power to do so; and therefore trust it to your charge.

On the 16th ultimo, at 10 A.M., Beachy Head bore north about three leagues, the wind from W.S.W. suddenly flew to the northward, and came to blow a storm, reducing us to very low sails. The brig, being in ballast, did but little. On the 17th, storm still raging; brig driving fast to the French coast: seeing, if the gale continued, there could be no hopes of keeping off the land, I determined on standing towards the west side of the bay formed by Capes la Heve and Barfleur, to gain, if possible, the road of la Hogue, convinced from its position that it would give shelter with the wind at north. At 8 P.M. dark, and blowing hard; Barfleur light N.N.W. At 9, 30, P.M. saw two small islands on the larboard bow; bore up, to pass to leeward of them; when, under their lee, seeing now it was not possible to gain the roadstead before mentioned, I brought up in eight fathoms, with the best bower gave the ship the whole chain, well secured. At midnight, it blew very hard.

On the 18th, at 4 A.M., gale increasing and veering to the N.N.E.; ship riding very comfortably. Found the sea must have increased very much outside, as the banks Du Bec and Cordouet broke high, and to a great extent; indeed, the whole bay looked a fearful sight of breakers. I went to the mast head at low water, and with the glass examined the bay and coast astern: I then saw that the channel in, at low water, bad weather, would be along the weather side, or northern side of the islands, about a quarter of a cable's length distant, giving the westernmost island a berth of full a quarter of a mile, if at night; by day all dangers are seen; then hauling to the eastward, bring up in nine fathoms, with the Round Castle, which stands on the eastward island, bearing N.E., light of Barfleur N.¼E.

On the 19th, latter part, gale abating, and veering to the N.E.; hove in some of the cable.

On the 20th, 10 A.M., weighed; wind N.E., smart breeze. At 3. 30. P.M., rounded Cape Barfleur, and stood to the N.W. During these three days, the Elizabeth, a brig of 115 tons, rode with one anchor, and that with ease and comfort; and I do not hesitate to assert, that under the small islands of St. Marcou,

a ship with good ground-tackle may ride out any gale between N.W. and N.E., that drives her to seek, like myself, refuge from necessity; and happy shall I be if this information may receive all I seek for, viz. the means of saving some of my fellow-sufferers from perishing. To answer all doubts, I appeal to the 16th, 17th and 18th of February. And I further state, we never once pitched our hause-holes in, or had our decks wet with the sea. I have been thus prolix, as I am aware how sceptical most are when they hear of new things; and I consider this such, as the directions say, "The Isles of St. Marcou, round which *small* vessels may sail, and even anchor:" now, from the time of my going in, crossing the Cordouet Bank, at high water, and beating out, between Du Bec and the main, I was never in less than five fathoms water; so that this valuable roadstead may be occupied by ships of all sizes.

I have, Gentlemen, &c.

WILLIAM HENRY SUMNERS,
Master of the Brig Elizabeth, of Bristol.

P.S. An American barque and French ship were in company on the 17th, both light, and not able to carry sail. I have not heard of their fates, but am certain it is a melancholy one, if they did not run for Havre.

DEFECTS OF MERCHANT SHIPPING.—*Regulations proposed for their Improvement.—Effect of Insurance.—The Register Book.*

To the Editor of the Nautical Magazine.

SIR,—People, at length, seem to be awakening from the lethargy with which they have been so long afflicted; and begin to think, that all is not quite so correct as they have supposed it to be, in respect to the conceited notion, which that stupid animal (John Bull) has for ages entertained; that his merchant-ships (like every thing else that belongs to him) are the very best and finished constructions in the world. "John Bull, when wilt thou detect thyself to be an ass?" is very aptly demanded by Colonel Thompson, in his inimitable Catechism on the Corn Laws; and, believe me, Mr. Editor, that of all the many subjects, upon which the same question may, with great propriety, be put to this very *sapient* personage,—there is none whatever, where it is more applicable, than that upon which I am about to offer some remarks, namely, the construction, the putting together, of our mercantile marine.

The forms of our ships have been bad enough,—perfect coffins! —but a new system of measurement has been introduced, so as to leave this matter open to the common sense of mankind—and, as

I do not see that private interest will have any tendency to thwart the effect this measure is calculated to produce, we will take for granted, that, in this respect, improvements will ensue; and at present merely treat on the art (or rather the want of art) with which these important fabrics are put together,—if such a term as "put together" is not also misapplied, when given to a mass of timber which cannot be said to be connected.

It is gratifying to observe the continual communications made, through your Magazine, by the north-country gentlemen, on this subject. Their statements contain important matter for public consideration; but I cannot help thinking that the writers found their complaints upon a wrong basis, in some respects. I mean, when they attach all the blame to "sea insurance:" and, moreover, they do not contain any sufficiently detailed and precise proof of the grievance, (except as to the fact of the immense number of losses,) that is to say, the precise defects, so as to clearly point out the errors in the practice of ship-building, which want rectifying;—and they are, moreover, deficient, in their not suggesting any method by which such errors, when pointed out, are to be avoided. I shall endeavour, in this letter, to supply these defects.

First, let me dispose of the question of insurance. On this subject it appears that you, Mr. Editor, concur with your north-country friends, in denouncing the evil to be attributable to "sea insurance." The communications given to the public, through your magazine, as well as the pamphlets which have been gratuitously circulated from Kirkcaldy, all go the length of denouncing sea-insurance as the root of the evil.

However sea-insurance is unquestionably *abused*, it is hardly necessary for me to repeat here the arguments, to be so readily found, to prove the *absolute necessity* of a system of insurance. I should have thought that every body, who had taken the trouble to look into the principles of commerce, would have been satisfied that foreign trade could not exist without insurance; no maxim can be more indisputable; therefore I will only recommend to your correspondents to seek for some other remedy, to cure the evil complained of, than in a total abolition of sea-insurance; which could not be accomplished without the stoppage, at the same time, of all commercial intercourse with foreign countries: further, I think that a very erroneous view is taken as to the interests of underwriters, in this question; and I am not sure how ship-owners, generally, can be benefited by the possession of bad ships. As regards the underwriter, it is surely an error to suppose him served by the loss of ships. I never remember to have heard him express satisfaction at such events. The business of underwriting is (or should be) carried on by companies, of large capital, and individuals also possessing ample respon-

sibility; the result of the operations of an underwriter is, or is intended to be, that a certain sum remains to him of premiums, (or of, as the Kirkcaldy people have it, "presents,") after the payment of the losses.

I believe the north-country gentlemen in error, when they state "high risks and high premiums" to be the golden age with underwriters: I have always understood the contrary, and I fear not to state this as fact; and to give as proof, the well remembered "Baltic risks." Many of your readers, however, may not be acquainted with them, and I will briefly state what they were. In consequence of the famous "Berlin and Milan decrees" of Buonaparte, all trade was in danger of being suspended with this country; and it became, in fact, necessary to *cut* a way through Buonaparte's formidable lines of "Douaniers" by bribery. Large operations were undertaken, and insurances effected, from this country to ports in the Baltic;—including the risk of *seizure in port*, the premium was enormous, I think from twenty-five to thirty guineas per cent: here was "high premium and high risk," with a vengeance! All went very well for a time; the speculators made fortunes, and the underwriters were bewitched—the markets were such, as induced for a while the continuance of the measures upon which the intercourse was founded, namely, "bribery!" These operations increased to such a prodigious extent, that a change came over the whole affair—*bribery could no longer be afforded*—the whole were seized!! and thereon followed such a panic, such loss and destruction, in Lloyd's, as will not be forgotten for a time by those who witnessed it. Let no one advocate "high premiums and high risks," after this; the fact is, *that the lower* premiums are, so long as the *risk is less*, the more sound a state the business of underwriting is in. The affairs of the "Baltic risks" will remain a lasting memento of the weakness of human nature; how the most respectable man may be blinded by the glittering prospect of inordinate gain! Any one, who could look at this affair except through the medium of "premium received of thirty guineas in hand, to return one hundred pounds upon remote contingences," could have told what would be, to a certainty, the end of it.

In truth, Mr. Editor, most of the ignorance in the world is to be attributed to this cause—that man can hardly look at any thing except through the medium of the "interest," which perverts his optics; his vision is distorted upon view of all the circumstances which occur to him, that may in any way affect the £. s. d. in this "vile shop-keeping nation," where every body is in pursuit of wealth, and man cannot see beyond his nose.

Your correspondents will acknowledge themselves quite in the wrong by taking their own view (in respect to high premiums I mean) of what would be effected by improved ships; namely,

that there would be *no losses*. Insurance would certainly exist, notwithstanding; in which case it is evident, that, as *all the premiums* paid (or presented) to the underwriter would be profit, even a low rate would bear very satisfactory results to the gentlemen of Lloyd's and the insurance companies. If insurance *brokers'* interests are considerable enough to have any weight in this question, no doubt but to them high premiums are a great desideratum, their profit being a per centage upon the premium without reference to the risk.

The Kirkcaldy gentlemen are, however, clearly correct, when they designate underwriters to be *only the medium* through which *the public suffers* by the use of bad ships; and I will add, that a ship-owner is no more. What is meant by the "shipping interest?" It is a misnomer,—strictly speaking, there is no such thing. There are no people's concerns, that have been more continually made a noise about, than those of the ship-owner,—this has been going on ever since the peace took place,—and it has been attended to, by more consideration being given to them, and more effectual reductions of imposts affecting shipping, than, I believe, any other interest can boast of: and, after all, will a ship-owner say any benefit can arise from this consideration of the legislature? Not he: he is in no more flourishing a state than before! and every new apparent advantage conceded by government, only ends in the ship-owner's disappointment; and why? merely because *the public* is, after all, the party benefited in all this! It would be preposterous to suppose, indeed, that a statesman could be so foolish as to think of the interest of ship-owners separated from that of the public; it is to its ultimate effect on *the public*, that he looks. Every reduction that takes place in the charge of sailing a ship, *is directly divided amongst the public;* and this is so universally felt, it is so useful a reduction, in its distribution over the great surface, that it may with truth be affirmed, that it is felt in every fire that is lighted, every day, in every house in Britain—in the expense of the fuel! as well as distributing its beneficial effects, in affecting an infinite variety of the necessaries of life!

This view of what is called the "shipping interest," I am taking, to shew that ship-owners are a body of people, to whom the public will always be ready to pay a fair and proper consideration for the use of their capital, the exercise of their abilities, and the application of their time, to objects with which the said public cannot dispense, being, in fact, dependent upon such exertions of the ship-owners for much of what they require. And such view leads to this conclusion, that the *honest* ship-owner has no interest in having a bad ship; that, in fact, he may make just as profitable a use of a good one, supposing that any plan were adopted by which, in the use of a good vessel, he

should be upon a fair footing with his neighbours,—and that they who set principle at defiance should not come in competition with him, by the employment of ships inferior, and perhaps hardly sea-worthy, though not so classed in that infallible book, lately got up with such pretensions to wisdom, "the Register Book of Shipping!"

The ship-owner must, however, also be protected against foreign competition; so that he is not *under-sailed* by ships of other nations: this, at first view, may appear an awkward difficulty to surmount; but I do not fear getting over it,—and this, without questioning in any way the soundness of free trade, so wisely acted upon, though so ignorantly questioned, by the bulk of ship-owners; for whose information on this score, I would recommend a perusal of what I think is the clearest written treatise on the subject extant,—a pamphlet by "Richard Moorsom, Esq. on free Trade, as affecting Shipping." I cannot pass over the noticing of this gentleman, and the one I named at the commencement of this letter, (the member of parliament for Hull,) without recording my satisfaction in claiming acquaintance with two such able men, as "old school-fellows."

Let us view, in proper colours, the defects of existing ships. I remember many years ago, perhaps more than twenty, hearing a surveyor of the East India Company's Ships state plainly, "that their ships were strong enough." The gentlemen of Kirkcaldy will probably attribute this *very wise* remark to interested motives—that the said surveyor's salary would not be necessary, except, in fact, the ships of the East India Company were, and continued to be, *defective:* this opinion is, doubtless, well founded—has its basis upon human nature—upon the abominable money-making propensities of the great bulk of mankind, (without, too frequently, reference to the means:) this is, I fear, too melancholy a truth for me to dispute, even were I so disposed, which I am not; although I am, at the same time, desirous of adding another reason for the disgraceful state that the art of ship-building is in;—and that is, *ignorance!* an inconceivable degree of ignorance!!

I verily believe that, however the East India surveyor might be, and no doubt was, influenced by interested motives, in making use of the expression above stated, yet, at the same time, that he was in earnest, and that he believed what he said: the stupidity is on this subject so universal, that it is very doubtful whether or not the present state of ship-building is not to be attributed, even in a greater degree to downright ignorance, than to the interested motives to which your north-country friends ascribe it. We will, however, take both as operating causes—interest and ignorance: the former is clearly to be attributed to the builders generally; they have no interest in building a good

ship,—that is clear enough. There are a set of builders, at the out-ports, especially in the north of England, who build ships which they never expect to see again for repairs, as their great end is building. These builders, however, generally combine within their establishments the means of fitting the ship for sea; or, they turn the supplying of stores to account, in the way of reciprocity, which amounts to the same thing. But generally, in London and the large ports, ship-building is carried on more as an auxiliary to the *repairing docks*; profit in the building is not looked for, the object being to make or increase connexions; to augment *real business*, (by which is meant repairing;) and if not made a stipulation, it is always an implied condition, that the repairs shall be done by the builders! Under such circumstances, it is not likely that any truths should issue voluntarily from these parties: not that I mean to assert they are universally capable of rendering such desirable information. Ship-*breakers* could say a great deal more to the purpose—but it is not, of course, to be expected from them. Without, however, looking further for parties who cannot, or will not, speak the truth, I must set about it myself in good earnest, as *one of the public;* being in no other capacity interested in the question whether our merchant ships are as good as they ought to be, and, if not, whether they are capable of being made so.

The whole system is radically bad; and, to avoid repetition of what has been already shewn by the pamphlets published at Kirkcaldy, as well as by the observations in your magazine, I will not enlarge upon this; but content myself by stating what no one will dispute—that the system of registration of shipping, connected with the necessary attendants upon it, the *abuse* of sea insurance, have been quite causes sufficient to prevent British merchant-ships being other than the very defective fabrics they are.

How the public suffers by this system, has also been clearly pointed out by the north-country gentlemen; and I can readily concur with them, when they state their belief that this loss in money amounts to *a million sterling*, and to 2000 *seamen's lives, annually!* Let me now attempt to shew in what manner these important constructions are proceeded with; and, if I do not overrate my powers of description, I think I shall shew that the usual mode of constructing a British merchant-ship is the most stupid, the most outrageously insane proceeding, under the sun!

It would be amusing to hear the remarks that would probably be made by a scientific man, wholly unconnected with a ship, if he were taken to see a north-country one in progress of putting up the timbers, which they miscall "a frame," and which it *is* in the king's yards, and should be every where else. I will suppose a "Watt," for instance, looking at this precious mass of timber; he would naturally ask, what it was all intended to effect; he would

then, perhaps, be told that it was upon such "a fine frame of timber," that the strength of the ship depended: this is about the extent of the *explanation* these north-country builders could give, and, notwithstanding the difficulty there would evidently be in any one shewing how such an *unconnected* mass constituted strength; yet there is not one in a hundred of them that does not really believe what I suppose him to have said; and, instead of looking to the *planking*, (which in reality constitutes their ship,) for strength, they will, almost to a man, assert it to be found in the "fine frame of timber."

Before going further in speculating upon the remarks such an observer as the late James Watt would probably make, let us try to convey to the uninitiated what a ship is. I mean this description to apply generally; there are some few exceptions: Some of the ships built in the river at Bristol, and occasionally elsewhere; but even to a very few of these, can other remark be applied than that they are also far, very far, from what they ought to be.

With very trifling exceptions, therefore, a British merchant-ship is thus proceeded with:—Her keel, stem, and stern-post, and floors-timbers, are very fairly connected together, *and here ends all that can be said to be connected.* The lower futtocks are then put into the place intended for them; these are stout timbers, which occupy such portion of the space between the floors as serve to complete the bottom-timbering of the ship: these stop short of the keel about a foot, and project beyond the floor-heads to a certain extent, more or less, according to the caprice or convenience of the builder; to form, what is termed, "a shift," with the first futtocks; which subsequently come on the floor-heads: these lower futtocks are held in their places by "ribbons," which are temporary, long pieces of wood, nailed, the whole length of the ship, on the outside of the timbers, as the ship is proceeded with. Thus *one half* of the very bottom of the ship is formed of these *loose* timbers, which *have no connection whatever* with any other part of her timbers. Next, what is called the "frame-timbers" are prepared, which consist of perhaps from 8 to 12 sets; they abut on the heads of the lower futtocks and floor-timbers, and proceed within one length of top-timber, to complete the form of the ship in these different stations. These frames are tied together in a temporary way, by planks nailed from one side to another, supported in the other direction by "shoes," and secured fore and aft by the ribbons. The foremost of these frames is so far from the stem, as to form the first part of the square body, or full breadth of the ship.

The wales, (or bends) are then worked round these frame-timbers, the harpins, as they are called, that is, the part of the wales at the round of the bow, and the after-ends that are much bevelled, to work round to the counter, and partly under the wing transom, are cut to moulds, and then these four to six strikes of wales are

worked at both ends, without any timbers to which to attach them; they are, therefore, thus fastened up and down, the one to the other. Let the reader pause, and imagine the skeleton of the ship thus far: these frames are absolutely *unattached* to the bottom; and the floors, as I have said, only proceed so far towards the ends as where they can be formed of tolerably straight timbers, or discontinued after they begin to form considerably diminished angles; towards the bow they do not extend so far, as *where the foremast will be stepped.*—(This is a most important defect, and one which I have seen cause the loosening of the whole fore-body of a ship.) Now commences the fitting-in of the timbers; for which purpose, the ribbons, already alluded to, are nailed outside, at intervals, all round the ship; so as to give the looker-on almost the first idea of what the works are intended for: they form the outline of the ship. Forward and aft, this requires some nicety; as it will be recollected, that it has been stated that the frame timbers are few in number, and at considerable distance from the extremes: and how does the reader imagine the form of the extremes of the ship is given by these ribbons? A "ricker," as it is called, being a long straight Norway or Baltic spar, of small diameter, is sawn down the middle, and used for ribbons, the flat side nailed to the timbers; and, in a great degree, *upon the tendency of this ricker to bind equally in both its halves*, depends *both sides of the ship being alike.* With the more advanced *in science*, these ribbons (especially for the bow) are however laid off in the mould loft, and sawn out. Moulds are now made from the inside, to "fay" against the ribbons; and the ship is complete in timbering. With some, a regular shift is observed: that is to say, that every other timber shall, at its joining, have a certain space intervene between their extremities; but very commonly, no nice degree of attention is paid to this very necessary point,—the timbers, as they proceed upwards, (in the whole, from the keel to the top, consisting perhaps of five or six pieces,) have *no connection* at their joinings; that is to say, the head of the one and the heel of the next, are entirely unconnected; they don't even rest one against the other; their ends being, in fact, left such as the woodman or chance happens to have formed them. Before the foremost floor, and abaft the aftermost, the timbers come down against the dead wood, and are there secured, partly by the ribbons, and partly by tree-nails, till the planking is brought on at their heels, forming *a wedge*, very prettily adapted to start off the "garboard strake," upon receiving a blow "under foot."

In some of those yards where the darkness of the barbarous ages does not exist in its utmost obscurity, they have been led to adopt what they consider to be a wonderful improvement in the system of timbering; they have actually tried to connect the

series of timbers by "chocks" thus :—they cut out a sort of triangular piece from the extreme of two contiguous timbers, and put in a short chock, as shewn by the dotted lines, forming to all appearance, when looked at from the inside, a fair and continuous surface: this chock is kept in its place by short pegs, or treenails, and is ultimately, when the timbers are bored off for the treenails of the planking, *split all to pieces*. This is about as pretty a contrivance as can well be imagined; to form all the timbers into wedges, *to force off the planking* upon a ship receiving a heavy blow from beneath. Of course, all the superincumbent weight has a tendency to settle downwards; and it must be readily seen what the effect of these pointed ends must produce, especially from a *sharp* blow. The above "chocking system" has, however, been so far improved upon as to obviate these consequences, and it is thus: but this has never found its way into use at the outports, except very partially. The same may be said of "cross-chocking the futtocks;" the latter being, though far from perfect, a good plan, unquestionably; the other description of chocks, little else than a farce!

Now let us suppose the late James Watt looking over a ship in this stage of her building, and all I have said explained to him; with what perfect amazement I can conceive he would be involved! and I should anticipate he would put this question to the builder.—"Suppose the ship could be shored *horizontally* at the planking, (the wales,) and all the other shores and ribbons taken away, would not the whole fabric fall to the ground?" Only fancy the astonishment such a question would cause; and I defy the builder to answer otherwise, than agreeing in admitting that such would be the case! The real fact is, that this firm fabric would come tumbling to the ground, leaving keel, floors, stem and stern post, which I have already said are the only connected parts.

Now look at the contrast—the frame of a ship, which any builder may see every day for the trouble of visiting the king's yards; he shall then see a man-of-war in frame, without any planking worked round her. Leave only a few ribbons to steady the top-timbers, and she shall not only be submitted to this test without her altering her form in the least, but, supposing her to be building in a dock, where she could be floated by the gradual admission of the water, she would actually swim, into the bargain!! Supposing Mr. Watt to have been removed from one scene to the other, what would be his exclamation?—"Since I saw the skeleton of the merchant ship, and had it explained to me, *I must have been lying in a state of torpor for some centuries*, and am now suddenly resuscitated, to see what is before my eyes! or the former was a dream! for it is utterly impossible for me to imagine

the reality of both scenes existing in the same country and in the same age!!"

Let us now conduct this unprejudiced and scientific observer to a merchant-ship in dock, where he would observe how carefully this fabric—formed, as he had supposed, to buffet the waves, not only unsupported, but to defy assaults—he would see this ship shored with the utmost care in all directions, lest she should alter her form, and fall to peices; he could not but especially observe that she was shored *under her bottom* (or bilge.) After he had considered what he had witnessed of the timbering of the ship on the stocks, it would not be unlikely that he would put the following question:—"Supposing you were to take away those shores, (under the bilge,) and, finding the planks in that part defective, were to take them out, *would not the whole of the body of the ship slip down over the floor-heads into the bottom of the dock?*" Has the possibility of such an event ever occurred to the shipwright? the shores under the bilge would lead to the supposition that it has; and that he could not answer the above question, except in agreeing that such would be the consequence of their removal, and that of the plank.

(To be concluded in our next.)

BRITISH SHIPS AND BRITISH SEAMEN.—No. III.

(Continued from p. 84.)

RETURNING homewards, full of what I had seen in the Indiaman, and satisfied that I had learnt something of the treatment of the seamen in merchant-ships, I was met by my old friend Lieut. Staysail. My excursion to Gravesend afforded us ample conversation, and, being an old hand at the tar-brush, as he humorously styled himself, he was not a little amused at my description of the ship's forecastle, and the costly fare that I had found there.

"Why, Mr. Ernest, the place is a palace," he observed, "compared with some; and as for room to hang hammocks up in, why, that's a luxury that hundreds of ships can't boast of. Sir, there are many ships afloat now, in which the men have scarcely room to stretch their limbs, even on water-casks, cables, old rope, sails, or other stores; and if they become sick, they have but a poor chance, for the captain may be a very good seaman, and even that's not always the case," added the lieutenant, with a significant look; "but if he should be, that will not make him a good doctor, and Jack has a better chance of being abused for skulking, than he has of being scratched off the list cured."

My friend Lieutenant Staysail being well known as a humane and benevolent man, as well as a good officer, I was desirous of knowing his opinion on the subject of discipline. "An officer who

is a good disciplinarian, Mr. Ernest, is not one who will punish or dislike a man because he is ugly, or because he may look sulky, but one who will not suffer a fault, or a breach of duty, however trifling, to pass without some reprimand or punishment; nor a good action to pass unnoticed or unrewarded. Without order and uniform discipline, sir, no ships, either king's or merchants', can be kept in an efficient state, or be fit for the service they are employed on."

"But, surely you do not advocate flogging," I observed.

"Although not an advocate for the frequent use of the cat," replied the lieutenant, "I am decidedly against laying it entirely aside. It may be very well for you, Mr. Ernest, who have never been at sea, to be shocked at the idea of a man being stripped at the gangway, to receive a dozen lashes or so; but believe me that you, and many other gentlemen of England, who live at home at ease, think ten times more about it than the poor devils who get it. The great point is, to convince them that they deserve it, and to inspire them with the disgrace of it, and in using it to shew that it is not done spitefully or partially. But as for doing it away, why, sir, I myself have asked hundreds of them what they thought of it, and they have invariably confessed that no ship of war could be governed without it; for, if it was not for fear of the cat, a peaceable well-disposed man would not be able to sit quietly in his berth, without being bullied or insulted by some turbulent and quarrelsome messmate. A good man, sir, one who never flinches from his duty, knows well he can do it without the cat; but he knows that there are those who cannot, and therefore he is for keeping it on board. In the course of my experience in his Majesty's service, I met with a sigular instance on this point, which will give you a tolerable idea of the feeling that some seamen have respecting it.

"In one of our finest frigates, commanded by a most excellent and approved officer, there was a foretopman, who was one of the smartest and best seamen in the ship; his zealous daring, activity, and general good conduct, had deservedly made him a great favourite with every one on board, from the captain downwards. But, unluckily, all his good qualities were obscured by an inordinate fondness for grog. The fellow, by making himself useful in a thousand ways, often raised the wind, to get more grog than he could carry. Well, sir, this was allowed to pass unnoticed once or twice, and, after being admonished to no purpose, the next time he was severely punished for it. He backed it off like a Briton, as his messmates foolishly told him after he was cast off, and it was not long before he offended again. The captain declared open war against him, and assured him that as often as he got drunk, and was insolent to his officers, so often he would flog him; and when he went forward, he swore deliberately that

the captain might find cat and he would find back, and would get drunk whenever he could, but that he would be d—d if he would not always do his duty like a man. And well he kept his word, for he was often drunk, and as often punished, but still was a favourite, so that at last the captain in pity gave him up as incorrigible, and resolved not to punish him any more. Well, sir, sailors they say are like children, and in some respects so was the foretopman, for after some time the poor fellow began to lose his cheerfulness, and seemed a poor dispirited and almost useless fellow; he was always moping by himself; and when asked by one of the officers what had happened to him, he said, Why, Captain B—— does not care a d—n about me now, no more than if I was a sweeper or a loblolly boy in the ship, for if I get ever so drunk now, he does not think me worth a dozen. So you see, Mr. Ernest, after all he was good at bottom, and every one in the ship knew it, and none better than Captain B——, who rated him captain of the top, made him strokesman of his gig soon after; and the foretopman became one of the most exemplary men in the ship."

The next day, on dining with the lieutenant, I had an opportunity of seeing his collection of books, which appeared to be mostly professional. On looking over them, I selected one published in 1830, dedicated by the author to the Lords of the Admiralty. It was on the subject of naval discipline, and I was so surprised and shocked at the numerous instances of mutiny and insubordination related in its pages, that I almost felt ashamed at the cause I had been so warmly espousing. I laid the book aside in disgust, and took up the British Trident, James's Naval History, and Account of Shipwrecks and Disasters at Sea. Here I met with so many instances of undaunted courage, self-devotion in their country's cause; so much patient endurance under the most heart-rending trials of privation and human misery, that I felt more than ever the necessity of Government taking the whole class of seamen under their own peculiar and fostering care.

After dinner we resumed our discourse on nautical matters, and the great and absorbing question of impressment was accidentally alluded to. "That is a subject," observed Lieutenant Staysail, "that I have long and often thought of, and I am inclined to believe that it might easily and safely be dispensed with." This was gratifying to me, as I knew the lieutenant to be a man of strong mind and sound judgment, combined with great practical experience. "Now is the proper time, Mr. Ernest, to make the experiment. In the first place, Government should keep up as large a naval establishment as is consistent in times of peace, that all our ships may be kept fully manned with prime and able seamen, and stout, well-chosen lads as king's apprentices, bound for seven years. All the active men who are receiving pensions for length of service, should be kept in Government employ in the ordinary,

or as dock-yard riggers, in ships armed *en flute*, carrying troops, stores, convicts, or any other Government employ; as well as in the coast-guard, custom-house, revenue, &c.; so that they might be put into active service at a short notice. As soon as a correct registry can be got, every seafaring man, without distinction, should be enrolled, in the same manner as the militia, and informed, that in the event of war, every man so enrolled should, under a heavy penalty, stand a fair and open ballot to serve for three years or more in the navy. None should be exempt, except the aged and infirm, without paying the amount of fine, or finding a substitute from among the men not chosen. The municipal authorities of every sea-port town should be made responsible for their quota as fixed by law; and penalties, or long and forcible service on non-appearance, when called upon by proclamation, if at home. Government throughout the peace should station small receiving-ships at all the principal sea-ports in the united kingdom, commanded by intelligent officers, acquainted with the prejudices and habits of sailors, to hold out to all those not aware of it, the manifold advantages arising to a seaman for steady and faithful service in the navy. These officers should have permission to volunteer a sufficient number of prime men, to be sent round to the king's ports by steam-vessels, to be kept in readiness to replace the crews of ships returning from foreign stations; for there are thousands of fine young men now springing up as seamen, who have no other idea of the navy than the frightful stories of impressment, privations, and punishment, told them by the older hands, that took place during the last war. With these regulations, and by allowing those marines who were so disposed, to change their red jackets for blue ones, just as the militia are allowed to volunteer for the regiments of the line, a fleet might be manned in an incredible short space of time, Mr. Ernest; whereas, were a war to break out suddenly, sir, you could not man a dozen ships without ripping up the old sore of impressment—which would be borne, if at all, with a very bad grace."

I expressed my surprise at his plan of allowing the marines to enter as seamen, when he assured me, that when serving in a brig during the war, the marines were as good seamen as any on board, and a thousand times better than the drafts of men from the guard-ships. "Besides, sir," he added, "marines can be easily replaced by volunteers from the militia or artillery, by holding out proper encouragement, and I am surprised that the plan has never been brought forward by any of our old flag-officers.

Table XXVIII.

For reducing Egyptian Ells to English, and English Feet to Egyptian Ells.

1 Egyptian Ell = 1·72550405 English foot.
1 English Foot = 0·57954080 Egyptian ell.

Egyp. Ells, or Engl. Ft.	English Feet and Dec. parts.	Egyptian Ells and Dec. parts.	Egyp Ells or Engl. Feet.	English Feet and Dec. parts.	Egyptian Ells and Dec. parts	Egyp Ells or Engl. Feet.	English Feet and Dec. parts.	Egyptian Ells and Dec. parts
1	1·726	0·580	40	69·020	23·182	79	136·315	45·784
2	3·451	1·159	41	70·746	23·761	80	138·040	46·363
3	5·177	1·739	42	72·471	24 341	81	139·766	46 943
4	6·902	2·318	43	74·197	24·920	82	141·491	47·522
5	8·628	2·898	44	75·922	25·500	83	143·217	48·102
6	10·353	3·477	45	77·648	26·079	84	144·942	48·681
7	12·079	4·057	46	79·373	26·659	85	146·668	49·261
8	13·804	4·636	47	81·099	27·238	86	148·393	49·841
9	15·530	5·216	48	82·824	27·818	87	150·119	50·420
10	17·255	5·795	49	84·550	28·397	88	151·844	51·000
11	18.981	6·375	50	86·275	28·977	89	153·570	51·579
12	20·706	6·954	51	88·001	29·557	90	155·295	52·159
13	22·432	7·534	52	89·726	30·136	91	157·021	52·738
14	24·157	8·114	53	91·452	30·716	92	158·746	53·318
15	25·883	8·693	54	93·177	31·295	93	160·472	53·897
16	27·608	9·273	55	94·903	31·875	94	162·197	54·477
17	29·334	9·852	56	96·628	32 454	95	163·923	55·056
18	31·059	10·432	57	98·354	33·034	96	165·648	55·636
19	32·785	11·011	58	100·079	33·613	97	167·374	56·215
20	34·510	11·591	59	101·805	34·193	98	169·099	56·795
21	36·236	12·170	60	103·530	34·772	99	170·825	57·375
22	37·961	12·750	61	105·256	35·352	100	172·550	57·954
23	39·687	13·329	62	106·981	35·931	150	258·826	86·931
24	41·412	13·909	63	108·707	36·511	200	345·101	115·908
25	43·138	14·488	64	110·432	37·091	250	431·376	144·885
26	44·863	15·068	65	112·158	37·670	300	517·651	173·862
27	46·589	15·648	66	113·883	38·250	350	603·926	202·839
28	48·314	16·227	67	115·609	38·829	400	690·202	231·816
29	50·040	16·807	68	117·334	39·409	450	776·477	260·793
30	51·765	17·386	69	119·060	39·988	500	862·752	289·770
31	53·491	17·966	70	120·785	40·568	550	949.027	318·747
32	55·216	18·545	71	122·511	41·147	600	1035·302	347·724
33	56·942	19·125	72	124·236	41·727	650	1121·578	376 701
34	58·667	19·704	73	125·962	42·306	700	1207·853	405·679
35	60·393	20·284	74	127·687	42·886	750	1294·128	434·656
36	62·118	20·863	75	129·413	43·465	800	1380·403	463.633
37	63·844	21·443	76	131·138	44·045	850	1466·678	492·610
38	65·569	22·023	77	132·864	44·625	900	1552·954	521·587
39	67·295	22·602	78	134·589	45·204	1000	1725·504	579·541

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

The Theory and Science of Naval Architecture, Familiarly Explained and Intimately Blended with the Art, &c. &c. By Isaac Blackburn, (late of Plymouth,) Shipbuilder.

The title of this little work wears such an imposing appearance, that we were led to expect an explanation of the theoretical principles of the abstruse science of naval architecture, demonstrated by diagrams mathematical, and drawings of models of the most approved forms of construction. So far we were disappointed; but, instead thereof, we find a vast deal of practical experience in the art of ship-building, and a familiar dissertation on the properties or qualities of different forms of ships. Mr. Blackburn is evidently an experienced artisan, and has here thrown together the result of long observation and practical knowledge: he has produced, what we should consider, a familiar dissertation on the various parts of a ship, rather than having gone into the theory of naval architecture. There are many of our readers who may profit by the excellent hints which it contains, if he skip over a few passages in part the second, where the aid of sound mathematical knowledge was evidently required; and we may safely recommend it, on the ground of the practical information which it contains, to the young naval officer, the amateur sailor, and the shipbuilder.

An Historical and Descriptive Account of China, &c., with a Map. By Hugh Murray, F.R.S.E., &c.

This is the first of three volumes of that favourite work, the Edinburgh Cabinet Library, intended to comprise a history of China. We can only now announce its appearance, and have no doubt, from the names we observe in the title-page, that it will preserve the high character which is held by that valuable little library.

Arrival of the Lady Jane, *(Whaler.)*—The Lady Jane of Shields, the last but one of the detained ships, has at length arrived at Stromness, leaving now only the William Tor in the ice in Baffin's Bay. We regret to state that twenty-two of her crew have fallen victims to the severity of the climate and the want of provisions; and that of the remainder, and some of the crew of the Mary Frances, ten or twelve only were able to move on her arrival. The rest were sent to the hospital at Stromness in a dreadful condition. Captain Ross is making the best of his way to the Danish settlement in Baffin's Bay, from whence he will use every possible exertion to communicate relief to the crew of the William Tor.

We perceive that the usual whaling ships of the coming season are fitting out, and are glad to find that a bill is in progress through parliament, to oblige them to carry out a year's provisions from the time of their sailing.

A case of importance to seamen and masters of vessels has lately been decided by the Thames police office; namely, that the crew of a vessel leaving her on her arrival in port, without discharging the cargo, when required by the master to do so, is considered desertion.

NEW CHANNEL INTO THE CATTEGAT.—A few years ago, the sea made an irruption on the west coast of Jutland, through a narrow tract of land which formed a barrier between the sea and the Limfiord, a large inland lake, which communicates on the east coast with the Cattegat. The aperture thus formed, called the Agger Channel, (from its immediate proximity to the fishing village of Agger,) is situated in lat. 56° 40′ 42″, and establishes a junction with the Limfiord and the North Sea, by which the northern part of the peninsula is perfectly isolated.

This channel has not only remained perfectly open, but has been deepened by the current, so much that vessels drawing less than seven feet may use it, provided the masters are acquainted with the navigation. Last year, sixteen vessels passed through this channel outwards, most of which were bound for Hamburgh, one for Hull with grain, and several for Norway.

If this passage become navigable for larger vessels, of which there can scarcely be any doubt, it will be of an immense advantage to the western part of Jutland, as many of the trading places on the Limfiord, such as Thisted, Nikiobing, and others; the circuitous route round the Scaw, being avoided by it, will more easily export the products of the country to England and other parts, and with less expense procure those commodities they want in return. Besides these commercial advantages, an asylum for vessels in distress has been a great desideratum in that part of the coast, and it is expected that the Danish government will have sea-marks erected at the entrance of the channel, and appoint pilots there for the benefit of shipping.

ASYLUM HARBOURS.—We congratulate our seafaring brethren, who are daily braving the formidable dangers of our eastern coast, on finding the following entry in the minutes of the House of Commons. We trust that the labours of this important Committee will lead to the means of remedying the deficiency which every one knows does exist, and thereby the further loss of life and property arising from it may be prevented. "Harbours of Refuge.—"Select Committee *appointed* 'to inquire into the alleged deficiency of pro-"tection for ships on the north-eastern coast of England, and the propriety of "admitting of contribution of passing tolls for the maintenance of harbours of "refuge on that coast:' Mr. Bethell, Sir George Strickland, Sir Matthew "Ridley, Sir George Clerk, Sir Edward Codrington, Sir Hedworth William-"son, Mr. Labouchere, Mr. Beilby Thompson, Mr. George Frederick Young, "Mr. William Duncombe, Mr. Bell, Mr. Alderman Thompson, Mr. Robinson, "Mr. Aaron Chapman, Mr. Hall.—Power to send for persons, papers, and "records; five to be the quorum."

NAUTICAL INVENTIONS—The model of a windlass has been submitted to our inspection, in which the inventor Mr. H. Massy, of Portsea, proposes to prevent the upsetting of the pauls, with all the disastrous consequences attending it, by bracing the barrel of the windlass to the paul-bits by means of an iron strop passed around it. By tightening the strop, it would appear to be Mr. Massy's intention to force the barrel against the ends of the pauls, in order to keep them down in their places; but it is a contrivance which does not appear to us likely on several accounts to become a favourite one with nautical men.

LIFEBUOYS—An important improvement, and one which was has been long desired, has been made in Lieutenant Cook's lifebuoy by Mr. Sloper, carpenter, of the Navy. Mr. Sloper has contrived the fitting so that the same line which fires the port-fire for night use, shall let fall the buoy, thereby effectually preventing the repetition of those accidents which have frequently occurred, of letting go

the buoy at night before firing the port-fire, by which the buoy has been rendered useless. We have long been of opinion that this was all that was wanted to render Lieutenant Cook's lifebuoy complete, and we are glad to find that Mr. Sloper has been presented with a medal by the Society of Arts for his ingenious production.

LOWESTOFFE NOT AN ASYLUM HARBOUR.—We understand that during the late destructive gales since the 19th of December, twenty-seven vessels (the largest not drawing more than ten feet water) have found a refuge in Lowestoffe harbour. By this it must not be supposed that Lowestoffe is an asylum harbour, for our eastern coasters know better; and that vessels of six and seven feet draft only can pass the bar at high water of neap tides, and those of eight or ten only at high water springs! The bar nearly dries at low water, and must therefore be impracticable in gales on shore. Indeed, on these occasions, the harbour's mouth is nothing but a line of breakers, defying entrance to ship or boat!

WRECK PLUNDERING.

W. DOBSON, Esq. Lloyd's.

Sir.—The Brig Atalanta from Greenock for Trinidad, out nine days, was last night driven on shore in Dunaha Bay near the entrances of the Shannon: when my informant left her, the country people had assembled in great numbers, and had cut a great part of the rigging. I immediately despatched my son with a strong police force, and hope they arrived in time to prevent any serious injury.

Your obedient servant,

Kilrush, 17 March, 1836. JAMES PATERSON.

Loss of H. M. SCHOONER PIKE.—The following is from the *St. Jago Gazette*, of the 6th of February:—"Old Harbour, 9 o'clock A. M., February 6th.—About half-past nine last night, the reports of several heavy guns, as from a ship in distress, were distinctly heard at Old Harbour. R. G. Hume, harbour master, and Capt. Allen, of the Hornby, immediately proceeded in search of the distressed vessel, and found her to be his Majesty's schooner Pike, Lieut. Brooking, bound from Port Royal to Montego Bay. She had struck on the Pelican Reef, supposing herself to be further to the southward. We are happy to say that by the great exertions of the officers, ably seconded by the above-named gentlemen, the whole of the crew were saved, although the vessel herself is a total wreck."

THE STRAIT OF MAGALHAENS.

With reference to the Notes of the Basilick given in this number, we add the following extract of a letter from her commander.

"I however am of opinion, that nothing is more easy than the navigation of these straits, resembling, as they do, a canal on an extended scale; and, if done by the art of man, dangers could not have been more carefully avoided. My companion, the North Star, arrived at Valparaiso on the 25th, being six days later; and on comparing notes with Captain Harcourt, I found that the winds were the same in our relative positions, and days, that is to say, between the 1st and 10th of August, the North Star's latitudes ranging between 55° and 59° S., and the thermometer from 30 to 14, she encountered severe gales, and the cold so intense, that one man died while looking out, and two others were with difficulty re-animated. Now, during the same period in the straits, we encountered the same winds, but with this difference, that the water was, comparatively speaking, smooth, and my ship's company in bed all night;

the thermometer ranging between 40 and 29, the medium 35. From Falkland Islands, which we left on the 26th together, the North Star was twenty-eight days, and the Basilisk twenty-two; shewing that in this instance the straits is the most desirable route. Several masters of merchant ships have requested me to give them my route through, and say that they would wish much to pass and repass through the straits, were it not for the difficulty attending it, and the objection the insurers make. They are of opinion, that if the Basilisk's passage through was known, it might tend to make the straits the common route.

"I have had an interesting trip with Captain Harcourt to Santiago, and went near to the mountain which Capt. Fitzroy measured, I believe 24,000 feet; but since then I had to accompany our consul at Islay to Arequipa, situated still nearer the Andes, and close at the foot of a volcano, about 17,000 feet high, and of the most perfect and beautiful form you can imagine; its companions, the Andes, were covered with perpetual snow; but not so the volcano, on which the snow never lies longer than three days. I also saw General Miller, a most intelligent person, who has just returned from a tour in the interior, and saw a river which he thinks may communicate with the Amazon; and he thinks it not improbable but that steam-boats may come direct from England, *via* the Amazon. This is certainly a most interesting country to see, and rich in natural productions.

"I passed over the spot where a rock or shoal is marked as that of St. Juan de Ulloa, off Concepcion, but saw no signs of either. Also, I passed near to that rock marked "L'Aigle," on which it is said a French frigate of that name was lost, and a boat's crew only survived to tell the tale. The truth of this is most important, for its situation, being directly mid-channel between Falkland Islands and Cape Virgins, makes it so; but I must say that I gave it a wide berth.

"I am now off to join the Commodore at Lima, who is constantly there, from the internal quarrels of these military chiefs, who, setting all law at defiance, are enriching themselves at the expense of the industrious classes, whose exertions they paralyze.

"Several vessels have just arrived from England, and who experienced the most severe weather off Cape Horn, to round which many of them have taken a month and more. The weather and thermometer always undergo a change off Cape Pillar. They certainly ought to go through the straits.

"Dear Sir, Yours sincerely,

"G. G. Macdonald, Lieut. & Com."

Expedition down the River Darling.

(From the New South Wales Government Gazette.)

Colonial Secretary Office, Sydney, 17 *Sept.* 1835.

His Excellency the Governor has been pleased to direct that the following communication, dated the 4th instant, from Major Mitchell, Surveyor-General of the Colony, reporting the result of his exploring expedition into the interior of the Country, be published for general information.

By His Excellency's Command,

Alexander M'Leay.

Camp, West of Harvey's Range, 4 *Sept.* 1835.

Sir,—I have the honour to submit for the information of His Excellency the Governor, the following report of the progress of the party, and result of the expedition which His Excellency was pleased to place under my command, for the purpose of exploring the course of the river Darling.

Having joined this party at Buree on the 5th of April, I reconnoitred the country on the following day, and on the 7th we proceeded, by a route not hitherto explored, to that part of the Darling specified in my instructions. My plan was to proceed along the high ground between the rivers Lachlan and Macquarie, and which extended further into the interior than had been explored. Thus I hoped to avoid the necessity for crossing any rivers, or incurring any risk of delay from floods, such as those which formerly at the same season of the year impeded the progress of the late Surveyor-General. Another object I had in view in choosing this route, was to extend my trigonometrical survey as far as possible along these heights into the interior.

By this line we reached the river Darling near the junction of New Year's Creek in thirty-one days' travelling from Buree; having found the country so favourable that it was never necessary to unload a dray, or cut a way through scrub, or to pass a night without water. On my right I had the waters of the Bogan, and on my left a connected chain of heights whereof New Year's Range is the last.

But a grievous misfortune befell the expedition in the loss of Mr. Cunningham, the Colonial Botanist, who wandered from the party near the head of the river Bogan, on the 17th of April. After an anxious search continued for twelve days, during which the party halted, his horse was traced till found dead, having still the saddle on, and the bridle in its mouth. It appeared that Mr. Cunningham, after losing his horse, had directed his own steps northward; we traced them into the Bogan, and westward along the bed of that river for twenty miles, and until they disappeared near a recent encampment of natives. There, a small portion of the skirt of his coat was found, also some fragments of a map which I had seen in his possession. There were two distinct tribes of natives on the Bogan, but from those with whom we had communication we could learn nothing of his fate. I have ever since indulged a hope that he might have crossed to the Macquarie, and so returned to the settled districts, but this hope has not relieved me much from the most painful apprehensions, considering the disposition of the natives. Whether Mr. Cunningham really survives or not, his absence has made a melancholy blank in our party, and has certainly caused a serious loss to science.

We found the interior country parched by such excessive drought, that the swamp under Oxley's Table Land, mentioned by Captain Sturt, was completely dry, and only a few ponds remained in the river Bogan (which is New Year's Creek of that traveller.) Indeed, for three hundred miles below that creek, we drank no other water than that of the Darling. In this river there was a slight current, the quantity flowing in rapids being about as much as might be required to turn a mill. The water was in all parts as transparent as that of the purest spring well, and it entirely lost all brackish taste below an extreme point of Dunlop's Range, where a hill, consisting of a very hard breccia, closes on the river, so as to separate the plains above it from those lower down. The taste of the water was worst where the river is nearest to D'Urban's Group—above that, at the junction of New Year's Creek, and for seventeen miles from thence downwards, it was excellent.

When the party first arrived on the Darling, I was induced, from the favourable appearance of the reaches, to try at what rate I might proceed on the river with the boats. It was necessary to rest and refresh the cattle after so long a journey, even had I possessed no other means of proceeding further. That part of the river bank which I fixed on for the depôt, is situated about twelve miles below the junction of New Year's Creek; the position was naturally good, overhanging the river, and commanding a good run for the cattle; but I strengthened it as a place of defence against the natives, by cutting down

the few trees on it, and erecting a block-house large enough to contain all our stores and equipment.

On the 1st of June (the sixth day after our arrival) I proceeded down the river in the boats, with the greater portion of the party; and on the following day we returned to the fort, having found too many shallow and rocky places in the river to admit of our making such progress as was necessary to enable us to accomplish the object of the expedition.

Having next ascertained, by a reconnoissance I made as far as Dunlop's Range with a party on horse back, that the water below was good, and the country not unfavourable to our further journey by land; we evacuated the depôt on the 8th of June (the cattle having then rested two weeks) and proceeded along the left bank of the Darling.

As the cattle became weaker, the country, as we descended, became much more difficult for them to travel upon. It consisted chiefly of plains of naked earth, too soft to retain roots, yet just tenacious enough to open in deep cracks, across which it was not always safe to ride. Impassable hollows (covered with *polygonum juncium*) at length skirted the river so extensively, that we could seldom encamp within a mile of it, and sometimes not within three. Still we could not have existed there without the river, which contained the only water, and had on its banks the only grass for our cattle; consequently it was necessary to send a separate party to remain with the cattle at the river, generally in the presence of natives; and it required the utmost vigilance on the part of these men every night, to prevent the cattle getting bogged in the soft mud of the banks.

I had proceeded thus about three hundred miles down the Darling, when the weakness of the bullocks, and the reduced state of our provisions, obliged me to consider the expediency of going forward, with a small part only, and at a faster rate, while the exhausted cattle might, in the mean time, be refreshing for the homeward journey. But before deciding on the separation of the party in the presence of several powerful tribes of natives, I halted it to rest the animals while some preparations were going for setting out. In two days I was convinced, from the movements I observed amongst the native tribes, that in proceeding further at so great a risk of compromising the safety of the stationary party, I should have acted contrary to the 9th Article of His Excellency's instructions, and thereupon I abandoned the intention.

Scarcely an hour had elapsed after I had communicated to the men my determination to return, when firing was heard from the forage party on the river. At that time, a tribe of strangers, just arrived, lay before our camp. By amusing them, and intercepting a messenger, we succeeded in preventing them from joining the River tribe; while more men and a supply of ammunition were sent for, to reinforce our party on the river. These arrived just in time to prevent the sacrifice of seven of our men. A chief, to whom I had given presents, and shewn particular attention, had been the first to break the peace. The conduct of several of these tribes was very extraordinary. To conciliate them was quite hopeless, but not from any apprehensions on their part. On the contrary, the more we endeavoured to supply their real wants, and shew good-will towards them, the more they seemed to covet what was utterly useless to them, and the more they plotted our destruction. Some of their ceremonies were different from those of any other aboriginal tribes nearer the colony, such as waving the green bough, first setting it on fire, with furious gestures at us; throwing dust at us *with their toes*, and spitting at our men. They behaved thus just after they had received presents, and while we endeavoured, by sitting in the dust, to conform to their manners and customs. I had every reason to be satisfied with the conduct of my men in this affair. Of the three

parties most offending, two were killed, and one (the chief) shot through the groin. The only injury done, on our side, was the blow of a waddy by that chief, who knocked a man down while carrying water, in order to take his kettle.

We remained masters ever after of the left bank of the Darling, although a very savage tribe, one hundred and twenty miles higher, crossed one day in a scrub, and immediately set about burning the bushes and grass close to our tents, until we drove them across the river. I ought to mention that these were not strangers to us. On our way down we had taken much pains to conciliate them, yet they used the knives as soon as they got them, to cut the cording of our tents, and stole, or tried to steal, whatever they saw.

The track of our drays had formed a road, which was much easier for the cattle in returning, so that by short marches, and occasional rests, while I explored the country on each side, we reached the former depôt on the 10th of August, having lost only six of the bullocks, these having either got fast in the mud of the river, or lain down exhausted, and unable again to rise.

The interior country westward of the Darling is diversified with detached groups of hills, and low ranges broken into portions resembling islands, but the general aspect thereof afforded no indication of its having then any water on its surface. From two different hills, each about twelve miles west of the Darling, and distant from each other about seventy miles, I obtained extensive views across the country; but from neither of these heights could I perceive any smoke, or even any appearance of trees; the whole country being covered with one kind of bush, forming a thick scrub, with intervals rather more open, but strewed with smaller bushes. During the four winter months just past, no clouds gathered to any particular point of the horizon; no rain has fallen, neither has there been any dew; and the winds from the west and north-west, hot and parching, seemed to blow over a region in which no humidity remained.

The Darling did not, in a course of three hundred miles, receive a single river, or chain of ponds, from either side. Such was the extent of the plains on its banks, and the depth and absorbent quality of the soil, that much of the waters of high floods appear to be retained therein, besides all the drainage from the back country. Thus the springs appear to be supplied, by which the river is sustained during the present season of drought. These absorbent plains extend to about five miles, on an average, from the river on each side; hills of soft red sand bound them, and recede about three miles further. Undulations of diluvial gravel (of a very hard siliceous breccia) succeed and skirt the base of the heights, which generally consist of primary sandstone.

The country eastward of the river rises gradually backwards toward the hills by which I advanced to the Darling. There the higher grounds are more connected, and send down chains of ponds, which appear to be absorbed in the plains. The same kind of bush, however, covers the first region of high ground back from the Darling on both sides; and the character of features, and direction of vallies, were not very apparent from heights near this river.

The general course of the Darling, as far as I had explored it (which was to the latitude of the head of Spencer's Gulf,) is somewhat to the west of south-west (variation 8° 27′.) This would tend to the westward of the head of Gulf St. Vincent, if the longitude of the Upper Darling were correct; but I make the longitude of that river, on the parallel of 30° south, nearly a degree more to the eastward, and from that longitude the general course tends much more nearly towards the supposed junction below, although still considerably to the west of that point, as laid down on maps.

Having measured the whole of our route, and surveyed the country, as I pro-

ceeded, in continuation of my general survey of the colony, I had thereby the means of ascertaining the longitude of points connected therewith. Thus I place,

New Year's Range (clear hill,) in longitude	146° 53′ 00″ E.
The latitude (by several observations) being	30° 27′ 45″ S.
Oxley's Table Land (south side) in longitude	146° 16′ 9″ E.
Latitude	30° 11′ 15″ S.
D'Urban's Group (high south hill) longitude	145° 43′ 30″ E.
Latitude	30° 34′ 40″ S.
Fort Bouske in longitude	145° 52′ 12″ E.
Latitude	30° 7′ 0″ S.

The last mentioned, being an important station, accessible at all seasons by the line of the Bogan, and available for carrying the survey more into the country, I have taken the liberty to distinguish with the name of His Excellency the Governor, under whose orders the survey of the Colony has been connected with the geography of the interior.

From Fort Bourke I continued the survey of the Darling, by actual measurement, corrected by intersecting points, and also by observations of latitude, to the termination of my journey in latitude 32° 24′ 20″ S., and I make the longitude of that point, as deduced from this survey, 142° 24′ 26″ E.

Having ascertained the most westerly of the two creeks crossed by Captain Sturt on his journey beyond the Macquarie, to be the Bogan—and being desirous to discover the origin of the other named Duck Creek—I sent Mr. Larmer last week to survey it. Mr. Larmer returned yesterday from the Macquarie, having traced Duck Creek upwards to a large lagoon on the margin of that river, from which other lagoons and channels also led into this creek. Mr. Larmer found in Duck Creek extensive reaches of excellent water, but the bed of the Macquarie was dry where he made it. Thus it appears that as the dip of the whole country is to the westward, the surplus waters of the Macquarie are conveyed to the Darling by Duck Creek, a separate channel altogether to the westward of the marshes.

I have much satisfaction in stating, that no men could have been animated with a better spirit than those of this party have been for the accomplishment of the object of this expedition. Our long journey proceeded with equal regularity and security. No cattle were allowed to stray and retard it, and both these and the camp have been vigilantly guarded and watched every night. The patient forbearance and good-will of the men towards the aboriginal natives, deserves my highest praise, and certainly not less their courage when circumstances called it forth. This was most conspicuous when exposed almost singly to the savage natives, as they often were from necessity when watching the castle on the Darling.

I have to add, that our provisions are scarcely sufficient to supply the party until it reaches Buree; also, that one man is dangerously ill, and another unable to walk from scurvy.

I trust my humble testimony of the services these men have rendered under perilous circumstances, in expiation of the errors of the past, and with the best hopes and intentions respecting the future, will be favourably received by His Excellency the Governor.

I have the honour to be, Sir,
Your most obedient Servant,
T. L. MITCHELL.
Surveyor-General.

To the Honourable,
The Colonial Secretary.

Naval Register.

The Royal Navy in Commission—March 21st, 1836.

PORTSMOUTH.—Admiral, Sir Thos. Williams, G.C.B.—*Flag-Ship*, Britannia, 120.

PLYMOUTH.—Admiral, Sir William Hargood, G.C.B., G.C.H.—*Flag-Ship*, Royal Adelaide, 104.

NORE.—Vice-Admiral, Hon. C. E. Fleeming.—*Flag-Ship*, Howe, 120.

Asia, 84—Capt. W. Fisher, Sheerness, fitting.

Astrea—Capt. J. Clavell, Falmouth.

Britannia, 120—Capt. E.R.Williams, Portsmouth.

Cornwallis, 74 — Capt. R. W. G. Festing, Plymouth, fitting.

Cove—Capt. James Ross, 15th Feb. sailed, having refitted at Stromness.

Excellent—Capt.T. Hastings, Portsmouth, for practice of naval gunnery.

Hercules,74--Capt.M.F.F.Berkeley.

Howe,120—Capt.A.Ellice, Sheerness.

Minden, 74—Capt. A.R. Sharpe, C.B. Plymouth, fitting.

Pembroke, 74—Capt. Sir T. Fellowes.

Portsmouth, *Yacht* — Lieut. W. M'Ilwaine, Portsmouth.

Prince Regent, *Yacht* — Capt. G. Tobin, C.B. Deptford.

Quail—Lieut. Com. P. Bisson, Portsmouth station.

Royal George *Yacht*—Capt.Rt.Hon. Lord A. Fitz Clarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht* — Capt. Sir Charles Bullen, Kt., K.C.H., Pembroke.

Royal Adelaide, 104 — Capt. G. T. Falcon, Plymouth.

Seaflower, *Cutter*, 4—Lieut.J.Roche, Portsmouth station.

Speedy, *Cutter*—Lieut. J. Douglas, Portsmouth station.

Talavera, 74—Capt. T. B. Sullivan, Plymouth, fitting.

Vanguard, 80 — Capt. Hon. D. P. Bouverie, Portsmouth, fitting.

William & Mary, *Yacht*—Capt. Sir S. Warren, Kt. K.C.H., Woolwich.

LISBON STATION.

Rear-Admiral, W. H. Gage.—*Flag-Ship*, Hastings, 74.

Cameleon, 10—Lieut. Com. J. Bradley, 19th Jan. in the Tagus.

Castor, 36—Capt. Rt. Hon. Lord J. Hay, North coast of Spain.

Hastings, 74 — Capt. H. Shiffner, in the Tagus Feb.

Magicienne, 24—Capt. G. W. S. J. Mildmay, 26th December, at Cadiz.

Pearl, 20—Com. H. Nurse, 19th Dec. in the Tagus.

Phœnix, St.V.—Com. W. Henderson, Plymouth.

Ringdove, 16—Com. W. F. Lapidge, Oct. north coast of Spain.

Royalist, 10—Lieut. Com. C.A. Barlow, Oct. north coast of Spain.

Russell, 74—Capt. Sir W. H. Dillon, K.C.H., 12th Feb. at Ferrol.

Saracen, 10—Lieut. T. P. Le Hardy, Oct. north coast of Spain.

Tweed, 20—Com. T. Maitland, 12th Feb. left Cadiz for Lisbon.

Viper, 6—Lieut. Com. L. A. Robinson, 19th Dec. in the Tagus.

MEDITERRANEAN STATION.

Vice-Admiral, Sir Josias Rowley, Bart., G.C.B.—*Flag-Ship*, Caledonia, 120.

Barham, 50—Capt. A. L. Corry, 10th Feb. at Malta.

Caledonia, 120—Capt. G. B. Martin, C.B., 10th Feb. at Malta.

Canopus, 84 — Capt. Hon. J. Percy, 10th Feb. at Malta.

Ceylon, 2—Malta.

Childers, 16—Com. Hon. H. Keppel, 26th Feb. at Barcelona.

Clio, 16—Com. W. Richardson (*a*), 3d Jan. at Gibraltar.

Columbine, 18 — Commander T. Henderson, 22d Jan. left Malta for Corfu.

EDINBURGH, 74—Capt. J. R. Dacres, 10th Feb. at Malta.
ENDYMION, 50—Capt. Sir S. Roberts, 12th Feb. at Corunna.
FAVORITE, 18—Com. G. R. Mundy, Dec. at Smyrna.
JASEUR, 18—Com. J. Hackett, 22d Feb. at Gibraltar.
MALABAR, 74—Capt. Sir W. A. Montague, 19th Jan. at Cadiz.
MEDEA, 6 — In company with the Portland.
ORESTES, 18—Capt. H. J. Codrington, 18th Feb. at Alicante.
PORTLAND, 52 — In attendance on the King of Bavaria.
REVENGE, 78—Capt. W. Elliott, C.B., K.C.H., 10th Feb. at Malta.
RODNEY, 92—Capt. H. Parker, 26th Feb. at Barcelona.
SAPPHIRE, 28—Capt. R. F. Rowley, Dec. at Corfu.
THUNDERER, 84—Capt. W. F. Wise, C.B., 10th Feb. at Malta.
TRIBUNE, 24—Capt. J. Tomkinson, 10th Feb. at Corfu.
TYNE, 28—Capt. Viscount Ingestrie, 26th Feb. at Barcelona.
VERNON, 50—Capt. J. M'Kerlie, 10th Feb. at Malta.
VOLAGE, 28 — Captain P. Richards, 10th Feb. sailed for Constantinople.

CAPE AND AFRICAN STATION.

Rear-Admiral, P. Campbell, C.B.—*Flag-Ship*, THALIA, 46.

BRITOMART, 10—Lieut. W. H. Quin, 19th Dec. at Ascension.
BUZZARD, 10—Lieutenant Com. S. Mercer, June, Bight of Benin. Captured Semiramis, with 477 slaves.
CHARYBDIS, 3 — August, Bight of Benin. Captured Argo, with 428 slaves.
CURLEW—Lieut. Com. E. Norcott, Dec. off Sierra Leone.
FAIR ROSAMOND, *Schooner* — Lieut. Com. G. Rose, June in Bight of Benin.
FORESTER—Lieut. Com. G. G. Miall, 21st June off Prince's Island.
GRIFFON, 3—Lieutenant Com. J. E. Parlby, 24th Nov. at Sierra Leone.
LEVERET — Lieut. Com. C. Bosanquet, 3d Dec. at Sierra Leone.
LYNX, 10—Lieut. Com. H.V. Huntley, 12th Dec. left Ascension.
PELICAN — Commander B. Popham, 4th July arrived at Cape from Ascension.
PYLADES, 18—Com. W. L. Castle, 12th Nov. at Sierra Leone.
ROLLA, 10—Lieut. Com. T. H. H. Glasse, 24th Nov. at Ascension.
THALIA, 46—Captain R. Wauchope, 13th Dec. left Ascension for Gambia.
TRINCULO, 18 — Com. H. J. Puget, (act.) June in Bight of Benin.
WATERWITCH—Lieutenant Com. J. Adams (*b*), 16th Dec. sailed for coast of Africa.

EAST INDIA STATION.

Rear-Admiral, Hon. Sir T. B. Capel. *Flag-Ship*, WINCHESTER, 52.

ANDROMACHE, 28—Capt. H.D. Chads, 15th July arrived at Mauritius from Madras.
HYACINTH, 18—Com. F. P. Blackwood, 9th Oct. at Batavia.
RALEIGH, 16—Lieut. Com. M. Quin, 19th Aug. at Canton.
RATTLESNAKE, 28—Capt. W. Hobson, 2d Aug. left Bombay on a cruize.
ROSE, 18—Com. W. Barrow, 20th June arr. at Trincomalee.
SCOUT—Com. R. Craigie, 24th Feb. arrived at Plymouth. Sailed.
VICTOR, 18 — Com. R. Crozier, 22d Sept. left Calcutta for Penang.
WINCHESTER, 52—Captain E. Sparshott, R. M., 21st April sailed for Bombay.
WOLF, 18—Com. E. Stanley, 1st Nov. left Mauritius for Madras.
ZEBRA, 16—Com. R. M'Crea, 21st May left Madras for Colombo.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral The Right Hon. Sir G. Cockburn, G.C.B. *Flag-Ship*, PRESIDENT, 52.

BELVIDERA, 42—Capt. C. B. Strong, 21st Jan. at Jamaica, to proceed to Washington.
CHAMPION, 18—Com. R. Fair, 18th Jan. arrived at Jamaica from Havana.
COLUMBIA, St. V.—Master Com. J.

Henderson, 11th November at Barbados.

COMUS, 18—Com. W. P. Hamilton, 22d Jan. sailed from Jamaica for Carthagena.

CRUIZER, 18—Com. W. A. Willis, 28th Nov. at Bermuda.

DEE, St. V. 4—Com. W. Ramsay, 22d Oct. at Jamaica.

DROMEDARY—Bermuda.

FLAMER, St. V.—Lieut. Com. J. M. Potbury, running with mails between Jamaica and Barbados.

FORTE, 44—Captain W. O. Pell, 8th Nov. at Jamaica.

GANNET, 18—Com. J. B. Maxwell, 22d Jan. sailed for Bermuda.

HARPY, 10—Lieut. Com. Hon. G.R.A. Clements, 10th March left Plymouth for West Indies. Driven into Torbay.

LARNE, 18—Com. W. S. Smith, 9th Dec. left La Guayra for P. Cabello.

MAGNIFICENT, 4—Lieutenant Com. J. Paget, Port Royal.

MELVILLE, 74—Flag of Vice-Admiral Sir P. Halkett, G. C. H., Capt. P. J. Douglas, 19th March sailed for West Indies.

METEOR, St. V.—Lieut. Com. G. W. Smith, 4th Oct. arrived at Barbados.

NIMROD, 20 — Com. J. Fraser, 22d Jan. arrived at Bermuda.

PICKLE, 5—Lieut. Com. A. G. Bulman, 8th Dec. left Jamaica for Nassau.

PIKE, 12—Lieut. Com. A. Brooking, 26th Nov. arrived at Jamaica from Maracaybo.

PINCHER, 5—Tender to flag-ship, 20th Sept. left Jamaica for Nassau.

PRESIDENT, 52—Captain James Scott, 28th Nov. at Bermuda.

RACER, 16—Com. J. Hope, 19th Feb. arrived at Madeira; 20th sailed.

RACEHORSE, 18 — Com. Sir J. E. Home, 22d Jan. arrived at Bermuda from Grenada.

RAINBOW, 28—Capt. T. Bennet, 17th Nov. sailed from Jamaica for Bermuda.

SAVAGE, 10—Lieut. Com. R. Loney, 11th Nov. at Bermuda.

SCYLLA, 18—Com. E. J. Carpenter, 11th Jan. left Jamaica for Chagres.

SKIPJACK, 5—Lieutenant Com. S. H. Ussher, 13th Dec. arr. at Jamaica.

SNAKE—Com. R. L. Warren, 22d Jan. arr. at Bermuda from Port Royal.

VESTAL, 26—Captain W. Jones, 6th Feb. left Portsmouth for West Indies.

WASP, 18—Com. J. S. Foreman, 13th Dec. arrived at Vera Cruz; 31st Jan. sailed, having visited Tampico.

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hamond, K.C.B. *Flag-Ship*, DUBLIN, 50. 2d June.

ACTÆON, 28—Capt. Rt. Hon. Lord E. Russell, 21st Dec. at Bahia.

BASILISK—Lieut. Com. G. G. M'Donald, Oct. on coast of Peru.

BLONDE, 46—Captain T. Mason, C.B., Oct. at Callao from Valparaiso.

CLEOPATRA, 26—Capt. Hon. George Grey, 19th Dec. arr. at Madeira.

COCKATRICE, 6—Lieut. Com. W. L. Rees, running between Rio Janeiro and Buenos Ayres.

DUBLIN, 50—Capt. G. W. Willes, 31st Dec. at Rio Janeiro.

HARRIER—Com. W. H. H. Carew, 31st Dec. arrived at Rio; 17th Jan. sailed for Bahia.

HORNET, 6—Lieutenant Com. T. R. Coghlan, running between Monte Video and Rio Janeiro.

NORTH STAR, 28—Capt. O. V. Harcourt, Dec. off coast of Mexico.

RAPID, 10—Lieut. Com. F. Patten, Falkland Islands.

ROVER, 16—Com. C. Eden, 14th Oct. sailed for Pacific from Rio.

SATELLITE, 18—Com. R. Smart, 9th Feb. arr. at Portsmouth, 12th sailed for Plymouth; paid off 24th.

SPARROWHAWK, 18—Com. C. Pearson, Oct. coast of Peru.

TALBOT, 28—Captain F. W. Pennel, 1st Jan. sailed for Rio from river Plate.

WANDERER, 16—Com. T. Dilke, 31st Dec. at Rio. Arrived at Barbados.

TROOP SHIPS.

ATHOL, *Troop Ship*—Master Com. A. Harley, 9th Sept. arrived at Plymouth from Cork.

JUPITER, *Troop Ship*—Captain Hon. F. W. Grey, 14th Dec. arrived at Cape, with Lord Auckland and suite, for India.

STEAM VESSELS.

AFRICAN—Lieut. Com. J. West, Packet Station.
ALBAN—Blackwall, refitting.
BLAZER—Woolwich, ordinary.
COLUMBIA—See West Indies.
CARRON—Woolwich, refitting.
COMET—Mast. Com. J. Wright, coast of Ireland.
CONFIANCE, 2 — Lieut. Com. J. M. Waugh, mails between Malta and Corfu.
DEE, 4—See North American Station.
ECHO—City Canal, fitting.
FIREBRAND—City Canal, fitting new boilers.
FIREFLY—Woolwich. In dock.
FLAMER, 6—See West India Station.
HERMES—Woolwich, fitting.
LIGHTNING—Woolwich, ready for sea.
MEDEA, 6—See Mediterranean Station.
MESSENGER, 1—Woolwich, ready for sea.
METEOR—See West India Station.
PHŒNIX—See Lisbon Station.
PLUTO—Woolwich dock.
RHADAMANTHUS—Woolwich basin.
SALAMANDER—Woolwich basin.
SPITFIRE, 6—Woolwich basin.
TARTARUS—
EXPRESS—Lieut. W. P. Croke, Sheerness.
SWIFT—Woolwich basin.

SURVEYING VESSELS AT HOME AND ABROAD.

ÆTNA, 6—18th Dec. sailed for the survey of the Gold Coast.
BEACON—Archipelago. Ordered home.
BEAGLE, 10—Coasts of Patagonia and Chili. On her way home.
FAIRY, 10—Woolwich.
GULNARE, Hired Schooner—Gulf of St. Lawrence.
LARK—19th Dec. arrived at Madeira.
MASTIFF, 6—2d Feb. arrived at Spithead; 12th sailed for Chatham; 20th paid off.
RAVEN—18th Dec. sailed with Ætna.
SULPHUR—22d Dec. sailed for Pacific.
THUNDER—28th Nov. at Bermuda.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; Assistants, Lieuts. J. Harding, G. A. Frazer.—Coast of Ireland.
Lieutenants, M. A. Slater; H. C. Otter —East Coast of Scotland.
Lieutenants, W. L. Sheringham; A. Kortright.—Cardigan Bay.
Lieutenant C. G. Robinson.—North Coast of Wales.
Lieutenants, J. Wolfe; R. B. Beechey. —Lakes of Ireland.

COMMISSIONED.

ASIA, 84—Sheerness.
CORNWALLIS, 74—Plymouth.
HERCULES, 74—Chatham.
MINDEN, 74—Plymouth.
PEMBROKE, 74—Portsmouth.
TALAVERA, 74—Plymouth.
VANGUARD, 80—Portsmouth.

PAID OFF.

SERPENT—Sheerness.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

CAPTAINS—Hon. H. Keppel.
COMMANDERS—T. O. Knox.
LIEUTENANTS—H. Loring; J. Gordon; W. M'Murdo; S. Y. Brown.

APPOINTMENTS.

ACTÆON, 26—*Master*, J. Biddicombe.
ASIA, 84—*Capt.* W. Fisher; *Lieuts.* B. M. Atherstone, C. Lincock, H. Pakenham, R. S. Robinson, F. P. Egerton; *Purser*, J. Speed; *Sec. Master*, J. R. Nicholson.
BRITANNIA, 120—*Mid.* R. L. Curtis.
CANOPUS, 84—*Lieut.* H. Jelliroe.
CARRON, St. V.—*Lieut. Com.* W. Dow.
CALEDONIA, 120 — *Lieut.* E. Codd; *Mid.* C. G. Fegen.
CLIO, 16—.... W. Gunn, M.D.
COAST GUARD — *Lieuts.* P. Inskip; J. S. Keatley.
CORNWALLIS, 74—*Capt* G. W. R. Festing; *Lieuts.* T. Hardy, J. H. Ward, H.

Lyster, J. S. Elmar; *Surgeon*, J. H. Acheson; *Purser*, J. Fletcher; *Sec. Mast.* G. B. Harvey.

CURLEW, 10—*Sec. Mast.* J. Howell.

DUBLIN, 50—*Mast.* H. Thompson.

EXCELLENT, —*Lieut.* W. F. Blair; *Mate*, F. G. Leigh.

GREENWICH HOSPITAL — *Lieut.* E. de Montmorency.

HERCULES, 74—*Capt.* M.F.F.Berkely.

HOWE, 120—*Lieut.* G. S. Airey.

MELVILLE, 74—*Flag Lieut.* J. Hackett; *Assist. Surg.* H. G. R. Page; *Mates*, M. de Bourcy, J. Fellowes; *Mids.* A. Cumming, G. Kingley, J. Moore.

MINDEN, 74—*Capt.* A.R. Sharpe, C.B.; *Lieuts.* E. Herrick, T. Mitchell (*b*), J.W. Wakefield, W. K. Stephens; *Master*, W. Aykbone; *Sec. Mast.* E. Moore; *Purser*, T. Ullock; *Assist. Surg.* E. Pilmore.

PANDORA, 4—*Assist. Surg.* R. Hayward.

PEMBROKE, 74 — *Capt.* Sir Thomas Fellowes.

PERSEUS — *Lieut. Com.* R. Evans; *Purser*, R. Wilson.

PICKLE, 5—*Sec. Mast.* J. Killock.

RALEIGH, 16—*Mate*, R. B. Barwell.

RATTLESNAKE, 28—*Mate*, L. F. Prevost.

REVENGE, 78—*Clerk*, W. Elliott.

SCOUT, 18—*Mast. Assist.* G. Horwood; *Mates*, A. C. Gladstone, J. Astle.

SWIFT—*Lieut.* G. Welch; *Mast.* (*act.*) J. Randall; *Assist. Surg.* J. Woodrich.

TALAVERA, 74—*Capt.* T. B. Sullivan, C.B; *Lieuts.* G. Hales, W. H. Hall, F. Hennah, A. Gordon; *Mast.* J. Pearse; *Sec. Master*, T. Goss; *Purser*, J. Cumming.

VANGUARD, 80—*Capt.* Hon. P. Bouverie; *Com.* T. M. Currie; *Lieuts.* C.M. Wright, T. E. Hodder, J, Hathorn, W. G. B. Estcourt, W. Edmonstone, G. G. Lock; *Mast.* W. Miller; *Sec. Mast.* H. S. Hele; *Purser*, J. Hatton; *Surg.* R. Dobie; *Assist. Surg.* R. T. Scott; *Capt. Marines*, R. Mercer; *Lieut. Mar.* W. H. Sturgeon, R. Shewen, A. D. L. Farraut.

WILLIAM AND MARY, *Yacht*—*Lieut.* J. Shambler; *Sec. Mast.* J. H. Ashton.

PILOTAGE COMMITTEE.—The report of the commissioners appointed to inquire into the laws and regulations relating to pilotage, has just been presented to both Houses of Parliament, by command of his Majesty. As may be supposed, it is full of important information, and will, no doubt, form the basis of some new regulations on this subject. We find it recommended to place all the local jurisdictions respecting pilots, under the control of the Trinity House of London, or Deptford-Strond as it is termed, with the right of appeal to the privy council—that the present rates of pilotage, differing in all parts of the kingdom, should be done away, and a general one substituted instead of them. In alluding to the high rates of pilotage, in which, by the way, the pilots of this Trinity House stand foremost, we find one of the reasons for maintaining them by the Cinque Port pilots is—the expense to which they are subjected in making periodical surveys of the coasts of France and Holland. The result of these surveys is neither sent to the Admiralty nor the Trinity House, and they are solely undertaken for the purpose of giving practical experience to the pilots. No doubt, they must necessarily be superficially executed and the Navy being interested in their efficient performance, if the Admiralty should deem their continuance desirable, the committee has recommended that this duty should be transferred to that department.

The number of pilots at each place is to be fixed by law, and to depend on the trade of that place.

Vessels towed by steam are to be entitled to reduce their pilotage one-third; and vessels outward bound, driven back by stress of weather, should never be subject to more than one-half of the full rates of pilotage, and mostly to a proportion less.

It is recommended that a higher rate of pilotage be paid in the six winter months, than in those of summer; the reason is obvious, and very fair.

Pilotage to be charged according to the draught of water of the vessel.

[We are obliged to reserve our further extracts to another number.—ED.]

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

(continued from page 190.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS
81	Alexander	Of Maryprt.	Quebec	Alnwick	At Sea	Nov.	Abandoned.
82	Alfred	———	Sunderland	———	R. Tees	17 Feb.	
83	Ann	———	Cardiff	Liverpool	Off Bardsey I.	19 Jan.	Crew saved.
84	Ann Cobbs	Of Montros.	———	———	Sunderland	3 Feb.	
85	Ann & Elizabeth	———	———	———	Youghall	26 Nov.	
86	Atlantic	Wrecked at	Algoa Bay	previous to	19 h Oct.		
87	Barrowgate	———	Shields	London	Swin Ch.	5 Feb.	Crew saved.
88	Ben Nicholson	———	Liverpool	Ballyshan.	Ballyshann'n	10 Dec.	
89	Britannia	———	Miramichi	Liverpool	At Sea	Nov.	Abandoned.
90	Brothers	———	London	St Peterabg.	Revel	5 Dec.	Crew saved.
91	Brunette	———	Cardiff	Liverpool	Wexford	24 Nov.	1 saved.
92	Cadmus	Foot	Quebec	Not heard	of since	8 Nov.	
93	Cape Breton	Wrecked at	Algoa Bay	previous to	19th Oct.		
94	Catherine	———	Campbleto.	P. Ellen	Ilay	27 Jan.	All lost.
95	Cavalier	———	Hull	———	At Sea	———	Abandoned.
96	Charlotte	———	Bristol	New York	At Sea	Nov.	Abandoned.
97	Charl. & Elisabeth	Hamlya	London	Shields	Longsand	18 Feb.	Crew saved.
98	Clara	Tripp	Quebec	Bristol	Abandoned	22 Dec.	Crew saved.
99	Clio	Reed	Montrose	Para	Salinas	Oct.	Crew murdered
100	Comet	Williams	Barnstaple	———	At Sea	———	Crew saved.
101	Corsair	Venables	Whaler of	London	King's Mill	Group,	Pacific Ocean.
102	Cumberlan l	Nicholls	Quebec	Liverpool	St. Lawrence	12 Nov.	Crew saved.
103	Dale	Of Maryprt.	All perished	———	At Sea	Dec.	
104	Defiance	Kirk	St Domingo	Liverpool	Hebrides	3 Feb	Crew saved.
105	Diana	Downing	Smyrna	Liverpool	C. Bon	15 Dec.	3 drowned.
106	Dispatch	Cumming	Liverpool	———	Urr	4 Feb.	Crew lost.
107	Duckenfield	Wreck seen	at Sea by the	Constitutn.	6 of crew	saved	in dying state.
108	Eclipse	———	Londonder.	Newcastle	I. Flotta	27 Jan.	
109	Edgar	Gibson	Quebec	Liverpool	At Sea	30 Nov.	Abandoned.
110	Ellen	Williamson	London	Plymouth	Deal	20 Feb.	Crew saved.
111	Fame	Nelson	Newport	Newcastle	Off Scilly	4 Feb.	Crew saved.
112	Flower of Edinbrg	Crew saved	by Pluto	Abandoned	At Sea		
113	Four Schooners	Of New-	foundland,	St. John's,	Crews, about	70 men,	all lost.
114	Hawk	Young	Porthead	———	I. Ronaldsha.	28 Feb.	Crew saved.
115	Hawk Packet	Scotland	Seaham	London	At Sea	Feb.	Crew saved.
116	Hearts of Oak	Stone	Newfdland	Poole	Not heard of	since	8th Dec.
117	Herald	Fewster	Seaham	Portsmouth	Goodwin S.	20 Feb.	
118	Hope	———	N. Shields	———	Lowestoffe	19 Feb.	Crew saved.
119	Hopewell	Of Maryprt.	———	———	At Sea	Dec.	
120	Intrinsic	———	Liverpool	———	Malbay	30 Jan.	All lost.
121	Jabez	Eye	Pr. Edwd. I	Bideford	C. Breton	———	2 drowned.
122	Jane	Randall	London	Limerick	At Sea	23 Dec.	Abandoned.
123	Jane	Daffers	———	———	Picton I.	26 Dec.	
124	Jane	Kay	Of Stockton	———	Barnard Snd.	6 Feb.	All lost.
125	Janet and Agnes	Clark	London	Alloa	Scarboro'	16 Feb.	Crew saved.
126	James Edward	Lovering	Newcastle	Plymouth	Run foul of	13 Feb.	Crew saved.
127	Jason	Of Sunder-	land, timber	laden,	Abandoned	Dec.	
128	Jean	M'Nair	Liverpool	Newport	Off Skerries	21 Jan.	Crew saved.
129	Jessie	Walker	Newfdland	Poole	Not heard of	since	19th Nov.
130	John Parker	———	London	Shields	Hartlepool	17 Feb.	
131	Johns	Of Port Gor-	don	Scarboro'	Cayton B.	18 Feb.	Crew lost.
132	Juno	———	———	———	Sunk Sand	8 Dec.	Crew drowned.
133	Laurel	———	Carnarvon	Newcastle	Holy I.	20 Dec.	Crew saved.
134	Little Mary	———	———	St John. N B	Partridge I.	16 Dec.	
135	Liverpool	Of Maryprt.	———	———	Port Rush	17 Feb.	Crew lost.
136	Majestic	Left Quebec	6th Nov.	Not since	heard of,	seen	abandond. 6 Feb
137	Marietta	Evans	Cardigan	Cork	Galway	11 Feb.	
138	Mars	Of Maryprt.	———	———	At Sea	Dec.	
139	Marshall M'Donld	———	Quebec	London	At Sea	22 Nov.	Aband. cw. lost
140	Martha	———	Cardiff	Alexandria	At Sea	24 Feb.	By fire.
141	Milo	———	Sunderland	———	Newfndland.	———	Crew saved.
142	Minerva	M'Kenzie	Liverpool	Charleston	North Bank	23 Jan.	Crew saved.
143	Mix	———	Gaspé	London	At Sea	1 Dec.	Abandoned.
144	Nancy	Clark	Sunderland	London	Pye Sand	18 Feb.	Crew saved.
145	North Star	———	Portland	———	At Sea	Fndrd.	Crew saved.
146	Orion	———	London	Sunderland	At Sea	15 Jan.	Crew saved.
147	Packett	Huggett	———	Madeira	At Sea	———	Abandoned.
148	Pride	Bennet	Mirimichi	Hull	At Sea	Dec.	12 lost.
149	Priscilla	Of Newcstl.	———	———	Yarmouth	20 Feb.	Crew lost.
150	Qu. of Netherlands	———	London	Rotterdam	Helvoet	6 Feb.	All saved.
151	Relict	Of Maryprt.	———	———	At Sea	Dec.	
152	Ruby	Croft	Sunderland	Sthpton.	Dungeness	2 Feb.	Crew saved.
153	Sarah	Richardson	Newcastle	London	Swin Ch.	5 Feb.	Crew saved.
154	Sarah-Ann	Mackie	Jamaica	St John. N B	Nova Scotia	3 Dec.	Crew saved.
155	Sincerity	———	Hull	———	Herd Sand	18 Feb.	Crew lost.
156	Sir G. Murray	———	Liverpool	Richbucto	I. Madame	31 Oct.	Crew saved.
157	Speedwell	Young	Shields	———	Barnard Snd.	5 Feb.	1 saved.
158	Susannah	Ward	Goole	———	Off Wainfleet	2 Feb.	Crew saved.
159	Urania	Wrecked at	Algoa Bay	previous to	19th Oct.		
160	Urania	———	Quebec	Halifax	C. Breton		
161	Wallace	Robertson	Leith	Hobart T.	D'Eutrectx C	10 Sept.	Crew saved.
162	William	Folk	Chepstow	Clyde	P. Ayr	16 Feb.	Crew saved.

Births.

At Torpoint, the lady of Capt. Shannon, R.N., of a daughter.

On the 4th of March, at the Elms, Worcestershire, the lady of Rear-Admiral Maling, of a son.

On the 18th Feb., at Kingston, the lady of Lieut. White, R.N., of a son.

Near Exeter, the lady of Lieut. Palmer, R.N., of a son.

At St. Michael's-terrace, the lady of Lieut. C. M'Kenzie, R.N., of a daughter.

The wife of Lieut. Shewen, R.N., of a daughter.

Marriages.

At Falmouth, Mr. Robert Williams, Mate of his Majesty's ship Skylark, to Miss Mary-Jago Eddy.

At St. Andrew's church, by the Rev. R. Luney, G. Page, Esq. R.N., to Fanny, youngest daughter of the late Francis Tweddell, Esq., of Threepwood, in the county of Northumberland.

At Colwick, R. Hammond, Esq., R.N., to Sophia, daughter of J. Musters, Esq., Colwick Hall, near Nottingham, and of Byron's "Mary" Chaworth.

On the 23d Feb., at Kingston, Lieut. J. Inglis, R.N., to Sarah, fifth daughter of Mr. W. Seagrove, Woollen-Draper, Hard, Portsea.

Deaths.

In Paris, 12th March, Rear-Admiral Richard Graves, on the Retired List.

On the 2d March, in London, Commander W. Heppell, on the Retired List.

On the 25th of February, 1836, on board his Majesty's ship Malabar, in Cadiz Bay, Capt. H. Loveday Vine, of the Royal Marines. The remains of this highly respectable officer, and amiable man, were interred by special permission, on the Glacis of Fort Portalis, with all military honours; the Captains of the squadron, and every officer that the service could spare, attending the funeral. Captain Vine's health had been gradually giving way, from the effects of long service in various climates, but he resisted the advice of his friends to return home, from motives which did him honour, and only yielded at last, that (to use his own expression) "he might lay his bones in English ground." It was too late; they rest on a foreign shore, but his memory will be long cherished by his messmates and brother officers: the only consolation of a widowed wife, and the sole inheritance of four sons and daughters.

Lately, Lieut. Samuel-Hood Sullivan, R.N. (1806), aged 49.

At Greenwich Hospital, Lieut. I. Meres, R.N., in his 70th year.

In January last, at Clarendon, Jamaica, Lieut. R. J. Langrishe, R.N. (1825), Stipendiary Magistrate at that island.

At West Lulworth, Dorset, Captain Benjamin Crispin, R.N. (1813), aged 57.

On the 27th Feb., of apoplexy, at Torquay, Alexander Denmark, Esq., Physician of the Navy, highly esteemed in the service for his talents, and regretted by a large circle of friends for his kindness of disposition.

Captain Thomas Cowan, Royal Navy, (1802.)

Recently, Commander Gamaliel Fitzmaurice, (1812.)

Lately, Mr. William Pattison, Surgeon, R.N. (1790.)

On the 13th March, at Reading, Lieut. William-Innes Pocock, R.N. (1811), in his 53d year.

GREAT WESTERN STEAM-SHIP COMPANY.—We learn from a late number of the *Bristol Mercury*, that a company with the above title has just been established at Bristol. The first general meeting of the subscribers, to receive the report of the provisional committee, took place at the Commercial Rooms in that city on Thursday; when a series of resolutions were passed for the intended object. The capital is £250,000, divided into 2500 shares of £100 each. It is stated to be the intention of the Company to build two vessels of 1200 tons each, with engines of 300 horse power, to supply the line between Bristol and New York, with as little delay as possible.

The celebrated BRASS CANNON taken from one of the batteries of the Dardanelles, by Sir Thomas Duckworth, in 1807, and which formerly stood in front of the residence of the Lieutenant-Governor, Mount Wise, has been fixed on a new cast-iron carriage, and placed within a *cheveaux de frize*, at the eastern end of the parade. The carriage is 12 by 2ft. 8in., and cast expressly for this piece of ordnance, by Messrs. Walker, of the Gospel Oak Works, Birmingham. On the breast of the carriage is inscribed, on a mitred medallion, "Algiers, 1816, Pellew," and underneath, "This gun was brought from the Dardanelles, by Duckworth, 1807." On each side are also four pannels, two of which are inscribed "William the Fourth," and the other four bear inscriptions commemorative of the great naval victories,—"Camperdown, 1797, Duncan;" "Trafalgar, 1805, Nelson;" "Copenhagen, 1801, Nelson;" "St. Vincent, 1797, Jervis;" "Nile, 1798, Nelson;" "First of June, 1797, Howe."—*Devonport Herald.*

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

FEBRUARY, 1836.

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	M.	29·30	29·28	40	43	32	44	S.W.	S.W.	5	6	Bcq.	Bcq.
2	Tu.	28·92	28·70	36	38	33	40	S.E.	E	4	3	Ogr (2)	Ogr (3)
3	W.	28·90	29·10	34	38	33	39	N.E.	N.E.	7	7	Ogr (1)	Og (3) (4
4	Th.	29 76	29·88	36	36	34	38	N.E.	N.E.	7	6	Ogr 1) (2)	Ogr (3) (4)
5	F.	30·17	30·15	37	37	35	37	N.E.	N.	6	6	Od (2)	O.
6	S.	30·00	29·98	37	45	32	48	S.W.	W.	2	2	O.	Bcm.
7	Su.	29·76	29·83	42	47	35	48	S.W.	N.W.	4	4	Od (2)	Od (3
8	M.	30·04	29·97	37	43	35	47	S.W.	S.W.	4	5	Bcm.	Oqd (4)
9	Tu.	29 92	29·94	47	50	45	51	S.W.	S.W.	5	5	Od (2	Bc.
10	W.	29·90	29·76	46	50	45	50	S.W.	S.W.	5	6	Opd 2)	Oqr (4
11	Th.	30·05	30·20	37	39	35	40	N.W.	N.W.	5	6	Bcph (2	Bcq.
12	F.	30·10	30·06	38	46	30	47	N.W.	W.	6	6	Bcq.	Bcq.
13	S.	30·38	30·39	30	41	28	42	N.W.	S.W.	5	3	B.	B.
14	Su.	30·42	30·44	43	48	40	48	W.	N.W.	3	3	Bc.	Bc.
15	M.	30·50	30·50	36	49	30	50	S.W.	S.W.	2	2	B.	B.
16	Tu.	30·36	30·18	39	46	31	47	S.W.	S.W.	3	4	O.	Od 4)
17	W.	29·87	29·80	32	36	30	38	N.W.	N.W.	10	11	Qbcps 2)	Qopsr(3)(4)
18	Th.	30·03	30·13	35	37	31	39	N.	N.	10	10	Qbc.	Qbc.
19	F.	30·27	30·26	32	36	30	37	N.	N.	5	4	Bc.	O.
20	S.	30·36	30·42	28	34	25	34	N.	N.	3	3	B.	B.
21	Su.	30·35	30·28	24	36	22	38	S.W.	S.W.	2	2	Bm.	Bcm.
22	M.	29·96	29·88	38	45	32	46	S.W.	S.W.	3	3	O.	Op 3)
23	Tu.	29·64	29·60	36	45	30	46	S.	S.	2	2	O.	O.
24	W.	29·36	29·26	35	44	29	47	S.	S.	5	5	O.	Or (4
25	Th.	29·05	29·03	32	40	31	42	S.W.	S.W.	3	4	Bc.	Bc.
26	F.	28·95	28·92	33	36	27	37	E.	N.E.	3	5	Osr (2)	Or (3) (4)
27	S.	28·89	28·97	34	36	33	38	N.W.	S.W.	2	2	Od (2)	Od (3)
28	Su.	29·28	29·28	33	37	32	38	N.	N.W.	2	2	O.	Bcm.
29	M.	29·44	29·50	35	38	31	39	N.W.	W.	1	1	Og.	Og.

FEBRUARY—Mean height of Barometer=29·787 inches; Mean Temperature=37·4 degrees; Depth of Rain fallen=1·65 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

Fig. 1.

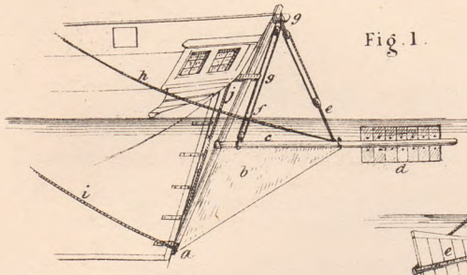
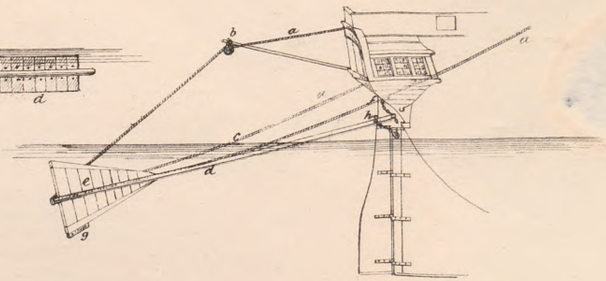


Fig. 2.



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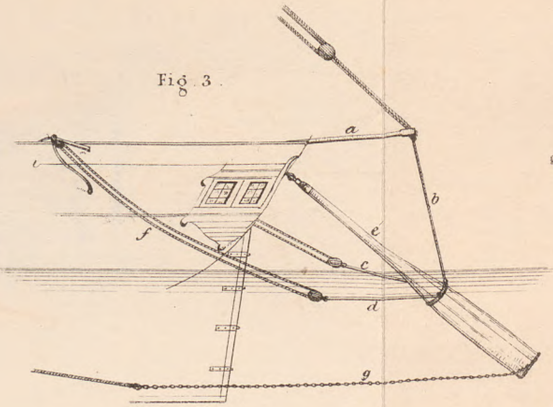

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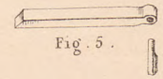

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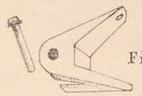

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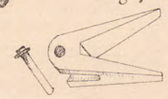

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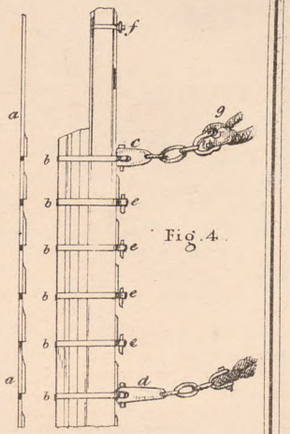


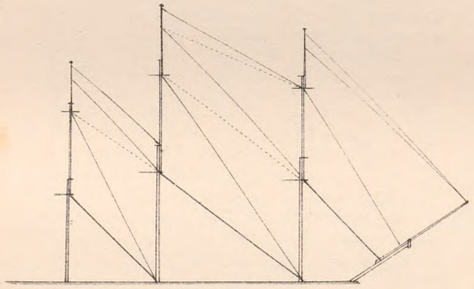
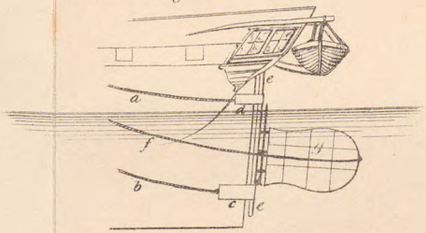


Fig. 14.

Fig. 8.



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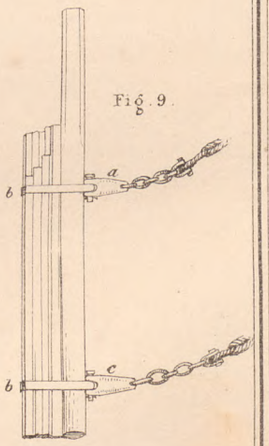

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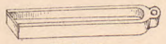

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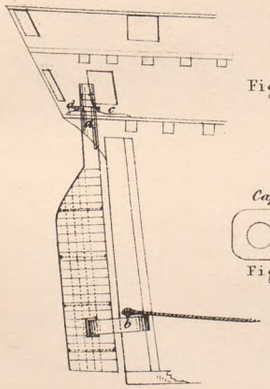


Cap (b)

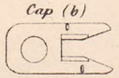
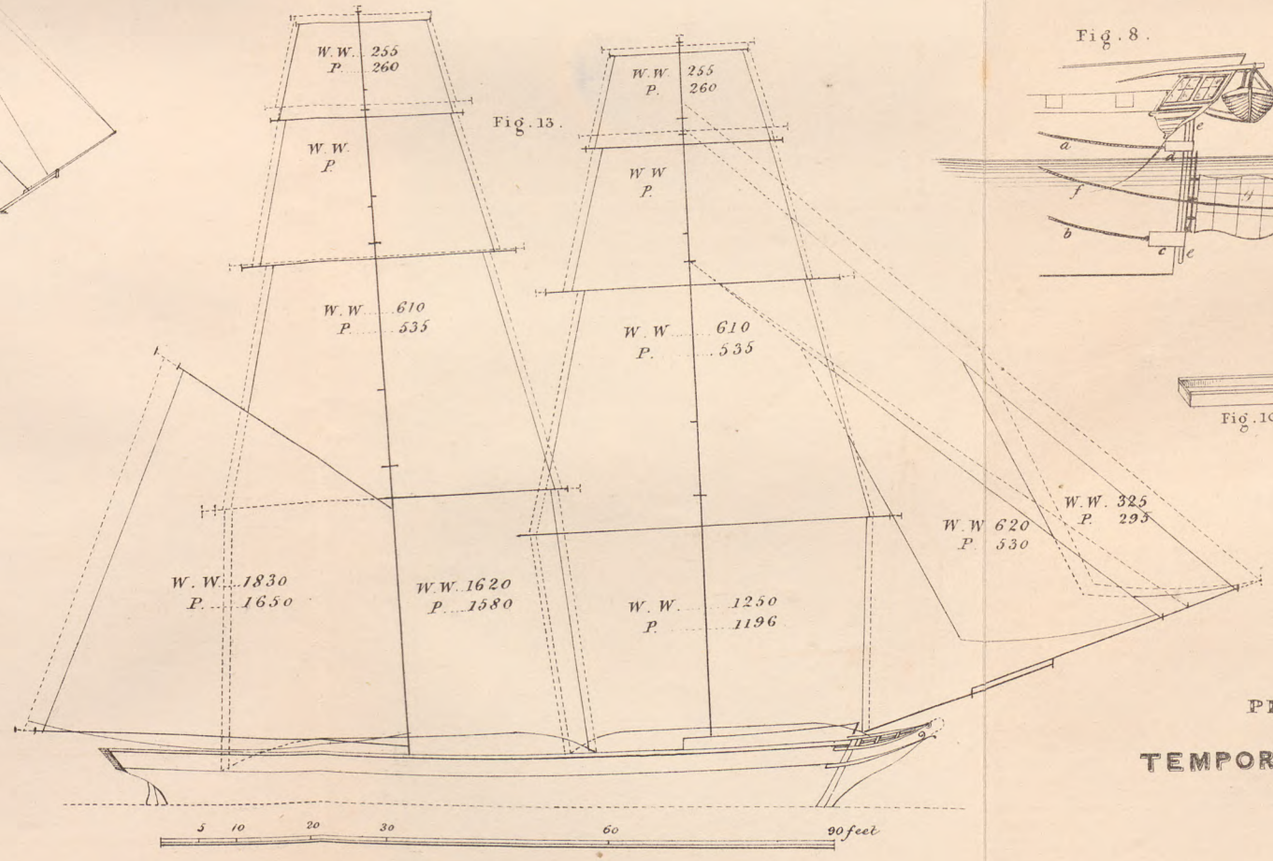


Fig. 12.

Fig. 13.



PLANS FOR

TEMPORARY RUDDERS.

&c.

Published for the Proprietors of the Nautical Magazine by Simpkin & Marshall. 1836.

ORIGINAL PAPERS.

May, 1836.

On the Expediency of substituting Locomotive Powers, in lieu of Steam, to work the Paddle-Wheels of Vessels.

"While rapid coursers prance along the plain,
Urg'd by the lash, and govern'd by the rein,
Sailors in ships delight to run a race,
Crowding all sail the flying foe to chace.
Courses are frigate's *coursers*,—and, when these
With flowing sheets receive the fav'ring breeze,
Then, as she scuds, the vessel in her speed
May proudly cope with the most agile steed.
But, when the adverse gale, with ruthless force,
Drives her six points to leeward of her course,
The prow no more obeys the helmsman's will;
Vain is his labour, useless then his skill.
But, to the succour of mechanic art,
To keels, ere long, new impulse shall impart:
When sails work paddle-wheels! our ships no more
Shall beat in vain to claw off the leeward shore;
Wind-bound, in port, no more shall seamen lie,
Watching each cloud that flits along the sky;
But, the ship freighted, weighing then with glee,
Hoist their last boat in, and stand out to sea;
Brave adverse currents; stem the strong spring-tide;
And *in the wind's eye* onward safely glide." *A Day at Sea.*

Sir,—If those, not seamen by profession, a considerable portion of whose lives have been passed in making long sea-voyages, feel deeply interested still in maritime affairs, how much more anxiously solicitous concerning such important matters are old sailors in retirement? These keep a *good look-out ahead* on all occurrences now passing in the naval world; nor need it be observed, with how sincere a welcome they receive a magazine so much in unison with sailors' wants and wishes as the Nautical has *proved itself*. Assuredly it is a matter of just exultation, to consider at how small a cost so precious an advantage is secured, and that, if the encouragement a work of this kind merits and demands can be accorded, a proper vehicle will ever now exist for promulgating every species of information that can benefit, not seamen merely, but the scientific world at large. How vast an advantage over their predecessors will result to future generations, by the establishment of philosophic periodicals, which invite attention to

all novel theories, curious phenomena, and grand experiments? Who can estimate the advantages to be derived from the recorded experience of sailors? Was it not owing to a careful examination of ships' journals, that the improved system of Asiatic navigation was suggested, and which, by running down east longitude in high south latitude, has so shortened the duration of a voyage once so unnecessarily long and tedious? The spirit of observation is now assuredly abroad, while the number of observers is increased a hundred-fold, for the ratio of intelligent persons must be calculated not so much upon our vast increase of population, as the surprising number of individuals who now receive instruction, so that those who now have thinking heads and useful hands constitute such a force that they must prove powerful instruments for forwarding the progress of the world in useful knowledge.

It is a matter of no small curiosity, to remark the peculiar impulse given now to men of intellect and ingenuity. Shakspeare's delightful notion of "annihilating time and space," once the desideratum merely of romantic lovers, seems to be that now of the least loveable and loving members of creation—those who love money above all things! Though we at present cannot boast a Swift, this may at all events be styled the age of *swiftness!* for, sir, not only mechanicians but philosophers are all driving at one object, with a most phaeton-like fury, as if resolved to drive on chariot-wheels with speed *ad libitum*; for this a few years back they would have incurred the risk of being ridiculed *ad infinitum*, and have been *booked* as passengers to travel with Astolfo to the moon's own lunatic asylum. If projectors formerly were subject to the penalty of being deemed insane, there is a premium now for being visionary. Whence comes this change? Why, it arises from this circumstance, that schemers now are backed by the most influential people in the kingdom—those worshippers of mammon, men of capital; those restless, greedy beings, who, "seized" already of enormous wealth, seize every opportunity within their reach to multiply their riches. To them inaction is intolerable; the memorable words of Marie Antoinette should be their motto, since "Il faut agir" is their constant watchword.

Yet, let us not just now disparage their cupidity, as it proves incidentally so useful in promoting ingenuity. No, let us rather feel proud of our purse-proud men, and encourage them as much as possible to use the means of wealth to aid the needy artisan and poor philosopher. Such is the enthusiasm of modern speculators in the fashionable scheme of rapid motion, and so steadfast their belief in the possibility of having all their theories reduced to practice, that they consider all objections to their wild career as emanating from the very prudery of prudence, and shut their eyes to all the disadvantages that may accrue from travelling with such

immense celerity.* Worthy disciples of the cold-blooded political economists, they are satisfied with saying "*evils will cure themselves*," and therefore in their calculations scarcely think they merit to be dwelt upon. Some persons, however, whose habit it is to dwell upon every thing worthy of philosophical reflection, contemplate with horror how much the risk to human life must be increased, by urging carriages along with such inordinate velocity. Not that they conceive the possibility of diminishing the number of our working horses as unimportant, because they know the acquisition of vast tracts of tillage-ground is now "a consummation most devoutly to be wished for;" nor do they seek to throw a damper upon rail-road speculations; they merely wish to *put out steam itself!* believing firmly, and expecting fully, that some safer locomotive agent may be substituted for this death-dispensing vapour.

Meantime, it is a consolation to think that the shipping interest is not allowed to be hull-down astern. Our naval architects, our engineers, and men of genius, all view improvement as a cynosure, and steer a steady course end on for it. Should not such worthies imitate the conduct of our artisans? These, when they have some novel work to execute, pass in review all the mechanical resources in their power; nor do they think of having new tools made, if those already on the work-bench may suffice effectively to execute the job they take in hand. I have been long of opinion, that potent and various as we find mechanical contrivances on shipboard, that such might be made greatly more available by additional purchases, and a complication of machinery that may effect operations not yet thought of, and which slow-going men would scarce think credible. How many cases occur, in which seamen find resources in presence of mind, and the adoption of ingenious expedients? Witness the Packenham rudder, and the singularly happy mode to work a pump, adopted some years back by the master of a merchantman, to whose cleverness I pay due homage, though I very much regret not knowing his name, because I think he merits a thousand times more praise than ever was unworthily expended upon those whose wits are merely set to work to fabricate new engines of destruction. His vessel having sprung a-leak at sea, the crew, to keep her free, were reduced to the necessity of working so long at the pumps, that they became exhausted with fatigue: in these critical circumstances the master devised a truly novel plan to work the pump, which answered as a substitute for manual exertion. Causing a rope to be attached to the pump-handle, long enough to be carried out to the mizen-peak, to the

* A lecturer has propounded his belief, that he knows "no impediment to our going at the rate of one hundred miles an hour." How convenient for dropping mail-bags on the road! What highwayman will stop a coach of this kind? Turpin, if now alive, would turn his own hangman, out of sheer despair. Ed.

depending part, or end of the fall, he ordered a butt of water to be slung, which, rising and sinking alternately as the vessel pitched, the jerking motion thus supplied, sufficed to keep the piston working, so that the danger of the vessel's sinking was averted. This circumstance, I apprehend, furnishes a hint by which an engineer might profit, so as to make the motion of a vessel operate upon machinery calculated to accelerate her progress.

It is now a considerable time since my attention was forcibly arrested by the adaptation of steam-engines to the purposes of navigation, yet, while vessels thus impelled were adopted pretty generally upon rivers, it seemed surprising that they were not likewise used upon canals. On mentioning this matter to an intelligent person, he pointed out the reason why they were not eligible for that service, which was, that the violent undulation produced by the paddle-wheels sent waves so much above the margin of the canals, that, in the reflux of the water, the earth gave way; proving thus a source of constant injury, necessitating such frequent repairs to the embankments, that it would countervail the advantage otherwise to be obtained by substituting steam-vessels for tow-boats, especially as the expense of using stone facings along the banks for such an extent, would require an outlay vastly disproportioned to the profits. It appeared then an object of considerable importance to provide, if possible, a remedy for this defect, the more especially, as the idea was supported by the expediency of dispensing with horse-labour, the expense of fuel, and the peril frequently resulting from the use of steam.

When reflecting on this subject, it occurred to me, that to attain the power of propelling canal-boats, even at the rate of five or six knots an hour, would be a vast point gained, and, that it might be effected by adopting here a mode of locomotion long since used with most complete success in China, where sculling is performed in a peculiar manner. Having remarked the inefficiency of impelling boats by one central oar, which is attended with waste of labour, loss of time, and vacillating motion, they ingeniously placed one on each quarter, working from right to left, and left to right, which double action makes a craft advance in a straight line. It seems to me, however, that by the intervention of appropriate machinery, the rowers might be spared much muscular exertion; for, sculling large boats up to Canton, when deep laden, is decidedly hard work, though less than that endured by English lightermen. Believing that an improvement upon the Chinese sculling system therefore might be as available upon our rivers and canals, as they have found it on their own, I stated this opinion to the celebrated Mr. Perkins. After listening with eager attention, answering simply, "Come along with me," he took me up stairs to a room, in the centre of which there was a reservoir, filled with water, where I saw floating a small barge, provided with an apparatus

which, when made to act, sufficed to make it traverse the water at a steady and comparatively rapid rate. Conceiving this to be a method of his own, to obtain some novel locomotive agent, I could not of course presume to ask for any explanation of the *modus operandi*, but went away, persuaded that that ingenious gentleman had luckily found out some substitute for steam, which ultimately would be made known to the public, under the protection of a patent, if, upon ample trial, it should realize his wishes. Soon after the period alluded to, I went abroad, and since then have neither seen, or had any communication with Mr. Perkins respecting this model, nor have heard if ever he completed his design, or gave it up from finding it impracticable.

I have recently, however, been induced to resume my own lucubrations on locomotive expedients, owing to the many and appalling accidents resulting from the use of steam-engines. But, even could the risk be lessened in these cases, still, in a point of view of serious importance to the interests of navigation, we are called upon to substitute, if possible, a novel mode of locomotion; the expense of fuel being such a drawback on the advantage of steam-engines. In the performance of a voyage from Brighton to Dieppe, a run of little more than thirty leagues, six chaldrons and a half of coals are consumed, in the average period of eleven hours. In one from Bordeaux to Dublin, (which took us three days and four nights,) the quantity of coals used would have sufficed as a cargo for a small vessel.

Now, the necessity of finding stowage for enormous quantities of fuel, restricts the owners to mere coasting voyages, while a vast portion of their profits pass up funnels in the shape of smoke. Such being the case, until we can vastly reduce the needful quantity of fuel, or find a substitute for steam, the paddle-wheel must be declared inadequate to transport us to our colonies, where some have no great wish to be transported.

With respect to a new locomotive agent being soon discovered, many are most sanguine. I have long thought something may be done to obtain impulsion by a reciprocal condensation and rarefaction of the atmospheric air, and have heard that an ingenious American philosopher holds this opinion, in fact, that he has long since been engaged in various experiments to that effect: should he succeed in perfecting this great design, his benefaction to the arts and sciences will prove of incalculable value. While thus he is at work, having to cheer him on the best wishes of all who wish well to their fellow-creatures, let us endeavour, also, until his *superlative* contrivance comes in play, to work with our heads, so as in the mean time to suggest something *comparatively* good and useful, if the thing be practicable. We hear of steam-engines working in a ratio of as many horse-powers as would form a troop of cavalry! How gloriously these drag vessels on, almost as long

and lovely as a frigate! Have we no horse to work for us, save vapour, with its foaming mane and flowing tail? Yes, we have the ships' courses, no bad coursers when driven onward by auspicious gales, and these would amply suffice to furnish a propelling power, if they always were filled by breezes blowing in the right direction; but, as ships are now so often driven from their course by adverse winds, steamers possess a vast superiority over sailing vessels.

The question is, if all the advantage derivable from sails has been obtained? I think we may decidedly assume the contrary; because they have not hitherto been used *to operate upon the paddle-wheel, which I conceive they might be made to do effectually.* You probably may be amused at the simplicity of this contrivance: is it the worse on that account? No, certainly; for what are steam-engines, in all the majesty of their might, but an adaptation of a simple phenomenon, and making the vapour that lifts the pot-lid drive on a huge ship at the rate of twelve or fifteen knots an hour? As windmills are worked by sails on shore, will wind and sails be incompetent to make wheels do their duty in a ship? I think I see the smile of contempt with which sailors would greet me, should I here stop short in my description. Some wag would say, "this is a sprightly notion truly! That's your 'sort for grinding.' What, rig a ship with windmills! Foretop windmill there, stand by to reef." What would a sailor have said a few years back, if, on seeing some paddle-wheels in a dockyard, and inquiring their use, he had been told that they were to row a ship through the water, and that her main-mast was to be an iron funnel?

It would require some consideration, and a variety of experiments, ere it could be determined how to cut, adjust, and trim, a suit of locomotive sails, and if they should turn horizontally or vertically. Yet, I feel almost confident, that in all cases, except upon a bowline, it would suffice to have the sheets of ordinary sails bent to some parts of the machinery. The appropriate combination of wheels, &c. must be referred to the department of engineers and naval architects, to whom I would suggest the idea of *pumping up water into reservoirs abaft, to be conducted by shoots, emptying their contents upon paddle-wheels, after the manner of a water-mill on shore.* Thus far the scheme comprehends going before the wind, or free; when sails of the ordinary structure would suffice to work winches, pendulums, or rollers. Next, we must be prepared to meet a difficulty, and no small one, I admit; this is progressing *head to wind!* How admirably this is done by steam? Yet this would, fifty years ago, have been pronounced a thing impossible, and to have hinted at it, would have exposed a man to ridicule.

Supposing the action of vertical or horizontal sails should only

impart to paddles sufficient force to send a vessel on but half as fast as steam now drives her, we should even then esteem ourselves prodigious gainers; for trifling is the progress ships now make when they are forced to beat. So feasible do I esteem the plan of working wheels by sails, that, in my mind's eye I now see a vessel going in the wind's eye; her topmasts struck, her lowered yards braced fore and aft, and carrying no canvass except what is used for turning round the paddle-wheels.

Now, sir, to you, as a man of judgment and experience, I freely venture to submit views that I long have had in contemplation, and upon which I am solicitous to take the benefit of your opinion. It may be said, admitting this adaptation of sails to work machinery proves more or less successful, what will become of your new-fangled vessel in a calm, when paddle-wheels no longer can be set in motion? To this I answer, that they can be set in motion, and must, or, at all events, may be so, in cases of emergency; although, I must candidly confess, that, up to the present time, no better mode of doing this has occurred to me, than the adoption of a tread-wheel system, unless a capstan, furnished with most powerful purchases, should on trial be found preferable.

As the introduction of the tread-mill in houses of correction is designed to answer the purpose of a punishment, the degree of muscular exertion imposed on the prisoners amounts in some cases to hard work; others, oppressive labour; and to the weakest operators, to insupportable fatigue. However, it is to be presumed a further complication of machinery could be made to reduce the quantum of labour to so low a rate as to make it an exercise by no means cruelly severe; while, in its adaptation on board of ship, the mechanist would contrive his apparatus so as to be set in motion by the least degree of muscular exertion possible.

Considering how irksome calms become when long continued, men would not certainly repine to take a spell at working a tread-wheel under such unpleasant circumstances; the labour would be far more moderate than what is requisite to ply the sweeps; or, they might supply cisterns by means of the chain-pumps, to work a water-wheel upon the overshot principle, as before suggested. Only conceive how useful these modes of impelling a vessel would prove occasionally, in going through such places as the Straits of Malacca, &c., and also in proceeding up from Macao to Whampoa. I think Mr. Perkins said ships going to Canton took new steam-engines, to be worked in their launches, for the purpose of towing them up, when, wanting wind to fill their sails, they had not steerage way. When you and I, forty years back, went up to Whampoa, a string of miserable sandpans, rowed or sculled by old men, older women, and young Tartar girls, were employed by the pilot to tow up huge deep-laden Indiamen, forming a spectacle as

ludicrous as if a team of mice were harnessed to a broad-wheeled waggon.

But, to resume the subject of the tread-wheel system, whether or not it may be employed occasionally in calm weather to propel our merchantmen, there is one department of the public service where at least it might be tried as an experiment. I mean the dockyard barges, hoys, &c. &c., used for transporting stores to vessels fitting-out. Now, the persons employed to work their tread-wheels should be convicts from the hulks, or delinquents from the prisons; these could unfortunately be furnished far too readily, the supply exceeding greatly the demand; which cannot be said of the materials requisite to keep steam-engines going. It only remains to be repeated, that an adjustment of the locomotive apparatus to the ends in view, comes within the scope of naval architects and engineers, who must decide upon the possibility of reducing theories like these to practice. I feel persuaded they, in part at least, are practicable, and will be made so; for we live in times when the inventive powers of man are kept on the full stretch to suggest improvements in all departments of the arts and sciences, and all are striving to abridge as much as possible the present sum of human labour.

With the greatest respect and regard,

Your obliged servant,

To J. Horsburgh, Esq., J. J.

Hydrographer to the Hon. East India Company.*

DESCRIPTION OF THE REEFS ON THE NORTH-EAST COAST OF TAHITI, *Society Islands. By Mr. W. Forbes, Acting Master of H.M.S. Hyacinth.*

THE north-east reef extends from one mile and a half E. by N. ½ W. of Point Venus, to the valley of Hapaino. It is about ten miles distant from Point Venus, and the first valley to the eastward of it. This reef is detached, and for the most part lies parallel to the coast, except near its centre, when it then trends to the N.N.E. for about a quarter of a mile. The channel between this reef and the reef to the southward is abreast of this valley, (Hapaino,) and about two miles in width. The soundings

* Subsequent to the period when this letter was written, I found in a periodical, called the Hastings and St. Leonard's Journal, No. 2, July 31st, 1835, a paragraph, stating that a plan for working locomotive machinery by means of sails *has been successful!* It is to be regretted that the announcement is so incomplete, the number, &c. of the Italian work not being specified. "Mechanics in Sailing—The Biblioteca Italiana gives a detailed description of the application of a windmill to the motion of vessels at sea. The vessel has two paddle-wheels, like a steam-boat, and the mechanism of the windmill is so contrived, that if there is any wind at all, from whatever quarter it may blow, the vessel is propelled by the action of the sails, and may be steered in whatever direction is desired."

on this reef I found very regular; from the shoal part near its centre the depths gradually increase from three to twelve fathoms, coral rocks; it has on one part, for a considerable distance, from three to four fathoms and a half; and this tract may be known by its lying directly off a remarkable part of the land, which is a little declining, but nearly table land. Towards the eastern end it trends for a short distance S.S.E. tack, and then terminates to S.W.; the outer part of this reef is from two miles and three quarters to three miles off shore. Marks when on its centre: Point Venus will just be on with the highest peak in the island of Eimeo, bearing W. by S. ½ S. To avoid it, a ship coming from the eastward, when within ten miles of Point Venus, ought not to bring that point to bear more westerly than W.S.W. Between the reef and shore the passage is good, but, leading to neither harbour nor place of shelter, can be of no advantage, and ought therefore to be avoided. This reef seldom, if ever, breaks, and is from one quarter to three quarters of a mile in width; least water, three fathoms.

This reef, as well as the following, are not laid down in any chart that I have yet seen. They exist in the only spot off the N.E. part of the island, where Captain Cook has not laid down any, and therefore very liable to mislead a stranger.

The eastern reef off Tahiti lies off the valley of Teallay, and is more dangerous than the former, from its being hid from Point Venus. Most vessels making that part of the coast invariably stand in-shore; to make that point (which is low, and covered with cocoa-nut trees) would, by keeping too close in, in all probability, get within this reef, as it does not break. The outer part is from two miles and three quarters to three miles off shore. The depths are regular; I found from four to eight, ten, and twelve fathoms, sailing over it in a direction parallel to the shore. The bottom is all coral rocks: it is from three quarters of a mile to a mile wide, and lies parallel to the shore. Marks from the depth of three fathoms, least water found on it, are the high peak and near the centre of the peninsula of Taaratoni, on with the low and extreme point of the largest peninsula, bearing S.S.E. ½ E. This point has two small islands lying off it, and a very remarkable black mould-hill near the village, close to the beach, and nearly perpendicular, bearing S.W. by W. ½ W. A ship may enter within this reef, as there is deep water at either end. It is about five miles in length, and very detached.

The weather being unfavourable during the time I was in the reefs, I had no opportunity of ascertaining their correct latitude.

These reefs are but little known, no person having ever sounded over them until our arrival, when I had an opportunity of so doing. On one of the following reefs an American ship struck not long since, and was nearly lost.

H.M.S. Hyacinth, Papieti, Tahiti, May 10th, 1835.

Temporary Rudders.

The following plans for temporary rudders have been communicated to us by several correspondents*:—

Sir,—A ship having lost her rudder at sea, may make another in the following manner:—A temporary sternpost is to be made, by securing a spar, spanker-boom, or jib-boom, (the former is the longest,) up and down the stern. It should be well secured, and the partners accommodated to the rake of the spar, so that the lower end should come close to the sternpost, or damaged rudder. The temporary rudder is then to be formed of strong canvass; storm fore-staysail with the haulyard part downward, or the gaff trysail; the headrope of the sail being the strongest, is to be hauled out to the gaff-end, as shewn in the sketch, fig. 1, and forms the after leach or back of the rudder. Beyond it, on the end of the gaff, is to be a series of oak planks, one inch and a half thick, cut up in lengths of about two feet and a half long, and let into the gaff by sawing out the middle of it. The oak planks may then be slipped into the score, and secured by nails through them, above and below the gaff, as represented by the dots. I would recommend the sail to be tried without the planks first, as perhaps they may not be required, or, if *preferred*, the planks might be enlarged, and the sail dispensed with, though I doubt not the sail answering the purpose.

Supposing the vessel to be one of our ship sloops of war, a spanker-boom, according to the *old warrant*, is about forty-two feet long, and nine inches in diameter; jib-boom thirty-two feet long, nine inches and a half in diameter. Either one or the other

* In laying the accompanying plans of temporary rudders before the readers of the Nautical Magazine, the Editor acknowledges his obligations to those of his brother officers who have so handsomely come forward with their proposals, to be subjected to the criticism of the whole nautical profession. It is not, however, with a view of establishing either one as the best, and to recommend it to be generally adopted hereafter, that they have been collected, but rather, by combining the result of experience, to make known those measures which may be best adopted, according to times and circumstances. A ship might lose her rudder at a critical moment in crossing the bar of a river, when a few minutes more might run her aground, if she were unmanageable, and in this case what temporary rudder is best, becomes a question for which a few moments only are given to decide. The plan of steering by the stream cable payed out astern, proposed by a former correspondent in page 28, or by the jolly-boat lowered instantly, with the plug out, and towed astern, would perhaps then be adopted; while a ship losing her rudder at sea would have leisure to adopt any other. We shall therefore leave the whole in the hands of our nautical readers, feeling assured that they need not be told, that the plan of proceeding on such an occasion as that of losing a rudder, must be regulated by time and circumstances. Ed. N. M.

of these perhaps may answer the purpose. After cutting the sail to the required size, say in this case eight feet at the gaff, and tapering down to nothing at the tack, it should then be roped, applying the already prepared head-rope, or stay-leach, as the after-leach.

When the sail is ready, bend and hoist it up on a trysail-mast, as flat as a board. The temporary sternpost being got ready, by hoisting the large end of the spar up to the peak of the mizen, and entering the small end between the partners upon the ship's stern, let it slide down as low as you want it, previously fitting guys on the lower end, to be brought up round the transom, for its support, and to keep it exactly amidships. A stout rope should be also rove, as a tack-rope. When all is ready, having got tackles for throat and peak haulyards, lower the gaff and sail over the stern; bring the jaws of the gaff to the prepared sternpost, just under the lower partners; there secure the jaw-rope tight round the spar; man the tack-rope leading from lower end of spar up through the rudder-case; lower away the haulyards, and haul the tack close down. Then hoist the sail tight up, both jib and spanker booms having been fitted with a sheeve at the end, to reeve the tack through; the wheel ropes should also be previously secured with clove hitch over the gaff end: and this canvas rudder will then be complete.

I have chosen materials of the lightest kind, combined with strength, as I think heavy materials used in forming temporary rudders at sea, require much time and trouble in preparing, especially if the ship be in much motion, which is generally the case; and the more bulky the materials are, the more violent is the effect of the sea, particularly in the pitching and 'scending motions of the ship. I have therefore prepared this rudder more on the principle of the real rudder, than a spar towing astern. This is to ascend and descend with the ship's stern frame, and the edge of the canvass, and the oak planks forming the sweep will cut the water; if time and circumstances would permit, while the canvass rudder was kept upon a stretch upon the trysail mast, preparatory to its being fitted at the stern, I should take some strong painted canvass, cut out exactly to the figure of the rudder, to fit *inside* of the leach-ropes, in two pieces, placing each piece over the surface of the canvass, on each side. Then, with strong twine and needle, stitch strongly through all those: it would then be as stiff as a board.

A chain should be used wherever the wheel-ropes rub either against the edges of broken copper, or against the ship; if leading blocks can be fixed about the transom, at the extreme breadth, all the better, as this would prevent all friction, and the wheel-ropes would do without chains.

Considering the increased length of the lever from the centre of

gravity of the ship, on this plan, which must always increase the power of the rudder, I have no doubt of its answering the purpose. The facility of fitting a rudder at sea with materials that are manageable, is the great point. I beg to present it to your consideration; and if you think it worth a place in the Nautical Magazine, I shall be obliged by your inserting it. I should have noticed before, that cleats should be fixed on the temporary sternpost above and below the partners, to keep it from moving up or down.

Your most obedient servant,

JOHN COOKESLEY.

It should be observed, this rudder being so easily drawn up and let down, favours any alteration or improvement on it at pleasure.

Rackley House, Portshead, near Bristol, Feb. 2, 1836.

Explanation.

a—Keel of the temporary sternpost.
b—Canvass Rudder.
c—Trysail Gaff.
d—Sweep of Planks.
e—Peak Haulyards.
f—Throat Haulyards.
g g—Cleats and Partners securing sternpost.
h—Wheel-ropes secured to the gaff to steer by.
i—Guys secured to the heel or sternpost.
j—Tack-rope leading through the sheeve in the heel up through the rudder-case.

H. M. Ship Talavera, Hamoaze, 20th Dec. 1835.

Sir,—The loss of a rudder, and the difficulty of finding a substitute for it, was clearly exemplified in the case of the Pique, and as any means, under such circumstances, should be prompt and simple, I beg to offer through your invaluable work, to the notice of my brother tars, the following efficacious, although not the most handsome tail in the world.

The power of an oar in the head or stern of a vessel in steering, is as well known to the London bargemen as the whaler; and that simple instrument I would adopt. But, as an oar of sufficient size cannot be easily used in a ship, substitute for it any spar, the nearer one-third the length of the ship the better. On its outer end, fasten as many boards at right angles, in a conical shape, as will contain a similar superficies to the rudder; and to this end of the spar attach guys. On the inner end, secure an eye, or a ring-bolt, that shall work freely (but not more loosely than can be helped) on a chain such as may be in the ship. Use chain, because rope so soon rubs through. On the one end of this chain have two stout hooks; and for such emergencies all ships should

have two eye-bolts, one on each side the sternpost, with a smaller one over the centre of the larger ones, so as to keep a small line rove as a conductor to the hooks, and insure their security whenever they may be required.

Being thus prepared, nothing more is necessary than to drive the chain through the inner ends; make fast a pig of ballast, or any weight, to the outer and lower end of the plank, for the purpose of sinking the end three or four feet below the surface of the water; launch the spar overboard; bowse the chain or rope as taut as possible, the closer to the sternpost the better; lead the guys to either quarter, if you have out-riggers all the better; and if of the same length with your steering apparatus, and placed at an angle of 33° abaft the tafrail, it will increase the power nearly double, and steer a vessel as effectually as any rudder can do. It will insure her staying much more so, for, with a very little *trouble*, (a word that should never be admitted in the seaman's vocabulary,) and a topping-lift, when the ship has lost her way, by lifting the beams out of the water, and placing them on the opposite quarter, her stern may be pulled quite round. That this method of steering can be greatly improved is certain, but for the exigencies of the moment, it will suffice, and can be applied without hazarding life.

The sketch (No. 2) represents the stern of a ship with the spar thirty-four feet long, and vanes seventy-two feet superficial contents; the outrigger at an angle of 33°; the guys leading over the quarter to the wheel; the rudder, hanging by only one brace, is secured to the sternpost, and the tiller unshipped.

a a—Steering Guys leading to the wheel.
b—Out-rigger and Block.
c—Water-Line.
d—Steering Lever or Spar.
e—Vanes.
f—Chain rove on inner end rudder lost.
g—Pig of Ballast to sink outer end.
h—Chain embracing a damaged rudder.

Wishing the utmost success to your valuable publication,
I am, Sir, &c.
JAMES PEARCE, Master, R.N.

Figure No. 3, represents a temporary rudder as proposed by Mr. Paskoe, late Acting Master, R. N.

Explanation.

a—An Iron Out-rigger projecting over the stern.
b—A Topping Lift passing over the roller in the out-rigger, and leading to the gaff-end, or mizen topmast head.
c d—Guys with tackles *f*, the falls leading in board, to the wheel, after passing over out-riggers *i* on each quarter.

e—A Spar working in an eye-bolt fixed in the stern, flattened at the outer end, and the surface increased by two additional side pieces.

g—A lower guy double at the sternpost, passing forward, and led in through the hawse-holes, by which the lower end of the spar is kept down.

Plan for a Temporary Rudder, to be formed by the Spars of the Vessel; and the same contrasted with Pakenham's Rudder, as completed in 1820.

Metal hoops,* of the exact form of the section of the original rudder, are fitted with moveable pintles, which may be made use of on the most convenient brace (see fig. 4 and 5, &c.)

The main topmast is sided to pass through these hoops, which it should *fit* pretty tightly: and the distances of these hoops (by the mould supplied—*a a* a piece of iron modelled to the sternpost) admit of either shipping the pintle into one of the braces, or allowing the shoulder of the jaw-piece to *rest* on it.

The jib-boom is driven upwards, placing deals of sufficient thickness (if required) to cause it to fit.

Spare plank (bottoms of hammock-nettings, if none other are at hand) is then to be laid on the sides, and the internal space filled up by small spars driven firmly between them.

It is evident that the instant this rudder, if formed moderately dry, is put overboard, that by the swelling, from capillary attraction, it must form itself into a compact mass, and supersede the necessity of bolts. It may be sheathed transversely with small deal or elm, if required.

The lower jaw-piece (fig. 7, *d* in fig. 4) is made to the mould of the stern-post at the lower brace, and is connected by hawsers well moused, and led into the hawse-holes.

Chains will not answer, unless of mixed metal, on coppered vessels.

The second jaw-piece (fig. 6, *c* in fig. 4) is moulded *only* to the *sternpost*, but by two joints will accommodate itself to any part of the run.

The upper pintle should fit the brace above water, which is seldom damaged; the rudder-head to be secured by oak plank, forming a collar on its *after* side, which should be formed by *cleating the topmast*, instead of cutting into it.

As the aft side of the rudder-head sweeps on a true segment, it will retain a fair bearing by placing this after "partner" at right angles to the rake of the post. One should be fitted to all rudders before leaving dock.

To be ballasted temporarily or permanently, as may be wished, by confining the weights between short spans driven at top and and bottom.

* Three only are now considered necessary by Captain Belcher.

Bulls' eyes, at nine or ten inches diameter, filled with metal tubes to lash to the hawsers or chains, should be supplied to protect the hawsers from being cut by the copper. The *mousing cannot* stand long.

The difference in expense, as taken in 1820, for the construction of Pakenham's rudder, was found as under :—

Main-topmast of a 74-gun ship 73 ft. 21 in. reduced 1·9	£180	0	0
Jib-boom, 49 ft. 14 in. reduced 1·2 . .	49	0	0
Main Caps	2	12	6
Smaller spars, bolts, &c.	50	0	0
Dead loss by Pakenham's being destroyed, by bolts	£281	12	6

Now, by the present plan, no bolts are used;

Therefore—Main topmast, as reduced, 40 ft., diameter 13 in. equals main-topmast 50-gun ship.

Jib-boom 34 ft. diameter 13 in. equals jib-boom of 36-gun ship.

Small spars not injured, and the copper and metal hoops and jaws, equally valuable as before.

Chatham, Feb. 1836. E. BELCHER, Commander, R. N.

This plan was originally proposed in 1820, improved, and sent officially to the Admiralty, by Rear-Admiral Sir Charles Fahie, between 1822 and 1824; with report of captains ordered to report on several models.

Figure 9 is a representation of Captain Belcher's rudder improved; figure 10 the metal hoop *b*; the braces *a* and *c* for securing it to the sternpost, as before.

Figure 8. *A temporary Rudder, proposed by Lieut. Bowers, R.N.*

Explanation.

e e—A spar provided with a long pintle, as shewn in the sketch, resting on a shoulder on the deck.

c d—Iron plates firmly secured to outside of the spar, and shaped so as to fit the stern-post and run of the vessel.

a b—Braces attached to the plates, and leading forward, by which the spar is secured close to the stern-post.

g—Three oak planks, shaped as in the sketch, and secured together by three bolts passed through them, as shewn. These form the rudder, which is provided with gudgeons, by which it rests on the pintle.

f—Guys leading in board, by which the rudder is worked.

Lieut. Bowers also proposes, in case of a ship losing her rudder by accident, in moderate weather, when there is no time for constructing the foregoing, to steer the ship by means of the jolly-boat filled with water, and towed astern, with guys leading up to each quarter.

Captain Pakenham's Temporary Rudder. Communicated by Oliver Lang, Esq., Master Shipwright of Woolwich Dockyard.

Explanation Fig. 11.

a—Topmast inverted; the fid-hole to receive the tiller.

b—A spare lower cap (see also fig. 12) fitted to the stern-post, to act as a brace with two hawsers, one made fast to each eye-bolt, then passed under the bottom of the ship, and brought into the hawse-holes, and hove taut on board, to confine the cap to the stern-post.

The topmast united by bolts to spare spars, to form the shape of the rudder, and then covered with any board that may happen to be in the ship.

c—Pieces of anchor-stock, secured to the deck to form a collar for the topmast to work in over the rudder-hole.

d—Rim secured round the topmast over the anchor-stock pieces, to keep up the topmast in its place.

We understand that Mr. Lang has proposed a plan, which has been adopted, for a tiller, in case of the original one being carried away. A temporary iron tiller is supplied, being fitted to ship in the after part of the rudder above the water, and to be worked by guys leading up to each quarter.—Ed.

In the Journal of Science for 1829, Commander John Pearse, R. N., proposes that ships be supplied with a pine spar in lieu of the two yard-arm pieces; which spar he would use for the main piece of the rudder, instead of the topmast, the latter being weakened by the sheave-hole for the top rope, where strength is required. And in lieu of the cap, he suggests the plan of a metal collar, fitted with two eyes for the hawsers, the eyes being more favourable for bracing it to the stern-post, and the weight of the collar desirable to sink the lower part of the rudder.—Ed.

Temporary Rudder.

Mr. Editor—The January number of your valuable magazine, in which the attention of correspondents is directed to the important subject of temporary rudders, induces me to describe one which I once saw used with the best effect by an American merchant-ship of 400 tons. I doubt not that many of your readers are already well acquainted with such an expedient; but as a description of one of the kind may not have reached you, I hope the following may be found worthy a place in your pages, and perhaps, too, furnish a hint that may be found available in time of need.

This plan is on the principle of steering with an oar; and in the instance which came under my observation, a spare topsail-yard was used, though a spare topmast, hand-mast, mast-fish, or other spar of similar dimensions, will probably answer as well. It was hung over the stern from the mizen masthead by a stout tackle, hooked just above the centre of the yard, which worked in a substantial crutch, firmly secured on the taffrail. The yard-arm which was in the water had a thick piece of plank nailed or bolted on each side of it, to give it sufficient breadth to act with proper effect,

and to keep it well down; several fathoms of a stream chain were passed round it, but pigs of ballast, secured between the two planks forming the blade, would perhaps be more convenient. Guys were made fast just above the blade, and led through a block on each end of an outrigger, lashed across the stern; good tackles were hooked to the guys, and the falls brought to the capstan, which was easily worked by two or three men. If three or four fathoms of the guys were of chain, they would be more durable than rope, which the wash of the sea would soon wear, besides the advantage of its superior weight in tending to keep the blade down. The constant friction of the yard in the crutch would require it to be well lined and parcelled, for which purpose it might be necessary to drive a couple of bolts in the stern.

I was on board a ship when with such a make-shift she worked cleverly into the harbour of Rio Janeiro, and I think it had then been used several weeks, the rudder having been lost near Cape Horn.

I have by me a plan of Pakenham's rudder, but it is so well known that it will be unnecessary to occupy more of your valuable space with a description of it; the greatest objection to such a plan, as well as to that of steering with an anchor, I apprehend to be the difficulty of fixing and keeping it secured in its place when the ship has much motion, as is generally the case when it becomes necessary to resort to such expedients; for the guys, which are required to keep it close to the stern, are constantly found to chafe through by being led close along the ship's bottom.

Should the above sketch hereafter be of any service to a shipmate, it will have abundantly answered the purpose of your's,

Feb. 18. K. L. E., Lieut. R. N.

[We have introduced the following, merely with the view of filling our plate. —*Ed.*

Dimensions of the Hull, &c. of H.M.S. Pantaloon and Waterwitch.
Figure 13.

	Pantaloon.	Waterwitch.
Length between the Perpendiculars	90 0	90 6
Keel for Tonnage	71 4¼	71 7
Water Line	87 4	89 0
Trend of Keel	78 3	86 0
Breadth Extreme	29 4¼	29 4
For Tonnage	29 2¼	29 2
Moulded	28 8¼	28 8
Depth in Hold	12 8	12 8
Burthen in Tons	323$\frac{33}{94}$	323$\frac{84}{94}$
Draught of Water (mean)	12 5	11 11
Displacement in tons	316	303
Area of sails in feet	9161	9795

Sir,—As the enclosed appears to come within the scope of your excellent and highly instructive work, and the plan having been

found successful (in, I think, the Windsor Castle) I beg to say, it is quite at your service for copying and insertion, if you think fit, in the Nautical Magazine.

I am, Sir, yours, &c.

5th Jan. 1836. A FRIEND OF COMMANDER RICHARDSON.

Commander Wm. Richardson has now the Clio at Barcelona, having very recently returned from the Gambia. He was of essential service to our merchants in throwing open the valuable gum trade at Portendick, Senegal, which had been so long monopolized.

Figure No. 14.—By adopting Commander Richardson's proposed plan of setting up the main topmast-stay to the cross-piece before the foremast, with two thimbles and a laniard, or making the spring and topmast-stay of equal size, the main-topmast would be perfectly independent of the foremast, and the difference of the angle being 12 feet more spread in a 74 than the fore-topmast-stay, would, with the stability occasioned from setting it up on deck, make up for the bellying; the yard would brace up equally well, and a fore-trysail might be substituted for a main-topmast-staysail.

Length of a 74's main-topmast-stay, 25 fathoms.
Do. by proposed plan . . . 21 do.

CAUTION TO NAVIGATORS—DANGEROUS REEFS IN BASS STRAIT.

THE recent melancholy loss of the Neva transport, induces us to call the attention of navigators passing through Bass Strait to the following extracts, describing the positions of rocks not generally known:—

"Wright's Rock is in a line between Craggy Island and north-east extremity of Kent's Group, at the distance of six miles and a half from the former; and, although small, it is sufficiently conspicuous to be visible several miles from a ship's deck. Captain Flinders passed near enough to its south side in the night, to hear the growling of the seals upon it, and had thirty fathoms water on a coarse bottom; but he must have been very close to a sunken danger which was seen in that direction by the brig Endeavour in 1817, and which renders the passage to the southward of the rock very unsafe. There are soundings in twenty-eight fathoms, gravel and small stones, three miles to the N.W. by N. of Wright's Rock, and twenty-nine fathoms on a coarse sandy bottom, five miles off, to the N.E. by E. This depth continues for eleven leagues further, in the same direction, when it gradually increases, and the bottom becomes fine sand."

"Endeavour Rock was discovered in 1817 by Capt. Hammant, in the brig of the same name, and is represented by him to be 'in

a line between Craggy Island and Wright's Rock, about a third of the distance from the latter, or in lat. 39° 38′ S., long. 147° 35′ E. When the south* end of Kent's Group bore W. by N. Craggy Island S.S.E., and Wright's Rock S.W. by S., saw a reef with two small rocks on it, visible at the rebound of the sea, (being then low-water,) bearing S. ¼ W.' This danger, and others which are reported to exist about Craggy Island, and the northern shore of the Great Island, render great caution necessary in passing through the channels to the southward of Wright's Rock; but the space of nearly four leagues between it and Kent's Group, appears free from obstruction, and is frequently used by borrowing towards the latter. The soundings in this part must not be depended upon as a guide during the night, or in thick weather, as they are deeper close to some of the dangers, and to the northward of them, than at the distance of several miles to the eastward."

We have taken the foregoing extract from the Australian Directory, † principally for the purpose of cautioning navigators against following the track of Flinders, (as inserted in his chart to the southward of Wright's Reef,) on the authority of Captain Laws, who passed through Bass Strait in H.M. ship Satellite, and made the following remark on this danger:—

"October 20th. At daylight, having had a fresh breeze from the northward during the night, Roger-Curtis Island bore E. S. E.; Kent's Group, in sight from the masthead, bearing E. by N. At noon, wind N. E.; Stack (Wright's) Rock N. E. by N. one mile; 1 P.M. tacked, finding the *passage between the Stack Rock and Craggy Island full of rocks and breakers*, though none are marked in Captain Flinder's chart of Bass Straits."

Captain Laws has done a service to his brother seamen in pointing out this danger, which the track of Flinders might have led them into; and it must be observed, in justice to the memory of this excellent officer, that he passed to the southward of this rock *at night*, and observes that he heard the noise of the seals on the rocks.

Captains of ships are therefore cautioned to pass to the northward of the Stack, or Wright's Rock, in Bass Strait; and, as a current generally sets to the southward across the strait, they would do well to keep the northern shore on board, as by so doing they would avoid the dangerous reef extending off the north-west extreme of King's Island, called the Harbinger Reef, on which it is said that the Neva was lost.

* The north end must here be meant, or the bearings, which are magnetic, will not agree on the chart.

† Published by the Admiralty, and sold by R. B. Bate, 21, Poultry. A work which no vessel bound to Australia should be without. ED. N. M.

DEFECTS OF MERCHANT SHIPPING.—*Regulations proposed for their Improvement.—Effect of Insurance.—The Register Book.*

(Concluded from page 236.)

Let the great man I am supposing to be casting an unprejudiced eye over this scene, now be transported to Sheerness yard, and there see H.M. ship "Vernon" in dock, completely rigged, with all her stores on board,—"spurning support."

When such perfection as was to be witnessed in the king's yards was at hand to copy, how could it by any possibility be accounted for, that such a senseless thing as the merchant ship could be formed in the same day?

Let us now conduct the same observer to a building-slip in the river Thames, to see what even merchant builders can effect. We will shew him a steam-ship building by Messrs. Fletcher and Fearnill: here he will see work and strength, such as I can vouch for were never before witnessed out of the king's yards. He would first be told, that the old-fashioned fabric which he had seen putting together, and called a ship, was found utterly incapable of withstanding the vibration, the shaking, it sustained by his powerful machinery, when converted into a steamer! He would be told that the weakness of this fabric was found to be such, when submitted to the operation of the engine, that it actually so shook and destroyed the whole construction, (at which, however, he would not be observed to express much surprise,) that the twisting and alteration of the vessel's form not only prevented there being sufficient foundation upon which to erect the machinery, to work true, but that the alteration in form was such as to destroy or neutralize a great deal of the engine's power by friction, and, in fine, *even to break the great shaft of his engine*. This explanation would seem to be called for, upon witnessing what he would see in progress at the building-yard above named; (and any one wanting to know how a ship should be built, would do well to go there, too.) I think, however, he would have good grounds for concluding, that *here* was a superfluous expenditure of timber; for, after seeing the ordinary merchant ship, and learning that she would actually swim, and often perform her duties for many years, (if she had luck, and kept off the ground,) there would not appear any reason for the extreme perfection shewn in the construction of this steam-ship, which could justify the expense.

Pondering over all he had seen and heard, Mr. Watt would naturally have endeavoured to account for the causes that were in operation, to produce such a degree of stupidity as was evinced in the ordinary mode of construction; and which would appear the more unaccountable to him, from witnessing, that *a better system was known;* and whatever weight he might be inclined to

give to the information he would receive, as to the effects of "registration," and "insurance," it would be impossible but to conclude that the whole must be attributed to a very wide-spread ignorance. It is not, I think, unlikely to have occurred to him, whilst in this mood, to consider from what possible example, either in the works of the Almighty, or the minor ones of human hands, this fabric (the ship) could have been copied. There is nothing on earth like unto it, and the most ready example which would probably occur to him, that a ship-builder *should* have copied from, would be that, the nearest at hand—*his own frame!* What a precious piece of contrivance the human frame would be, were our ribs formed each of four or five *loose* pieces of bone—held in their places by our skin! If there is any thing in existence, either human or divine, that can justify the method of putting together a merchant-ship, I should like much that somebody would point it out; a very savage would look at it with amazement! this, any one would not fail to conclude, who has observed with what close attention every work of his is in imitation of something taken directly from those of his Maker! I will answer for it that were a "South Sea Islander" instructed in the use of our tools, and set to work upon a merchant-ship, in this country, he would not fail to express his surprise at seeing the disjointed thing the frame is!

We will now imagine the following question to be put by our supposed investigator,—"How do these merchant ships wear—what time do they last?" With what surprise would he receive for answer, that "They never wear out!!

In the north, the idea of breaking a ship up never occurs. I would not swear that such a thing never did happen—but I believe, if it ever did, (I never heard of it,) that it is so rare an occurrence, that it would, I am very sure, be so noted amongst them. A ship, amongst the north-country people generally, is a sort of "heir-loom;" and they most of them own ships, built in the time of their grandmothers, and called after them,—these ships are repaired, rebuilt, (after their manner,) and patched up in every sort of way, according the caprice or judgment of their owners. After they become unfit for carrying dry cargoes, they are appropriated, according to their sizes,—the larger ones, to the American timber trade, the smaller to that of the Baltic,—with the coal trade, or, in fine, any employment the demand and exigencies of the times present. To account for what becomes of the largest of them ultimately, I recommend a perusal of the shipping intelligence for the winter months of each year. I think this season has afforded more than its usual share of these dreadful accounts; let any one but take up the list of ships lost, upset, swamped, dismasted, arrived with loss of deck-load, leaky, waterlogged,—everything washed off the decks, stanchions gone, and

covering-boards split; and read moreover the accounts accompanying many of these scenes,—such as the crew taken off the wreck, after ten or twenty or more days—living in the tops, or clinging to the hull—half of them washed overboard,—another portion dead through fatigue and starvation,—the survivors saved by living upon the carcases of the dead! and then he will have a history of the "wind up" of such as are not lost before they arrive at this last stage of their employment,—and if he can read this, and conclude all is right, why, I can only say, that all disinterested men, who have any feeling, disagree with him. As for the smaller vessels, their end is similar,—with only this difference, that a greater number of them are lost on rocks, sands, or lee-shores,—and, fortunately for those who navigate them, the crews are either saved, or drowned at once in good earnest!

The picture I have drawn of the building of the ship presents absurdity, one would think, sufficient; but I would yet conduct the scientific observer I have supposed to be taking an unprejudiced view of these proceedings, to a repairing-dock at the out-ports, (something not unlike it is sometimes to be seen in London,) and there let him witness the "ne plus ultra" of folly.

Let him see one of these "old family ships" taken into dock: as much care is taken in shoring her up, as though it was the old woman she is called after, being propped up in her arm-chair in her last days of dotage,—here is commonly to be seen, by an observing eye, the whole form of the ship change, as she settles herself down on the blocks.* I remember, on an old ship of this description, (she was called after *my* grandmother,) being docked, and there being some neglect in the important measure of shoring, that one of her bows settled so considerably as to threaten the destruction of the whole affair! The captain, turning the matter into joke, said, he would pull it up into its place again, when he got the fore-tack to the cat-head;—this was taken, I well remember, by the by-standers, as a "devilish good thing," on the part of the captain,—and was often after repeated as such! this ship, notwithstanding, endured many years after, and was at last fairly swamped on an American timber voyage, at the good old age of above sixty! I saw lately, of all the precious jobs that ever came under my observation, certainly the worst, one that set all decency and common sense at defiance,—in the repairing of an old vessel,—some family concern it may be supposed, (and the only

* Mentioning ships changing their form, puts me in mind of a story I once heard a naval surgeon relate.—He belonged to a line-of-battle ship—one built in the "olden time,"—she was employed, in the last war, blockading Cherbourg, during heavy gales, in winter; when the enemy's ships could not get to sea, they repaired to Spithead. He said, when they anchored, towards evening, the officers could hardly get any sleep,—that there were reports all night close to their ears, like pistol shots, which, he said, were caused by the ship settling her timbers together, which had been deranged by carrying sail, and bad weather!!

excuse for it,) she was lengthened at the same time,—and pulled down, one piece after another, till perhaps three-fourths of her timbers in the upper works were new, and the remainder certainly good for nothing; and when bored again for new fastenings, would be clearly nothing but useless lumber; the new timbers were put down, one after the other, without reference to shifts,—just so far as they could be conveniently got down into the spaces *dug out* for them, as low as tools could be got to operate upon the defective mass. I shall never forget this scene—there was nothing good about the vessel—every part of her was absolutely so bad, that the utter worthlessness of the whole concern will ever remain impressed upon my mind. This *thorough repair*, however, as I have no doubt it will be considered by those who manage the "New Register Book of Shipping," will, of course, according to their regulations, entitle this vessel, to carry again dry cargoes! I pronounce this job shameful and scandalous; and to evince a total absence of common sense, both in him that did it, and in the public that sanctioned it, to wit, the Register Book, its supporters and surveyors,—if ever that vessel comes in contact with the ground (roughly) she will separate, the new top from the old bottom, on the first heavy stroke of a sea; (perhaps the new mid-ship part may delay for a few minutes such catastrophe!!)

What is a cool and unprejudiced observer to think of all this? He must now be told the history of the register books,—which he will have learned by this time form no small item amongst the causes of the evil. The formation of these books was attended with great difficulties, surrounded by them, and that "age of a ship" was the only criterion whereby *such books* could be formed *by individuals*, may be pretty confidently asserted; and there is little doubt but the working of the present attempts to improve upon them, will prove this, and will itself end in failure. The evils, then, have been ignorance, classification, and abuse of insurance. To cure the former, let the work in the king's yards be the example;* and, in respect to the mischief of registration, abolish it altogether,—it is an affair that must be taken up by government. The sequel shall shew how the evil of insurance may be effectually cured. It is odd that it has never occurred to the gentlemen of these register books, that upon such a subject as the classification of *individual property* by *other individuals*; there is an utter impossibility, in the very nature of things, to carry their scheme into effect. In the New Book, it is true,

* In attributing so much "ignorance" to those who have to do with this subject, it may appear strange, almost incredible, that such *can exist*, with the opportunity, so readily at hand, of witnessing the proceedings in the king's yards; the explanation is, I assert, that not one in a hundred, either builders or owners, know any thing about how a man-of-war is built!

every owner who wishes his ship to appear in it, assents to the condition, and pays the stipulated fee; but as it is hardly to be expected that every body will concur, either in the propriety of the charge itself, or in that of its amount, or in the *wisdom* of the book, it is quite clear that the measure must be *very partial*, and, *unless general, it is clearly useless* as a book of reference.

Can any thing be more ridiculous than the whole affair? there are a great many ships *owned by the committee*, who framed, and yet continue to manage, this book,—*which are not registered in it!!*—it is an abortion altogether, and *this fact* is sufficient proof of it, its regulations being such as merit the speedy dissolution that awaits it.

The public interest loudly demands the interference of government, and these cheap times of peace are just favourable for carrying into effect such plans as will effectually regenerate the whole British shipping at once. No one, it is to be presumed, will deny, that when the public interests are affected, private ones must succumb; it will hardly be questioned that it is one of the duties of government to step in, when it is shewn that the cupidity and ignorance of those connected with the mercantile marine of the country are operating to tax the community to the amount of a million annually, (probably much more,) as well as to cause the loss of thousands of lives! Who can doubt, for instance, that as part of this loss of property, the dreadful list of swampings, drownings, and all kinds of disasters, referred to as occurring to the homeward-bound timber ships, is paid for, every farthing of the loss, by the public, in the shape of increased price for the timber brought by those ships which do arrive. Nothing can be more certain than that every loss at sea is made good by the public; as much so in the loss of a merchant-ship, as in that of a man-of-war: therefore, the clear right of government interference, to control and remove the abuses that cause such losses, cannot be disputed.

Before, however, attempting to shew the best method in which this interference may be carried into operation, there is a very important consideration to be disposed of; and that is, how far any *forcible* improvement in our marine is practicable, without adding to the expense; to the cost of the ship, so as to operate injuriously upon the general employment of British ships in competition with foreigners. I think that it may be readily shewn, that a most improved construction is compatible with this end. It is not necessary in this Letter, Mr. Editor, to say exactly what a ship should be—that I consider a point already settled, by the almost perfect construction of our men-of-war;—but, for the sake of placing in a prominent view, the utter absurdities observable in the putting together of the merchant-ship, contrasted with the advantages of adopting a different system, *and one that may be*

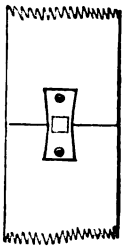
unattended with increased expence, I feel it necessary to recapitulate some of the most prominent objections, to shew that such change may be effected, and with such results as to economy.

It must be quite clear, I think, that what is intended for the "frame" of a merchant-ship, *is no frame at all?* It is intended, one would suppose, that the timbers were to form the strength of the ship, in the direction in which they are placed (vertically,) and, at the same time, to form a resistance to outward pressure; to effect these objects, it is incontrovertible that the parts constituting this frame should be *continuous*, from keel to gunwale, by firm connection the one with the other: *they are not so in any one instance.* The planking is intended to constitute the strength of the ship *longitudinally*—as also to resist outward pressure—which it does most effectually. When the objects, these *two* constituent parts of a ship are intended for, produce *each* their proposed ends, then the ship is complete, in respect to frame and planking, and not till then. At present, will it be denied that, with the exception of the floor timbers, the frame (or timbers) of a ship is of no avail for the purposes above stated? If it is, let it be shewn how! It merely serves to form the planking into *a continuous frame;* it positively serves no other end but this, in giving a consistency to the planking, which enables it to remain uninjured under all the shocks, twistings, and tendency to change of form, at sea, to which a ship is subject, and which enables it in fact to effect all it does, *and it is literally the ship itself.*

Some may be disposed to think, that it ought rather to be said, that the planking is auxiliary to the producing in the timbers (however previously unconnected) "the effective frame." I am not disposed to dispute about straws; but whilst the timbers are so ineffective, in their want of connection, I maintain I am right in giving preference to the planking, and stating the timbers *to be auxiliary to it*, and that upon it every thing at present depends; and to prove this, let any one observe, what is to be constantly seen, a ship pulled down for repairs, to the water line, the timbers altogether decayed, and the planks sound; *what swam, and held this ship together* on the voyage, from which, perhaps, she had just returned? What again is the effect of doubling? How many ships are to be seen, with good doubling well fastened through upon the ceiling, upon breaking up, giving proof that *the plank alone* had been their support for years!!

It seems strange, if it is admitted to be any of the intended or desirable purposes of the timbers to connect the bottom and top of a ship, that it has never occurred, to join together the whole of the pieces of timber, which compose one complete "rib," so as to make it, as near as may be, what it would be, were it possible to get the whole in one piece.

The plan of dowelling one timber to the other is excellent, and as that provides against all movements but one, namely, their parting directly asunder, how simply it seems this completion of the whole might be effected by the application of plates on each side at their connection. The dotted lines represent the dowel at the junction of two timbers (in the centre.) A plate is shewn on one side, a similar one being supposed at the other. This might be made of good cast iron, 18 inches long, $\frac{5}{8}$ thick, 2 or 3 inches broad at the middle, 1 inch more at the ends, fastened *together* by a $\frac{3}{4}$ bolt at each end, and let in flush with the wood. This would thoroughly connect the ship from keel to gunwale, and would certainly render *one timber* for this purpose *infinitely more effective than two (though framed) at present.*



This plan adopted, each timber, being complete, would be left to perform its own ends; the fore and aft square bolts dispensed with, of course, as no framing would be necessary.

There may appear a difficulty to the shipwright in introducing the lower connection; it would be difficult to clinch the bolt of the lower (or floor) end on the plate; if it should be so, the plates might be put, in this instance, on the *outside* and *inside*, there would be plenty of room left on each side of them for the plank fastenings.

The advantages of this plan appear to me to be very important, and so to complete the strength of a ship, that I can hardly suppose her bottom would ever require caulking after being once effectually done.

A trifling difficulty may present itself, by supposing that these plates would not effect sufficient firmness in the timber to get it into its place: unless the plate was made larger, and fastened with two bolts at each end, (for which there seems to be no necessity;) perhaps this might be the case in heavy timbers; but if so, secure two together with cleats, and get them up together, removing the cleats when each timber is secured in its place by the ribbons.

As to the use of the enormous quantity of timbers employed in a ship's frame, (as it is called,) let any one explain in what way *one half*, or every other timber in the very bottom of the ship, acts beneficially! I maintain *that all the lower futtocks are useless.* I should like to hear it explained how these masses of timber act to any good purpose, when a ship takes the ground. I have said they are loose pieces of timber, as stout as the floors, introduced on each side the keel, between each floor, stopping short of the keel, and projecting above the floor-heads some two, three, or four feet, according to circumstances. A blow from

without is resisted by such timbers, much as it would be by *filling the same space with some pigs of ballast.* Any blow that comes upon the part of this timber which is contained between the floors, if it can be supposed to be so partial as to hit the planking outside, directly under the timbers, break the planks without hurting the floors on each side—the futtock would, I say, be of no more use in resisting this blow, than if a few pigs of ballast were placed in the room it occupied ! !

Next comes the short first futtock—the continuation of the floor ; this is generally a " grain-cut" piece of timber : it is an expensive, difficult piece of compass timber to obtain for very flat ships ; it has no connection with the floor, (of which it is, as I have said, a continuation,) and none with any other timber, except in the few frames which I have described, to which this piece is in a manner attached ; all the others are loose, unconnected pieces of timber. When a blow comes upon the outside of the ship in the way of this timber, the same remark is applicable to it, as to its means of resistance, that has been used when speaking of the lower futtock. It is also clear that in these timbers, as forming any connection between the bottom and the top of the ship, *they are of no use whatever.* These remarks might be extended to the timbering generally ; all which would only have this tendency, namely, to convince any impartial person that a really proper, well-connected frame, well bound together diagonally, with iron plates, from floors to gunwale, would be a thousand times more effective, if it even contained but *one half* the timbers at present used for that purpose ; and that, therefore, one half of *the expence,* or first cost and labour, of the timber now expended in the useless manner shewn above, may be saved ; the intermediate space filled up to a certain height, and caulked inside and out with the cheapest pine ; the whole of the ceiling of the twix't-decks omitted, as well as much of that below, leaving no shelter for vermin, or the accumulation of filth ; rats and mice, I verily believe, do nearly as much mischief in destroying a ship, as time itself !

Should such suggestions as will be found in this letter ever be adopted, it is to be hoped that the propriety of continuing the use of " tree-nails" may be well considered ; the abolishing of which would serve to increase very much the effectiveness of a smaller frame, which might clearly then be reduced in siding the difference between the diameter of the tree-nail and that of the bolt, and remain of the *same effective size.* It has always appeared to the writer of this, one of the most unaccountable absurdities, the application of this sort of fastening, which must have had its origin in motives of economy alone. On this head a " London ship-broker" could tell a pretty tale if he chose, but which, of course, he does not. I will venture, however, to say, that if any one

will attend an hour every day, for a week, any old ship breaking up, he will be of my opinion, *of the worse than inutility of tree-nails.* I once saw, in an old East India ship breaking up, some timbers that actually fell to pieces on the planking being taken off; they were literally cut asunder by the holes bored for tree-nails, and the fastenings of the lower decks. I remember seeing (and in a king's ship) tree-nails *cut through*, by diagonally boring for bolts for fastenings; bolts also *clenched upon the end of a tree-nail*, or, the same thing driven upon a ring from the outside upon the tree-nail's end: this was in the fir frigates. I have often imagined what a ridiculous thing the frame of a ship would appear if it could be seen entire, fairly exposed, with all the holes that are bored in it, completely riddled!! The practice of using copper bolts instead of tree-nails, in the East India Company's ships, from the port-sills down to the water-line, has fully, I believe, proved the utility and even the economy of the measure; the utility, in the fact that no ship has foundered since the practice commenced, (more than twenty years, I think;) and the economy, in the absence of repairs, and the consequent duration of the ships; many of which being doubled, are now in active employment, at an age which, within my recollection, saw them in the hands of the ship-breakers.

These altered modes in building are only named with a view of shewing that no extra expence need be incurred, in constituting a different and superior ship. The details are for other and more able heads to settle. Is it, however, to be borne? Is it to be credited, fifty years hence, that if such a ship as here supposed was built, the "New Register Book of Shipping" would not esteem her worthy registration in the first class; at least, their printed regulations lead to this inference.

Let us finish with the subject of expence in building better ships; which I have endeavoured to shew, need not be increased: but supposing, for the sake of argument, some increase to be necessary;—say that a ship, fit for the East India trade, is built, of 500 tons, costs now £10,000; let her cost in the hull £1000 more. This ship, outfit, and freight, we will suppose, in round numbers, to be in either case insured out and home, for £15,000 at £5 per cent, which costs £750. Suppose a new and secure method of ship-building adopted, and a vigilant superintendence established over their building, their continued efficiency, and their equipments, what would be the effect in respect to this sum of £750 paid for insurance? Fully one half of the amount of premium, it is well known, is at present paid, to reimburse the underwriters for fraudulent loss and insufficiency of ship's equipments; a considerable portion of the rest for the insufficiency of the ship herself, and the consequent loss of ship, and loss and damage of cargo. These facts are well known, and fully *proved*

by the *enormous profits* those make who do not insure at all; profits which, as your Kirkcaldy friends say, constitute the principal advantage of the Scotch companies who own the smacks in the London trade. These are complete proofs of how small a portion of the premium is really necessary to cover the "real bona fide losses" from perils of the sea, even by the present *defective* ships. I will, notwithstanding, suppose 3s. (which I think too much) remains, as the premium to be paid upon the ship in question, when improved, instead of £5. A difference of £525 would result, which would be so much saved under this head, on each voyage, to compensate any increased cost of ship; but as I feel quite assured that this increased cost would not be incurred, this saving would go in the first instance into the pockets of the owners, though the public would soon reap the advantage as a matter of course, as they would in the saving of the insurance on the cargoes. Let it not be said that the premium would not be thus reduced It would be, as a natural consequence; it could not be otherwise. And I will also assert, that the underwriters would be in a better situation, under such a system; have a more secure, and in every way a more advantageous business from their pursuits.

The right of the legislature to remove an evil of such magnitude, as the present mode of conducting the mercantile marine of this country has unquestionably become, has been already claimed. The principle is acted upon in a variety of instances, where, if no legislation existed, the cupidity of individuals, it is apprehended, might be injurious to the public welfare. There are various trades and manufactures that it has been found necessary to keep in subjection to regulations formed by the government. To name, however, one instance, will be sufficient, as it is so much to the purpose,—the building of houses in towns; to say nothing of the obligations of party walls, &c. *Safety* is an essential condition: *if the house is put together in a manner to endanger the public*, or if, from neglect or age, *it becomes in such dangerous state*, the evil is removable by law, and very properly. How much more reasonable is it to call upon the legislature to enact such laws to ensure good ships! the evil consequences of which, it has been attempted to shew, and, it is hoped, successfully; and before I finish, I hope also as clearly to shew the prodigious public advantages to be gained by the adoption of such regulations, as should effect the object contended for.

In respect to government interference, at present there is a great inconsistency. I believe, that, if an owner of a ship was to determine upon sending her to sea in a state that it was next to certain she must founder, that there is no law to prevent his so doing: of course, he could not recover insurance, if this state of his ship was known; but this cool, premeditated act of drowning master and crew is committed every day, and insurance upon

such ships recovered! Now, if the *owner himself* was about to go to sea in a ship of this description, and any one was to appear before a magistrate, and swear to the fact, I leave it to the lawyers, but I believe I am not incorrect in stating, that the owner would be stopped proceeding, upon the ground of wilful self-destruction; to prevent, in fact, a verdict of "felo de se" being recorded against him: and yet this man, for whom the law is so considerate, has perfect license to drown as many other people as he likes! The law should clearly be altered, and in a great measure reversed; the owner *should be made to go in such ship*; and a good riddance of such unfeeling beings it would be: this is only stated as matter of joke, but in reality it would be serving them right, for these unprincipled beings will cry out, after the manner of a certain Duke, that they have a clear right "to do what they like with their own;" and with some shew of reason they might probably say, "We don't insure, we ask no indemnity if our ships are lost, therefore we claim the right to send what ships to sea we think proper." To such it must be replied, *You have no right to put to such hazard the lives of the crew.*" It might, however, as I have said, be as well to concede to such heartless gentry, the permission to send what they like to sea, if they go themselves in the vessel, and man her with volunteers, who shall be informed "that the ship is about to proceed in defiance of the regulations government has thought right to make for their safety." These are supposed cases, and only introduced as in answer to anticipated objections, and to shew the utter fallacy of an owner of a ship supposing he has a right to set at defiance all considerations of safety and public opinion.

Thus, the evil being shewn to exist to an alarming extent, and it is most assuredly increasing, the cupidity of mankind urging on the deterioration of ships from year to year, the question is,—what is to be done?

I say, let Government take the matter in hand; let the Register Book be wholly abolished; and let the underwriter in future trust to a system, to be established by act of parliament, which shall wholly prevent any ship going to sea, except such only as are in a sound and proper state to perform their duties. This might surely be accomplished by something like the following scheme:—

Let a "Marine Board" be established in London; let every one connected with this board be so handsomely paid, as to render appointments to it objects with the most able persons conversant with shipping. Let no ship clear out without obtaining a certificate from this board, (represented at the outports by its surveyors.) Appoint three members to form this board, and to manage its affairs, at salaries to ensure the application of their entire time and attention: thus making it an object of the highest ambition, which its great importance (along with the salary) would constitute it. Let there be in London two surveyors, also well paid; the same at

Liverpool, and the principal sea-ports, (to visit neighbouring smaller ones;) and a secretary, also with a salary to ensure his devoted attention. The expenses of such an establishment might be met by a charge of, say 20s. for the certificate, which must be exhibited at the custom-house, before any ship can clear out—coasters paying only once a year. No one, I think, would complain of this charge; and, upon the whole, the expenses need not be greater than what will be found necessary to carry into effect the present "New Register Book." (A charge might also be made of 20s. per 100 tons upon all new ships.)

Let the act of parliament authorize the "Marine Board," upon the approval of the surveyor of the navy, the master-builders of his Majesty's yards, and such other public officers as might be thought proper, to lay down a system of ship-building, dividing them into a certain number of classes, and for every class specifying every piece of timber and metal that is to be put into them. This system would of course embrace all known improvements applicable to merchant-shipping; such especially as solidity of bottom,* and Mr. Lang's improvements thereon, and an effectual connection of the frame, with diagonal iron plates, as adopted in the steam-ship alluded to.

In addition to the strict superintendence these new ships would be subject to whilst building, let it be enacted, that any evasion of the act of parliament *should render null and void all insurance effected upon the ship.* These new ships should be kept in such efficient state, under the inspection of the "Marine Board," as long as they went to sea; the certificate for clearing being applied for on a ship entering out for loading, or, if going in ballast, three days before clearing.

The advantages will be here apparent, of so constructing a ship, that *no doubt can at any time exist as to her state,* upon the simplest inspection; which would be effected by avoiding the whole of the ceiling above the beams, and permitting below them only three strakes at each shift of timber;† thus leaving the ship

* It may perhaps be attended with difficulties and objections to construct the bottom of a merchant-ship completely solid, as done in men-of-war, but this may be accomplished in a great measure; and I intend in a future number to shew the manner in which nearly all the advantages may be gained, and the objections attending the plan avoided.

† That the ceiling as at present wrought is useless, may any day be proved by the inspection of a "slop ship." I would be bound to take it all out with a crow-bar! A diminished portion, however, of it, judiciously placed at the shifts, and thoroughly combined with the outside, might be made very available to strength. Only imagine the manner in which this waste of plank is permitted at present, when the "New Register Book," as one of its rules to promote improvement, says, "That at least *one half* of the outside fastenings shall go through the ceiling!" In the name of common sense, why not work the ceiling simultaneously with the outside planking, and let all be fastened together?

perfectly free for examination at all times; this, combined with the strict specification of all the parts that constitute the ship, it may be presumed, would go far to do away even with the *possibility* of corruption in this system of "surveillance."

As regards the ships at present in existence, let it be enacted, that after certain ages, to be settled according to their state, *they shall all be doubled*, and secured with riders inside, much the same as the new ships. This system of doubling, and tying together the present loose frame, may be considered to produce such effectual strength and safety, that the measure altogether would produce, as if by magic, an instantaneous change in the character of British shipping.

Under the guarantee of these arrangements, no book of reference would be required; the qualities of a British merchant-ship would be as much a matter of course as those of her men-of-war.

As an auxiliary to this board, but quite separate and independent of it, should be appointed by Lloyd's coffee-house two surveyors of their own, both sailors, (the insurance companies have I believe something of this kind,) whose sole business it should be to investigate all losses and averages that take place; never to be legally recoverable without their certificate, which they should not give if any information is withheld; they should have access to all papers and letters they might require, to fairly sift and investigate every claim made upon underwriters.

It is clear that the honourable and lucrative employments which would be created by the formation of such a board as I have suggested, should not be made objects of Government patronage; it would perhaps be difficult to suggest a better method than placing the whole in some degree in connection with Lloyd's; every appointment in it being made by a general ballot of its subscribers, the public insurance companies having also a voice therein.

It is saying a great deal to assert, that, under such regulations as above suggested, *all fraud in losses and averages would disappear;* but it would I think be difficult to deny, that something very near this desirable state of things would be the consequence. It is hardly necessary to say, that the "Marine Board" would have schedules made out, for a ship's equipment in her principal stores, and that especially a scale would be established for the anchors and cables, both as to *number, size, and weight.* And if, to all this, some regulations were devised to ensure more care in the selection of commanders and officers to merchant-ships, and a better means of enforcing good order in their crews, a regeneration would take place in this great and truly national branch of trade, that in its effect would be astonishing, and decrease the losses beyond what it is possible to form an estimate of—losses would almost disappear! It would reduce the premium of insurance to such a degree, that the saving in this head alone, on valuable

goods, would often *amount to more than the freight*: thus securing the best means of augmenting the carrying trade, by making it the *interest* of merchants of all countries to ship by English vessels. With some regulations like these, a British ship would visit all parts of the world with as well-acknowledged a guarantee of her superiority, as a British man-of-war does. Nobody in fact in any part of the globe, would embark either person or property under any other flag but that of Great Britain, when such conveyance was to be had. It may surprise many to be told, that this opinion of our ships is by no means general at present; American and French ships, that navigate distant voyages, are decidedly superior to British, generally, and so considered.) The character of a British ship should be the first in the world, not only in reality, but so acknowledged every where; and this will never be effected, but by some such decisive measure as this proposed. The interest, perhaps ultimately the very existence of the country, demands it; and it were well not to delay such a measure, which would have the effect instantaneously of placing the merchant shipping of the country upon such a stable foundation, *as would enable them to defy competition for ages to come.*

Let not the ignorant and selfish bullying of interested people, interfere with sound views of legislation in this matter; it is one of immense importance, and will not, whatever such people may say, in their dread of a superintendence being established over their proceedings, operate against ship-owners ultimately, (nor indeed at all,) if *they are honestly disposed*; on the contrary, it will most materially improve all such pursuits undertaken upon sound principles, and *fairly intended*, by preventing the (at present) overwhelming competition of those of a contrary character; it is from those only engaged in such operations as *wont bear investigation*, that the great cry will be made: heed them not, put them down, and *let the interest of the public* be the only consideration; it will have the effect of taking away taxes of a million a year, that press upon every one, and it will be attended with advantages in a political point of view incalculable!

It will be a proud day when a system is established of such excellence, that neither underwriter, merchant, nor passenger, in any part of the world, need any reference to register book, or any inquiry whatever, before he undertakes risk, or shipment, or passage, by a British ship! Suffice that she bears the flag of that great and truly nautical country, to assure every one of her excellence—the utter absence of the possibility of other than the utmost known perfection being found in her; and that almost the absence of fraud even is guaranteed by the country to which she belongs. That such a day may be near at hand, I am sure you, Mr. Editor, join with me in heartily wishing; and in the hopes that this letter may help to forward such event, I will conclude with only adding

this observation, that it is confidently hoped the liberties which have been taken, when speaking of the "Register Book of Shipping," may be taken in good part by the very respectable gentlemen whose names are connected with its management; for many of whom the writer has the most unfeigned regard and respect: their book, however, is of a public nature, and which they must expect therefore to be criticised; *if good, it will not suffer from such ordeal.* With many thanks, Mr. Editor, for your patience, and space, I subscribe myself,

Your obliged and humble servant,

February, 1836. MERCATOR.

REMARKS ON THE NAVIGATION OF THE RIVER DERWENT, *Van Diemen Land.*

IN addition to the information given in the Australian Directory* for vessels bound to Hobart Town, we quote the following extracts from the remarks of Captain C. H. Freemantle, late of H. M. ship Challenger:—

Proceeding for the Derwent River from the southward, with the wind from the westward, you should endeavour to get the weather shore or board, in order to make sure of fetching in, the winds being variable about the river's entrance. The shore may be approached close to, between Cape Frederick-Henry and the river. We sailed along it, keeping it distant from one mile and a quarter to one mile and a half, having no soundings with the hand-lead.

After passing the entrance, and having brought the D'Entrecasteaux's Channel open, if wishing a pilot, you may heave to, and if there are any at the pilot-station, which is on the western side of the channel, one will come off immediately; if not, take care to give both shores a good berth in working, until you get as high as Crawfish Point, off which there is a spit extending a quarter of a mile. When above this, you may stand within a moderate distance of the shore, on both sides; and when abreast the fort, which is situated on the south side of the anchorage, the harbour-master will come on board, and moor your ship.

Ships in general moor with half a cable each way: open hawse to the south-west, owing to the severe squalls which blow from that quarter. The bottom is stiff mud, and the depths off Hobart Town are from thirteen to seven fathoms and a half. Running up, the depths in the fairway are from thirteen to seventeen, and twenty-two fathoms.

Working up, tack sooner standing towards the south-west shore, than you do standing towards the north-east: the north-east shore is steep to; the south-west shoals rather quick in Blackman's Bay, from thirteen to seven and a half fathoms.

* Alluded to in a former page of this number.

After leaving the Derwent, and bound to the northward, you should endeavour to get an offing of forty or fifty miles, that advantage may be taken of any breezes which may blow, taking care always to be on that tack on which most northing can be made, as the currents generally set with the wind; the stronger the wind, the stronger the current. We were becalmed three days within forty-five miles of Cape Pillar, with it bearing north-west, with thick hazy weather, and rain at times, barom. 29·50, ther. 54°, the current setting to the southward twelve miles in twenty-four hours. On the 8th got a light wind from S.S.W. which continued between S.W. and S.E. until the 11th; it then shifted to the north, and commenced with light breezes, ending with a fresh gale, barometer falling gradually from 29·83 to 29·15. The wind continued from the northward until 1 P.M. on the 12th, when it shifted in a heavy squall from N.W. to S.W.; ship under maintopsail and foresail. The current during this breeze set to the southward one mile and a quarter per hour. From this until the 14th, the weather was fine; winds variable between the N.E. and N.W. points.

At 7 P.M. on the 14th, observed Port Jackson lighthouse N.W. by W. ten or eleven leagues. Saw lightning in the S.E., and in about ten minutes the ship was taken aback with a heavy squall from that quarter, there being no other warning than the lightning. It continued to blow with great violence from S.S.E. to S.W. for three hours. It then moderated, and became steady in the S.W.

From the information I received from several people acquainted with this coast, these squalls are prevalent; and on seeing lightning on the lee horizon, is a sure indication of having one from that quarter.

THE APPROACHING ECLIPSE OF THE SUN.

ALL the particulars of the great Solar Eclipse which will take place on the 15th of May, are detailed in the Nautical Almanac. Two designs are there given: the one representing the manner in which it will pass over the earth's surface, the other (which is the more immediately interesting to ourselves, and which we are enabled to present to our readers by the friendly attention of the Superintendant, Lieut. W. S. Stratford, R.N.) points out the phenomena which will be observable in our own country. As the moon's apparent diameter will be to that of the sun only as 74 to 79, total darkness will not be produced in any place, but the eclipse will be annular. If a line be drawn across Scotland from the middle of the isle of Mull to Abroath, the moon to all the places upon it will appear just to touch the lower part of the sun's disc, as in

fig. 1.* As we come further south, the moon will appear higher; and on the line from Malin Head, in Donegal, to Wooler, in Northumberland, the centres of the two discs will coincide so as to exhibit a regular ring of light as in fig. 2. When we reach the line from the south of Donegal Bay to Whitby, the moon will have ascended so as just to touch the upper part of the sun's disc, as in fig. 3. The unobscured part will be still greater when we reach the latitude of London, but even there the darkness will extend over very nearly $\frac{9}{10}$ths of the sun's diameter, as represented in fig. 4.

Fig. 1.

Fig. 2.

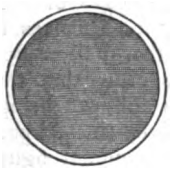


Fig. 3.

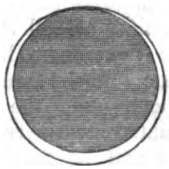
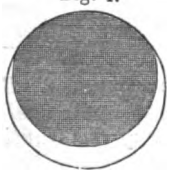


Fig. 4.



At the height of the eclipse a remarkable appearance will occur, which may be worth observing. The light which passes directly from the sun through any small openings, will form the images of luminous crescents. This depends upon a very common and well-known optical phenomenon. If a small hole be made through the window shutter, an inverted picture of all external objects is formed on the opposite wall of a darkened room. Now suppose this aperture to be a physical point, the rays coming from the sun, all converging to this point, will form a cone of light on the outside. A similar cone will be formed on the inside by the same rays after they have crossed at the aperture; and, consequently, if a screen be held perpendicularly to them, a circular luminous

* The crescents of light are drawn without any inclination, because the angles which they will make with the vertical, will vary in different places.

Eclipse begins . . .	May 15 d.	1 h.	51·2 min.	Greenwich Mean Time.
Greatest Phase	3		19·1	
Ends	4		39·1	

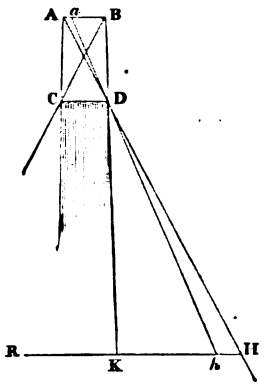
image will be formed on it. Let now a second physical point be situated close to the first, then another similar cone of light will be formed, so that the two, as they gradually enlarge, will gradually overlap each other. As the greatest distance of the two circumferences can never in any part exceed the distance of the two points from each other, the circles, when much extended, will no longer be distinguishable from each other, but will perceptibly form one round image. With a third, fourth, fifth point, the same effect will be produced; and at their separation from each other will not make any difference, it follows that if the aperture is of any figure, however irregular, the image will resemble it when the screen is near, but as the screen is removed, the angular parts at the edges of the image will be gradually rounded off till the outline becomes to the eye a regular curve. The experiment has hitherto been described as it usually takes place, but it must be clear that the roundness of the image depends upon the sun's full orb being circular; when the illuminated disc is reduced by the eclipse to a crescent, the image also will be formed of a similar figure. This will be curiously seen in the shade of a tree, between the leaves of which the sun's light may pass.

On Screening a Lighthouse. *By Lieut. Raper, R.N.*

To the Editor of the Nautical Magazine.

Sir.—In conversation with the hydrographer to the Admiralty, concerning the distance at which the screen interposed between the light of a lighthouse, and a danger to be avoided, should be placed from the light itself, it occurred to me that the question was capable of a very simple and concise investigation, which is here offered for the perusal of your readers, as matters relating to lighthouses are of consequence to the nautical world.

Since the light of a lighthouse is not a mere luminous point, but exhibits to the eye a visible diameter, the shadow cast by the screen is not strictly defined at the edges, but has a *penumbra* extending to a certain distance on both sides of the complete darkness. Since then the vessel can in no case lose sight of the light instantaneously, the object is to determine the distance of the screen, so that the change in the appearance of the light in a small interval of time, to a vessel in the neighbourhood of the danger, may be so distinct as not to be confounded with a gradual obscuration caused by the state of the atmosphere, nor to have any doubt that its total disappearance is owing to her having entered the forbidden ground.



Suppose AB the diameter of the light, CD the screen, R a rock; a vessel standing towards R across the line joining the rock and lighthouse, enters the penumbra at H, on crossing the line ADH, and the complete darkness at K, on crossing the line BDK; hence the light is gradually disappearing while she is going along HK.

Now the diameter AB of the light, and the distance of the rock being given in any proposed case, the line HK can be diminished only by moving CD along BK towards K, or from the light; that is, the distance HK depends on BD, or, which is the same thing, BD on HK, HK being the distance run by the vessel, must be *assumed*, and this assumption of distance must depend on the *velocity* which we assign to the vessel, and the *time* allowed for perceiving a visible change in the light; therefore KH, and consequently BD, or the solution of the question, depend entirely on practical considerations. We shall first get an expression for BD, and then make certain assumptions to adapt it to practice.

We may suppose, for simplicity, that the brilliancy of the light, or the quantity of light which strikes the eye, is proportional to the portion exposed by the vertical edge of the screen, and its decrease proportional to the quantity concealed by the edge of the screen in the same way. Also, we may suppose that a change in a light dimmed by distance and haze, which shall be conspicuous, cannot be less than one-third of the whole quantity of light. Take Aa equal to one-third of AB, and draw aDh, Hh will be one-third of HK. Now HK being small with respect to the whole distance BK, the angle KDH, and its equal ADB, will be small, and these angles will be therefore proportional to the lines which subtend them. Then, since ADB = KDH, we have

$$\text{sin. ADB} = \text{sin. KDH, or, } \frac{\text{AB}}{\text{AD}} = \frac{\text{HK}}{\text{DK}}, \text{ nearly;}$$

$$\text{hence } \frac{\frac{1}{3}\text{AB}}{\text{AD}} = \frac{\frac{1}{3}\text{HK}}{\text{DK}}, \text{ or, } \frac{\text{A}a}{\text{AD}} = \frac{\text{H}h}{\text{DK}},$$

or, since AD and BD are nearly equal, and DK nearly equal to BK,

$$\frac{\text{A}a}{\text{BD}} = \frac{\text{H}h}{\text{BK}}, \text{ hence BD} = \frac{1}{3}\frac{\text{AB} \cdot \text{BK}}{\text{H}h} \quad \ldots \quad (1)$$

or, putting x for BD, the distance of the screen required in feet, l for AB, the diameter of the light in feet and decimals; a for BK in miles; and tv for the space Hh, t being the time in fractions of an *hour*, and v the velocity in *miles*, or rate per hour, then

$$x = \tfrac{1}{3}\frac{al}{tv} \quad \ldots\ldots\ldots\ldots (2)$$

which is the formula for general reference.

Assume now that the vessel is going four knots, and that five minutes is the time allowed for perceiving the above change in the appearance of the light, by the loss of one-third of the whole quantity of light; and suppose, for example, that the diameter AB (or l) is 1·4 feet, and BK (or a) 7 miles; then

$$x = \tfrac{1}{3}\frac{1{\cdot}4 \times 7}{\frac{1}{12}\times 4} = \tfrac{1}{3}\frac{9{\cdot}8 \times 12}{4} = 9{\cdot}8 \text{ feet, the distance required.}$$

But a vessel will not, except when working to windward, cross the line BK with this velocity; hence two knots is perhaps as much as, or even more than, we ought to allow; moreover, five minutes is a long time to strain the eye in watching a light, and two minutes and a half would be a better assumption. We shall now have

$$x = \tfrac{1}{3}\frac{1{\cdot}4 \times 7}{\frac{1}{24}\times 2} = \tfrac{1}{3}\frac{9{\cdot}8 \times 24}{2} = 39{\cdot}2 \text{ feet.}$$

The screen therefore should not be put nearer than forty feet in this case, where the light is 1·4 feet diameter, and the danger seven miles distant.

HYDROGRAPHICAL NOTES MADE IN THE GULF OF CALIFORNIA.

By Mr. R. C. Allan, late of H.M.S. Conway.

Passage from San Blas to Mazatlan.

THE direct course and distance from Piedra Blanca de la Mar (which is 12 miles to the westward of San Blas) to Mazatlan, is N. 30° W. (true) 110 miles. The Conway was four days making this passage. The wind, for the most part, was light breezes from N.W., (which is the prevailing wind from the gulf,) with fine weather, and we experienced a current of about half a mile per hour to the southward. In making this passage, it is perhaps the best way to stand off, or to the westward on the starboard tack during the early part of the day, and in again in the latter part, as we found the wind hauled round more to the westward in the afternoon.

Passage from Mazatlan to Guaymas.

The average passage from Mazatlan to Guaymas is 10 days; the Conway did it in 8 days.

Tuesday, January 6th, 1835.—Sailed from Mazatlan at 8 p.m.

Saturday, 10*th*.—Made Farallon de San Ignacio, (a small rocky island about a mile and a half long,) having worked up on the east side of the gulf. Moderate winds and fine weather.

Sunday, 11*th*.—Wind fresh from N.N.W. Stood over to the western side of the gulf, and tacked off Isle St. Josè, which is about 15 miles in length. To the northward of St. Josè are two small islands, named Santa Crux and Don Diego: the former is about five miles in length, the latter two. The main land is high hereabout, and is a strange mixture of rugged hills and table-land. About 8 miles to the eastward of the north end of St. Josè lies a small white rocky islet, which is not inserted in the Spanish charts. A rocky ledge between St. Josè and the main land, and another between Santa Cruz and the main, were seen, but the ship was not sufficiently near to judge of their extent.

Monday, 12*th*.—Wind fresh from N.W. to W.N.W. Stood over to the eastern shore, and tacked off some *very* low land, situated in lat. 26° 52′ N. and long. W. (of San Blas 4° 16′ 33″) of Greenwich 109° 35′; no high land was to be seen behind it, but some very high in the E.N.E. Vessels must be cautious how they stand in here in the night time or in thick weather.

Tuesday 13*th*.—Light winds towards the evening. Stretched over to the Californian shore. The breadth of the gulf between the parallels of 26° and 27° is about 76 miles.

Wednesday, 14*th*.—Light winds from the S.E. with thick misty weather: at noon it cleared off, and we arrived at Guaymas at 5h. p.m.

CURRENTS OF THE OCEAN.

Extract of a Letter from B. A. Ancell, Esq. to the Secretary of the Admiralty.

Porlock, 14th April, 1836.

THE enclosed paper was picked up yesterday floating near this shore, in a wine bottle, at the bottom of which (inside) was a small quantity of lead sufficient to preserve its equilibrium, and to prevent the wind from having any influence. On the exterior, round the shoulder and the bottom, was a quantity of barnacles advanced in growth, which assisted in increasing its draught of water to nearly as high as the mouth, which was carefully stopped with cork and sealing-wax.

"Barque Sarah, of Newcastle, Capt. James Mickle, of Newcastle, Master, and J. Weatherley, of N. C., passenger.—This bottle, thrown overboard off the banks of Newfoundland, 29th May, 1835, in lat. 46° 2′ N. and long. 48° 10′ W. On outward-bound passage from Newcastle to Quebec."

The supposed track of this bottle completely coincides with those of three others from nearly the same latitude and longitude, and clearly shews that the surface water from the banks of Newfoundland eventually reaches the western shores of Great Britain.

Experiments made on board H. M. S. Terror with Perkins' Apparatus for Warming Ships, &c.

H. M. S. Terror, Chatham, March 23, 1836.

Sir,—I now, according to promise, send you the result of our hot-water experiments, and I may perhaps as well add a description of the apparatus.

The furnace is situated under the galley, on what was the lower deck, and is constructed of brick, within a four-feet tank (supplied for the purpose;) the space around it sheathed with lead and copper. The coils of pipe are independent of each other, and work on either side of the ship, ascending obliquely to the side, and passing up to the main-deck abreast of the furnace. The "flow pipe" turns aft at ten or twelve inches above the deck, supported over the water-way piece; runs through the cabins until it gets to the stern; then suddenly back at a three-inch bend to the fore-bulkhead, at right angles three feet towards amid ships, aft again to the stern; then to the sternpost (three inch bend) and back to foremast bulkhead, where it turns into the gun-room, and passing round it on each side, takes the course of the cants to the foremast cabin, where it returns, within three inches of the deck, by the water-way, which is coated with fearnought.

The length of pipe therefore between the furnace and the extreme bend in the cabin, is about 120 feet, at which distance, on the larboard or hottest pipe, the best course of experiments were made.

The external size of the pipe, which is of very pure wrought iron, is one inch diameter, with five-eighth inch bore. The expansion-tubes are placed just abaft the first bend coming from the furnace, and reach to the upper shelf-piece. In the event of the heat becoming too great in the furnace, the water is driven out of the coil, and fills the expansion-tube, which prevents the bursting of the apparatus.

This being the first trial of the kind on board of any vessel, becomes somewhat interesting, and, being successful, may probably supersede the use of stoves on board of large ships.

On the first day's trial the galley-fire, which is on the main deck, was also lighted, in order to assist the draught, and take off the damp air which was in the ship. The furnace was also very damp from fresh mortar, &c. On the second and subsequent trials, the lower furnace only was made use of, and the hatches over the funnel kept closed. The several openings were also kept closed, to prevent the access of cold air. The first temperatures taken were those on the "flow pipe," at the stern or extreme distance from the fire. After they exceeded 200 degrees, the general increase of diffused heat was registered as under the head of Cabin, Gun-room, Sick Bay, &c.

Edward Belcher.
Commander, R.N.

Report of the Temperature obtained by means of Perkins's Warming Tubes, as registered on board H. M. S. Terror, at Chatham, on Friday 18th March, 1836.

Times.	Larbd. Pipe.	Starbd. Pipe.	Cabin.	Gun Room.	Sick Bay.	Remarks, &c.
h. m. s.	°	°	°	°	°	
10 30 0	"	"	55	54·5	54·5	Fires lit—Atmosphere 55°.
46 0	62	"	"	"	"	
48 0	70	"	"	"	"	
50 0	80	"	"	"	"	
50 43	90	"	"	"	"	
51 28	100	"	"	"	"	
52 55	110	"	"	"	"	
55 45	120	"	"	"	"	
11 1 53	"	58·5	55·5	"	"	
2 2	130	"	"	"	"	
5 45	"	60	"	"	"	
7 50	140	"	"	"	"	
11 0	"	70	"	"	"	
16 10	150	"	"	"	"	Atmosphere 56°2.
17 25	"	80	"	"	"	
21 40	160	"	"	"	"	
22 30	"	90·0	"	"	"	
29 0	"	100·0	58·5	"	"	At this temperature Starboard
37 18	170	"	"	"	"	Thermom stood some time.
41 15	180	"	"	"	"	
44 12	190	"	"	"	"	
55 45	200	"	59·5	"	"	
12 3 15	"	110	61	"	"	
22 58	200	120	"	"	"	
30 0	198	"	61·5	"	"	
54 30	200	"	62·8	"	"	
1 10 0	210	"	64	"	"	
15 0	220	"	65	"	"	
19 0	"	120	"	"	"	
20 0	"	120	"	"	"	130°
20 30	"	"	"	"	"	150
21 0	"	"	"	"	"	160
21 45	"	"	65	"	"	180
25 29	"	130	"	"	"	190 On the flow.
36 0	"	140	65·2	"	"	
38 5	"	"	66·8	"	"	200
48 2	"	150	66·8	"	"	
2 0 0	"	"	67·6	66	67·5	210
30 0	"	"	70·8	68	69	
55 0	"	"	72·0	69	70·5	
3 30 0	"	"	73	70	72·5	
4 0 0	"	"	74·5	70	74	
30 0	"	"	76	70·5	74·5	
5 0 0	"	"	77·5	71	74·7	
30 0	"	"	77·5	71·5	74·7	
6 0 0	"	"	80	72	74·7	
30 0	"	"	83·5	72	74·7	
7 0 0	"	"	84·2	72	74·7	
30 0	"	"	84·5	72	74·5	
8 0 0	"	"	84·7	72	74	
30 0	"	"	85	72	74·2	

TABLE XXIX.

For reducing Ancient Roman Feet to English, and English Feet to Ancient Roman Feet.

1 Ancient Roman Foot = 0·96539170 English Foot.
1 English Foot = 1·03584897 Roman Foot.

Roman or Engl. Feet.	English Feet and Dec. parts.	Roman Feet and Dec. parts.	Roman or Engl. Feet.	English Feet and Dec. parts.	Roman Feet and Dec. parts.	Roman or Engl Feet.	English Feet and Dec. parts.	Roman Feet and Dec. parts.
1	0·965	1·036	40	38·616	41·434	79	76·266	81·832
2	1·931	2·072	41	39·581	42·470	80	77·231	82·868
3	2·896	3·108	42	40·546	43·506	81	78·197	83·904
4	3·862	4·143	43	41·512	44·542	82	79·162	84·940
5	4·827	5·179	44	42·477	45 577	83	80·128	85·975
6	5·792	6·215	45	43·443	46·613	84	81·093	87·011
7	6·758	7·251	46	44·408	47·649	85	82·058	88·047
8	7·723	8·287	47	45·373	48·685	86	83·024	89·083
9	8·689	9·323	48	46·339	49·721	87	83·989	90·119
10	9·654	10·358	49	47·304	50·757	88	84·954	91·155
11	10·619	11·394	50	48·270	51·792	89	85·920	92·191
12	11·585	12·430	51	49·235	52·828	90	86·885	93·226
13	12 550	13·466	52	50·200	53·864	91	87·851	94·262
14	13·515	14·502	53	51·166	54·900	92	88·816	95·298
15	14·481	15·538	54	52·131	55·936	93	89·781	96·334
16	15·446	16·574	55	53·097	56·972	94	90·747	97·370
17	16·412	17·609	56	54·062	58·008	95	91·712	98·406
18	17·377	18·645	57	55·027	59·043	96	92·678	99·442
19	18·342	19·681	58	55·993	60·079	97	93·643	100·477
20	19·308	20·717	59	56·958	61·115	98	94·608	101·513
21	20·273	21·753	60	57·924	62·151	99	95·574	102·549
22	21·239	22·789	61	58·889	63·187	100	96·539	103·585
23	22·204	23·825	62	59·854	64·223	150	144·809	155·377
24	23·169	24·860	63	60·820	65·258	200	193·078	207·170
25	24·135	25·896	64	61·785	66·294	250	241·348	258·962
26	25·100	26·932	65	62·750	67·330	300	289·618	310·755
27	26·066	27·968	66	63·716	68·366	350	337·887	362·547
28	27·031	29·004	67	64·681	69·401	400	386·157	414·340
29	27·996	30·040	68	65·647	70·438	450	434·426	466·132
30	28·962	31·075	69	66·612	71·474	500	482·696	517·925
31	29·927	32·111	70	67·577	72·509	550	530·965	569·717
32	30·893	33·147	71	68·543	73·545	600	579·235	621·509
33	31·858	34·183	72	69·508	74·581	650	627·505	673·302
34	32·823	35·219	73	70·474	75·617	700	675·774	725·094
35	33·789	36·255	74	71·439	76·653	750	724·044	776·887
36	34·754	37·291	75	72·404	77·689	800	772·313	828·679
37	35·719	38·326	76	73·370	78·725	850	820·583	880·472
38	36·685	39·362	77	74·335	79·760	900	868·853	932·264
39	37·650	40·398	78	75·301	80·796	1000	965·392	1035·849

New Lighthouses in the Mediterranean.

The following statement of three new lights on the coast of France, in the Mediterranean, is from the *National* paper of the 4th of April. In a future number we shall lay further particulars of them before our readers:—

Navigators are hereby informed, that, from the 1st of May next, three new lights will burn during the whole night, in the following points of the Mediterranean, viz.:—1. Cape Bearn, near Port-Vendres, Department of the Eastern Pyrenees. 2. Fort Brescou, at the mouth of the Herault. 3. Mount St. Loup, near Agde, Department of the Herault. The following notices will shew the position and character of these lights:—

Light of Cape Bearn. — A fixed light on Mount Bearn, 800 metres (2625 English feet) south-east of the entrance of Port-Vendres, in 42° 30′ 45″ latitude; and longitude 2° 37′, east of Greenwich.

It is 220 metres (722 English feet) above the level of the sea, and may be seen in fine weather at the distance of seven sea-leagues.

Light of Fort Brescou.—A small fixed light, on the bastion south-east of Fort Brescou, one sea league to E.S.E. of the mouth of the Herault, in lat. 43° 15′ 30″, and long. 3° 29′ 45″ east of Greenwich. This light is 18 metres (59 English feet) above the level of the sea; may be seen in fine weather at the distance of three sea leagues.

Light of Mount St. Loup (near Agde).—A revolving light, eclipsed, and appearing every minute, on Mount St. Loup, 5,250 metres (17,225 English feet) to the east of the mouth of the Herault, in lat. 43° 17′ 50″, and long. 3° 29′ 45″ east of Greenwich. 120 metres (394 English feet) above the surface of the sea, and visible in fine weather at a distance of nine sea leagues.

The eclipses will appear total only beyond the distance of four sea leagues.

A Cruise in the Levant.

To the Editor of the Nautical Magazine.

Athens, 29th Feb. 1836.

Sir,—As the movements of kings must always be an interesting subject, whether riding at the head of a victorious army through the empire of a foe, or simply travelling in pursuit of the arts or the relics of antiquity, I have ventured to take up my pen to inform you of the peregrination of His Majesty the King of Bavaria, and as I have observed nothing authentic in any paper or periodical on the subject, it may be as well to begin from the first setting out.

His majesty's frigate Portland, and the Medea, received orders to proceed to Ancona, to convey king Louis of Bavaria to Greece, in the latter end of November. The Portland was at Corfu, and received her orders by a special messenger overland; the latter by the steam-packet from England, so that the Portland had actually left Corfu on her way to Ancona two days prior to the Medea from Malta: but the Medea being propelled by steam, although having twice the distance to run, arrived at Ancona three days before the Portland; and his majesty at once decided on embarking in the Medea, which ship was elegantly fitted for his reception. To render his majesty's departure from Ancona as imposing as possible, it was arranged that he should embark first on board the Portland, and be towed out of the harbour by the Medea. This was done in gallant style, to the admiration of the assembled inhabitants, who thronged the mole and every elevated spot where a view of the proceedings could be obtained. On getting outside the mole, as it was growing dark, the Portland cast off, and, amidst the blaze of blue lights, his majesty shifted his standard to the Medea, when at seven P.M. (3d December,) the engines were put on at full speed, and in eighty-two hours his majesty found himself in the Piræus. Not a ripple disturbed the surface of the water the whole way; and at daylight of the 7th, when the king first beheld the shores of Attica, he exclaimed involuntarily, "It is a dream! surely it is all a dream!"

A messenger was now despatched to Athens, to inform king Otho of his august father's arrival; and the former shortly after, with a retinue, came on board the Medea. A most interesting and affecting scene now took place on the quarter-deck, in a struggle between the natural feelings of father and son, and those becoming the dignity of crowned heads. The former, however, predominated, and they simultaneously rushed to each others embrace. After a few moments, they assumed their wonted dignity; and when the introduction of ambassadors, &c., had taken place, the two kings retired below for a short time, to indulge in domestic conference, and then proceeded on shore together in state amidst the roar of cannon, the cheers of British seamen from the Medea's yards, and the continued *zetoes* of the assembled Greeks, who, with olive branches in their hands, crowded the shore of the Piræus, and strewed their emblems of peace before them. Grecian and Bavarian troops lined the road all the way to Athens, and a triumphal arch was raised in the principal street through which their majesties passed, and on which was inscribed in large Greek characters, "Long live king Louis, the chief of the Philhelenists!" An illumination followed in the evening, and joy and happiness beamed in every face.

The Medea remained in the Piræus in attendance on his majesty, and he made his first trip to Ægina, where, after being

much delighted with the ruins of the temple of Jupiter Pantolareus, the public school built by Capo d'Istria, &c., he left in the evening of the same day, and arrived at Athens about 9 o'clock, after landing in the midst of a blaze of fire-works from the ship.

It is not, perhaps, generally known that the king of Bavaria became the proprietor of the beautiful Ægina marbles sold at Rome some years ago, so that his majesty had doubly an interest in visiting this highly classical and enchanting spot. His second trip was to Cape Colonna, Port Mandri, Port Raphti, Scio, Smyrna, Alexandria Troas, the Castles of the Dardanelles, Bazica Bay, (whence he walked over the Trojan plains,) from thence inside of Ipsera, between Andros and Tinos, and into Port Gabriel in Andros. The poor natives at this port had no intimation of his approach, but on their learning that the father of their sovereign was in the barge approaching their shore, they instantly laid planks on the beach, and, taking the carpets from their houses, spread them for him to land upon, and rent the air with their zetoes. In the evening the houses were all illuminated, and even the very cliffs adjoining. The dance and song was kept up to a late hour, and at the end of each an enthusiastic Zetoe Bazileuse burst from all parties. At 10 o'clock the Medea threw up a shower of rockets, burnt blue lights, and gave them three hearty British cheers; after which, the band proceeded in a boat close to the shore, and played the Greek national anthem and other airs. Chevalier Miez, his majesty's favourite minister, went in the boat, and, silence being obtained, thanked the people in an appropriate speech for their loyalty, in the name of the king. They were highly delighted, and one of the principal natives made a very enthusiastic and simply eloquent speech in return; after which, another burst of zetoes was heard, and the boat returned on board.

The next morning, the Medea proceeded a little way along the coast to the ancient Æopolis, where, after his majesty had examined two beautiful statues lately dug up, the ship proceeded to Negropont, (the ancient Chalcis,) thence to Eretrea, Marathon, and back to the Piræus, having expended ten days in this interesting tour. His next trip was to Milo, Santaren, Amaphi, Scio, Naxos, Syra, Tenos, Delos, Syra again, Paros and Milo again, Hydra, Spetzia, and Nauplia. From the latter he proceeded to Argos, Mycene, and Corinth, by land, and the Medea went round to Kalamaka, (seven miles from Corinth,) and took him on board again; then he proceeded to Megara, Eleusis, Munichia, Phalerum, and into the Piræus, having expended fifteen days in this interesting cruise.

The Medea embarked his majesty at 9 P.M. of the 8th, and lights having placed on the pillars at the entrance of the Piræus,

she proceeded to sea amidst a blaze of blue lights and illuminations, and arrived at Milo at daylight the following morning. Here the people crowded the shores, waved olive branches, fired petraroes, and rent the air with their zetoes, all of which was returned by the king's gracious bows and smiles, and three hearty cheers from the crew of the Medea. But his majesty did not land, as the excavating party had not arrived from Nauplia, so he proceeded from Santaren passing between Argentara and Milo, and arrived at this interesting island at five o'clock in the evening, against a strong head wind, to the astonishment of the natives, who had never before beheld a steam-vessel or a crowned head.

However, both had been expected, for, on the Medea approaching the first town, thousands of persons were observed crowded on the housetops, precipices, &c., petraroes were fired, and a continual cheering fell on the ear like the rushing of a tempest through the forest. The cheers were returned by the crew of the Medea, and the ship glided by the town into the circle of the immense crater which forms the habour, and was shortly at anchor on the only spot where there is bottom in less tham one hundred to one hundred and thirty fathoms, under the end of an island in the middle of the crater, which rose above the bosom of the waters four hundred years before the times of our Saviour, and close to two other islands, one of which rose in 1573, and the other in 1707. It was too late for the king to land, but all the houses of both towns and every village was brilliantly illuminated. After his majesty had dined, a shower of rockets and blaze of blue lights were exhibited from the Medea. In the morning the anchor was weighed, and the ship proceeded towards the town. On approaching it, the governor, consuls, and principal authorities came on board to welcome the king.

This town is situated on the brink of a precipice one thousand feet high, at the foot of which the merchant vessels lie moored to a chain extending from two projecting points, (there being no bottom with less than one hundred fathoms.) A zigzag ascent is cut in the face of this precipice, which is variegated with alternate strata of lava, ashes, pumice, scoriæ, bazalt, &c. To see the people in the Greek costume descending the path with olive branches in their hands, the thousands perched like crows on the house-tops, and brink of the stupendous cliffs which hung perpendicularly over the mastheads, to hear the continued roar of the zetoes, the thunder of the merchant-ships' guns echoing from all sides, the Greek sailors on the yards of the surrounding boats—in short, the *tout ensemble* was such as to convey to the spectator more the idea of a vision of the mind than a splendid reality. It is impossible for words to describe well so romantic and unusual a scene. On the king's arrival near the summit, he

was met by the heads of the church in their robes, who proceeded before him chanting a hymn. After he had visited the church, and the governor's and consul's houses, he again descended the face of the precipice, and re-embarked amidst a continued cheer and the firing of cannon. A vast number of boats surrounded the ship, filled with well-dressed people, who waved their caps and scarfs, and exerted their lungs, until the cheers were drowned in the noise of the vessel's paddles, as she receded from the scene of gaiety.

"Off off, said the stranger, off off and away,
And away flew the light bark o'er the dark blue sea.

On the king's landing again on the south side of the island, to visit some ancient tombs, the enthusiasm of the people was unbounded; they rushed into the surf breast-high, seized the barge containing his majesty, and hauled her on the beach high and dry, and, on his re-embarking, some had actually to swim back to the shore.

At Amaphi the same enthusiasm prevailed, also at Naxos, Syra, Paros, Spetzia, and Nauplia, but not in the latter place with such a genuine burst of feeling, which may be accounted for by the greater intercourse they have with the world, for Santaren and Amaphi appear very primitive places; the former produces a rich wine like Constantia, which I think would be much esteemed in England.

At Syra the Medea and Portland again met, the latter having king Otho on board. King Louis dined with his son on the first day of his arrival; and on the following, king Otho dined on board the Medea. His majesty rode in a carriage all the way from Nauplia to Kalamaka, the first time that a carriage had ever passed that way, the road having been but recently made. In this last cruise his majesty was on board fifteen days, and, on leaving, expressed himself highly pleased, thanked the captain and officers, and declared he should like to go round the world in the Medea. She averaged ten knots per hour the whole cruise, although strong head winds were experienced most of the time. Since the king has been on board, (altogether thirty days,) she has gone over more than 2,200 nautical miles, and will have completed upwards of 3,000 miles on her arrival at Ancona, which will be about the end of March.

Your constant reader,

TIPHYS.

GREENWICH AND CHELSEA.

"Otia si tollas tollitur omne malum."

To the Governors of Greenwich and Chelsea Hospitals.

GENTLEMEN,—The object of this letter is to recommend that some easy employment be found for those old soldiers and sailors who

may desire, and are capable of it, in the great national asylums over which you respectively preside.

There are old men who may not desire instruction, but all love to be amused; and we know that the blind, even the old blind, find a solace in the work of their hands; why therefore should not old soldiers and sailors find amusement in an easy and voluntary occupation?

Veterans of the army or navy are not, I believe, always ready to receive suggestions affecting themselves, especially if these should have the appearance of being, as the phrase is, "new fangled;" and doubtless the opinions of the experienced are not to be despised; but, without further preface, let us hope that the proposal to establish a kind of Rigging-loft in Greenwich Hospital, and a work-shop at Chelsea, will be favourably received by those who have the power to carry it into execution.

Whatever may be said of the old soldier making baskets, or the old sailor working up junk, is of little importance, provided their condition be essentially improved by it; and surely it is reasonable to suppose that the "blue jacket" who has not lost his hands would be much happier when employed in stropping blocks, or making mats, wads, or swabs, than when he is idle; and there is as little doubt that the red coat's work-room, as well as the rigging-loft, would present scenes of cheerfulness and rational contentment, such as the bench or the beer-shop never displayed.

Moreover, if a few additional pence were to be earned, would not the nation become the first purchaser of her veteran's labour? for, who so worthy of their country's reward as those whose best years have been passed in their country's service?

England, not more liberally than wisely, provides a peaceful asylum for those who have defended her in war. A grateful country forgets not her protectors, who have survived "the battle and the breeze;" but something more than food and raiment is required by the people of a great nation, and we know that these (blessings, as they are) do not constitute all the requisites of a rational existence, such an existence as a well-directed, active, and christian mind would desire to enjoy.

Experience teaches us that those who have led a busy and useful life, find neither comfort nor happiness in an unemployed state; and the maxim is particularly applicable to those who have not the resources of education for their amusement. Labour, then, is not decreed in vain; and he who escapes from the duty of such exertion as he may be capable of, secures as little happiness as that man who quits his country in order to get rid of himself.

What condition of life is there that does not demonstrate the absolute necessity of occupation? and why, therefore, should our old seamen and soldiers be exempted from a rule which is applied with so much advantage to the aged in our own dwellings? Will

not the pleasure-boat glide down the stream to destruction, unless the oar be exerted to prevent her?

The veteran may have lost an arm, but that is no reason why the other should not be employed; indeed, were the principle of non-occupation rigidly followed out, both mind and body would be paralyzed; in a word, as "yarns" may be spun with the hands, in conjunction with those of the head, the due occupation of both would tend to keep the body healthy, and the mind in a cheerful state, and would shed a happy influence over the last years of those whom it is not less the duty than the desire of their country to benefit and protect.

To you, gentlemen, as governors, and consequently the legitimate sources from which any alteration in the asylums over which you preside should emanate, these sentiments are addressed, by

Your very humble servant, J.

P.S. It could scarcely be termed an innovation, were the old warriors allowed the comfort of wearing out their remaining years in *trousers*.

Report of the Pilotage Committee.

In our last number we commenced an outline of the proposed alterations in the Laws and Regulations relating to Pilotage, which we now think will be more satisfactory to our readers to have in the words of those who framed the Report. One of the provisions relating to steam-boats, however, appears to us so important, that, as it will eventually pass into law, we shall depart from the order of the Report, and give it first, as it cannot be known too soon. It runs as follows:—

Proposed Regulations for the Navigation of Steam Vessels.

1. In the Thames, and in all the rivers and channels of the United Kingdom, and in all cases of wind, weather, and tide, steam vessels are to endeavour to keep on that side of the river or channel which lies on their starboard hand.

2. When two steam vessels are standing in contrary or nearly contrary directions, if their courses should lead them near each other, each vessel shall keep towards the starboard side of the river or channel, and thus leave each other on the larboard hand.

3. Whenever a steam vessel may have to meet or to cross the course of a sailing vessel, or of a rowing boat, the steamer shall in all cases yield to the sailing or rowing vessel, whatever may be the state of the wind, weather, or tide.

4. In passing any small rowing or sailing boat, every steam vessel shall, if necessary, slacken or stop her paddles, so as not only to prevent the danger of too near an approach, but even so as to avoid giving them any just cause of alarm.

5. Although a vessel propelled by steam, in any of the four above cases, may also have had recourse to the assistance of her

sails, this circumstance shall in no wise alter the foregoing restrictions; for otherwise she would only have to hoist some small sail to evade them.

6. All these regulations shall be equally in force at night as well as by day. And for their more effective execution at night, every steam vessel, when in pilotage water, shall carry between sun-set and sun-rise three sufficiently strong lights, in lanterns, so as to be seen in all directions, and attached to a yard which must be kept square, and raised at least six feet above the tops of the paddle-boxes; this yard may be attached to the mast, or otherwise raised to the requisite height above the vessel's bow for that purpose.

7. These three lights shall be arranged in the following manner:—One light on each yard arm at the distince of six feet from the mast, that is, twelve feet apart; and on the larboard yard arm one additional light, which shall be placed horizontally with respect to the other light, or vertically under it, according to the following conditions:

(1.) All steam vessels which may be coming up any river or channel, shall show the additional light three feet directly under the light at the larboard yard arm, viz.—

(2.) All steam vessels which may be going down any river or channel, shall show the additional light at the same height as the two other lights, and at the distance of three feet inside of the larboard light, or half-way between it and the mast, viz.—

8. For any infraction of the foregoing regulations, a fine, varying according to the culpability of the offender, but not exceeding five pounds, should be summarily levied upon the party; and, as the only means of making those regulations effectual, one-half of the fine should be payable to the common informer.

The Report then thus proceeds, after mentioning the results of various inquiries made by the Committee.

Having thus noticed those branches of the subject which appeared to require particular consideration, we now proceed to submit to your Majesty the outline of a general Act of Parliament, adapted to extend to all parts of the United Kingdom, which we recommend for the adoption of the Legislature.

We have endeavoured to draw it up with conciseness and clearness, rejecting all local provisions and temporary enactments; and as the class of persons for whose guidance and government it is framed, are little acquainted with legal terms, we would strongly urge the expediency of freeing it, as much as possible, from legal technicalities and verbal redundancies.

The clauses will explain *seriatim* the various provisions which we recommend, but we deem it right to point out briefly the principal alterations which are proposed.

The provisions of the three first clauses have regard to the

previous recommendation, that all existing rates and regulations of Pilotage, whether established by Act of Parliament or by-laws, should be brought under the revision of the Corporation of Trinity House of Deptford Strond, and that no rate or bye-law should in future be made or altered without the sanction of that Corporation. As this plan necessarily involves the repeal of the present Act, 6 Geo. IV., c. 125, an exception is made in favour of the 20th section, which provides for the compensation to be made by the Lower Book Pilots of the Cinque Ports to those of the Upper Book, in return for certain privileges conceded to them by the latter, who had possessed them exclusively previous to the passing of that Act. There are now only seven Pilots remaining who are entitled to this allowance, and we have therefore thought it better not to load a permanent Act of Parliament with a provision of a temporary nature.

No. 4 and 6. These clauses extend the power of the said Trinity House to appoint Sub-Commissioners of Pilotage. At present they possess that privilege in all parts of England for the regulation of which no local enactments have been made; but we consider it expedient to extend their jurisdiction to all parts of the United Kingdom in similar circumstances, to prevent the future introduction of separate local Acts.

No. 5 embodies our previous recommendation that a power should be vested in the Trinity House of Deptford Strond to hear and determine all matters of complaint made by or against Cinque-Port Pilots, leaving to the complainant the option of bringing the case before that body or the Court of Lodemanage.

No. 6 provides that the powers given to the Sub-Commissioners in the outports should be extended, and that they should have the same authority in all matters of Pilotage as is now possessed by any local body.

No. 8. That the power of appointing Sub-Commissioners for the government of Pilots should be extended to the Trinity House of Leith, and to the Corporation of Bristol.

Complaints have been made that many parts of the coast of Scotland are inadequately supplied with Pilots. The jurisdiction of the Corporation of Bristol extends to all ports and places in the Bristol Channel to the eastward of Lundy Island. Since these privileges were conferred, many ports in that Channel have greatly increased in trade, such as Swansea, Bridgewater, Cardiff, and Newport. The just request of the trade of these ports is, that they may be made independent of the Bristol establishment, as they represent that they have a commerce fully equal to support one of their own. Great care, however, must be taken by the local authorities in that case to guard against the inconvenience which may arise from different sets of Pilots, belonging to those several ports, cruising on the same ground; for there will always be great difficulty, in the case of ships arriving at night, to distinguish to which port they are bound, and, more particularly in bad weather, it may tend to check the zeal of the Pilot to find that the first on board is not sure of the employment.

(To be continued.)

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

A Tour round Ireland, through the Sea-coast Counties, in the Autumn of 1835. By John Barrow, Esq. Murray.

"Described in a series of letters," might have been added to the title-page of this work by the author, and we might add, "written in an agreeable and pleasant style." That Mr. Barrow makes much of the relaxation allowed him from his official duties at the admiralty, we have already had ample proof in the shape of "Excursions to the North of Europe" and "a Visit to Iceland," and, now that there is a fair prospect of the most convenient means of intercourse between different parts of the world, being established by railroads, it is difficult to foretell where the travelling propensities of our author may not lead him, or what celebrated place, a sketch of which he may have made in his juvenile years, he may not contrive to see in its reality. Mr. Barrow's descriptions are lively and interesting, and he relates his adventures in that easy and familiar style which the medium of letters so readily admits. Our own limits will not, however, allow us to follow him closely, and we must content ourselves with merely stating that he visits the extreme northern, western, and southern points of Ireland, and re-embarks at Dublin, having previously entered the country at Belfast.

It is scarcely possible to think of Ireland at the present moment without the risk of becoming political,—that ill-fated country where

"Discord, dire sister of the slaught'ring power,"

yet holds her ruthless sway—and as we hate politics as *cordially* as our author, we shall consider this as another pretext for not going with Mr. Barrow to the numerous "show places" which he visits, or entering into the reasons why "*there is no other country on the face of the earth where such extreme misery prevails as in Ireland!*" Of this we are quite certain, that where ignorance and idleness prevail, superstition and violence are to be found. The present day, however, is "big with the fate" of our sister isle; let us hope that that fate will be what every friend to this country desires, that the good effects of instruction, occupation, and an intercourse with England will, before long, dispel those shades of ignorant barbarism which yet hang over the fairest parts of Ireland.

A Descriptive and Historical Account of China. By Hugh Murray, F.R.S.E., &c. Edinburgh.

The second volume of this interesting work has appeared, forming the XVIIIth of the Edinburgh Cabinet Library.

Peter Parley's Tales of the Sea. Tegg, Cheapside.

Assuredly the rising generation of sailors must be considered, as well as those who are already wandering about that ocean of which Peter Parley tells so many fine tales to his wondering little readers, more especially as England's right arm is her navy. Parley's Tales, (although we observe he is more accustomed to the land than the sea,) are both as instructive and amusing as might be expected; we hope, however, in his next edition, that he will connect the name of our countryman Dillon, as it should be, with the story of La Peyrouse. The vessels sent out by France did not succeed in finding him, and it was not till 1827 that remains of the vessels were found by Dillon, who, it is well known, was rewarded by the French government for his discovery.

NARATIVE OF A JOURNEY FROM LIMA TO PARA, across the Andes and down the Amazon, &c. By Lieutenant W. Smyth and Mr. F. Low, R.N. late of H.M.S. Samarang. Murray.

At present we can only announce the appearance of this work, as we did (more than a year ago) the intention of Lieut. Smyth to undertake his very interesting journey.* Indeed, we even spoke of the preparations for the magnificent panorama of the once happy Lima, the city where, in the golden age of the old Spaniards, pleasure held her court, wealth and ease were the attendants, enjoyment was the only business, and no evil was dreamt of, but an earthquake! We long since spoke of that panorama,† where now, by the aid of Mr. Burford's inimitable art, those who have known the "Ciudad de los Reyes," may contemplate her fallen state, free from political strife, and dwell on the reflections of her by-gone splendour.

We shall take an opportunity of returning to Lieut. Smyth's work in our next, and in the mean time recommend it to those who are seeking for information on a valuable portion of South America which as yet is but little known.

AN APPEAL TO THE BRITISH NATION on behalf of the Mercantile Marine. By Henry Masterman Marshall, Commander R.N.

A pamphlet of a few pages, on a subject about which many a page has yet to be filled. We have repeatedly taken it up, and intend doing so till we see it in the pages of the House of Commons committee reports. At present we have no space to spare for the consideration of this "Appeal," but we have expressed our opinion that local asylums are wanted for seamen in every seaport of note in the united kingdom. When shall we see this subject grappled by some master-mind?

NAUTICAL MAGAZINE.—We are glad to find that our friends in the United States have set up a periodical of the same nature as our own. We shall no doubt benefit by the information, to be derived from the pages of a work which bears the motto "*Tam Minervâ quam Marte.*" We wish them all the success they deserve.

GAS GENERATOR.—A Mr. Hutchison has taken out a patent for a machine for generating gas for the use of shipping. We shall say more of it in our next.

THE ROYAL NAVAL COLLEGE,—formerly the Naval Academy, an establishment which has existed in this dock-yard from the year 1729, is to be broken up in June next, the admiralty having refused to admit any more young gentlemen as students; and all at present in the course of their studies, will be apportioned to the different ships in commission. We have used the term broken up, but it is to be hoped this is not to be done in the full acceptance of the words, for though most officers have complained that the system, as hitherto pursued, has not been the most useful, yet it is as fully acknowledged, that scientific attainments, such as can be obtained only through the instructions of men of high mathematical knowledge, are absolute necessary qualifications for lieutenants and superior officers, and that therefore such instructions should be

* See pages 117, 373, 561 of our last vol.

† We advise the admirers of Lima (and who is not one, that has ever visited that delightful city,) to go and see this splendid panorama in Leicester Square. The whole effect is the finest of the kind we have ever witnessed.

given to young men, after they have nearly completed their servitude as midshipmen, at which time they will be of an age to understand, and will have had practical experience of the utility and value of the theories then to be taught them. An establishment, moreover, must necessarily be in existence, to examine young gentlemen before they are qualified to be lieutenants; also, into the qualifications of persons desirous to be naval schoolmasters; and it should not be forgotten that a solidly grounded mathematical course of studies is requisite for our future naval architects. An establishment of some sort, and we hope to embrace these objects, must still be kept up.—*Hants. Tel.*

Mouth of the Danube.

A correspondent of the "Times" writes as follows:—

"*Constantinople, March* 2.

"I mentioned in a former letter, that the interdiction made by the treaty of Adrianople, to all nations, of forming establishments of any description on the islands at the mouth of the Danube, or on its banks, within two leagues of the river, had forced the directors of the Danube Steam Company to abandon the plan of erecting their storehouses for coals, for the convenience of the steamers which are to ply between Constantinople and Galatz, Galatz and Trebisond, &c. This company has lately called the attention of the Austrian Government to the existence of a circumstance of a far more serious nature, and one which, if not obviated, must ere long render the navigation from the Black Sea to the Danube totally impracticable.

"The two banks of the Soolena branch of the Danube, the only one navigable for large vessels, have, it is notorious, been occupied by Russia in virtue of one of her last treaties with the Porte. Notwithstanding the proverbial improvidence of the Turkish Government, when Turkey was yet possessor of this mouth of the river, the local authority remedied the impediment arising to its navigation from the gradual accumulation of sands, by straitening its bed by means of palisades, and by cleansing it occasionally with iron drags purposely kept on the spot. Ever since the occupation of the banks of the river by Russia, the employment of these means has been abandoned. The consequence has naturally been, that the depth of its channel, which under the Ottoman domination averaged 12 feet, is already reduced to eight. The reports made by different individuals acquainted with the hydrostatics of the country concur in stating that, should matters be left in the present state, an impenetrable bar will shortly be formed at the mouth of this river. Russia will thus add to her important possessions that of an iron gate between the Danube and the Euxine."

Steam Navigation of the Danube.

The following account of the steam-vessels on the Danube, from the "Times," is originally from the *Journal des Débats.*

"Germany has taken no small part in the march of real improvement which has of late been adopted by the most civilized states. She has entered the lists with England, the United States, and France. She has been the first in Europe to form a railroad on an extended scale. At the present moment these railroads have become the fashion in Germany, or rather a species of mania; they have projected as many as we have, and have commenced more. Prussia and Austria are vieing with each other in the establishment of manufactures, and improvement of the various communications. Prussia has now her paper-money as well as the United States.

"Austria, aware that the Danube, the largest river of Western Europe, was confined for the greatest part of its course to the Austrian territory, and that it was also the direct line to Constantinople, has decided upon establishing

a regular communication from it by means of steam-boats. This may be considered in the light of a protest (under a commercial form) against the invasion of the mouth of the Danube by Russia. A grand line of communication is about to be commenced between Vienna and Smyrna, *vid* Constantinople, another from Vienna to Trebisonde. Thus it will be seen that the French Government is not the only power which has adopted measures for securing regular communications through the Mediterranean Sea.

"The navigation from Presburg to Smyrna commenced upon the 18th February. It has been organized in the following manner:—

"The steamer the Pannonia, of 36-horse power, continues to perform the passage between Presburg and Pest.

"The steamer the Zriny, of 80-horse power, will be employed for the regular communication between Pest and Drenhova.

"The vessel Nador, of 42-horse power, will be finished about the end of April, when it will commence regular voyages between Presburg and Drenhova, communicating also with Pest, Semlin, and the stations near Weischirchen.

"The passage from Drenhova to Skela-Cladova, beyond the station of the Porte-de-Fer, will be performed by means of large and serviceable boats with oars between Drenhovah and Orsova; and by land for a distance of four leagues between Orsova and Skela-Cladova. Persons of confidence appointed by the new Administration will render every assistance to travellers. Formerly, the steam-boat from Pest proceeded no further than Moldavia. By extending its course to Drenhovah, passengers will be saved a great deal of trouble and annoyance.

"The steam-boat Argo, of 50-horse power, performs the voyage between Skela-Cladova and Gallatz, but only communicating with the left bank of the Danube (Wallachia,) so as to remain constantly on that station, being specially intended for maintaining the commercial intercourse between the Austrian states and Moldavia and Wallachia.

"A new steam-boat, the Francis I., is now building; it will be of 60-horse power, and is intended for the navigation of the Danube; it will probably make its first appearance in May: by it, a regular communication will be established between Cladova and Hirsova, as also with the right bank of the Danube (Turkey.) It will be connected at Hirsova with the steamer Ferdinand I. of 100-horse power, proceeding from Constantinople, and which is to commence its voyages in the spring.

"The exact period of opening the navigation between Hirsova and Constantinople will be subsequently announced.

"The voyages between Constantinople and Smyrna take place regularly every week by the steamer, the Maria-Dorothea, of 70-horse power. The Administration has taken every precaution to prevent a renewal of those annoyances which occurred in the navigation of the Danube during the last year, and which are unavoidable in every new enterprise.

"The Ferdinand I. is to leave the port of Trieste (where it was built) on the 15th of March, to proceed to Constantinople, touching at the Pireus, Syra, and Smyrna. This is a vessel of 310 tons, and of 100-horse power; its length 140 feet, constructed after the best English models; the machinery has been furnished by Bolton and Watt.

"Thus the navigation from Presburg to Smyrna will employ, during the present year, no less than seven steam-vessels:—Upon the Upper Danube, between Presburg and Drenhovah, the Pannonia, the Zriny, the Nador; upon the Danube, between Skela-Cladova, Gallatz, and Hirsova, the Argus, the Francis I.; from Constantinople to Hirsova, the Ferdinand I.; from Smyrna to Constantinople, the Maria-Dorothea."

Accounts from Vienna of the 9th inst. contain the following:—"The report of the general meeting of the Steam Navigation Company of this Danube, published a few days since, furnishes a satisfactory proof that the European enterprise is in a flourishing state. Baron Ottenfelt, formerly ambassador at Constantinople, attended the meeting. A resolution was passed to issue 600 new shares, which were instantly divided between the original shareholders; additional principles were agreed to, relative to insurances. The meeting experienced considerable satisfaction in learning that Prince Metternich had entered into fresh negotiations with the Russian authorities, in order to shorten the quarantine at Odessa, and it was expected that the Russian government would allow (as in the Black Sea) a free passage to all merchandise provided with a certificate from the Russian ambassador at Vienna. Amongst the members of the Society are comprised the names of their majesties the kings of Wurtemberg and Bavaria, the archdukes Palatine and Ferdinand of Est, duke Ferdinand of Saxe-Gotha, princes Metternich and Esterhazy, lord Cowley, formerly ambassador at Vienna, sir Robert Gordon," &c.

NAVY ESTIMATES.—*House of Commons, April —.*

Mr. Buckingham stated, that through information he had received from Portsmouth, he was led to believe that the act lately passed for encouraging voluntary enlistment had been highly successful, and that competent seamen now very readily entered into the naval service. He wished to know if that statement were well founded.

Mr. C. Wood assured him that it was. Seamen for the navy were never so rapidly or so readily obtained as during the last fortnight; even boatmen and fishermen were willing to enter.

The house then resolved itself into a committee of supply, and proceeded with the navy estimates, and the following votes were agreed to:—118,214*l.* for the salaries of officers and the naval establishments in Great Britain; 21,826*l.* for the salaries of officers and naval establishments abroad; 24,335*l.* for the wages of labourers employed in the naval establishments abroad.

The next vote was 71,431*l.* for the purchase of naval stores.

Mr. G. F. Young objected to the manner in which the timber stores for the navy were supplied, contending that they ought to be contracted for, instead of being made the subject of private arrangement amongst parties possessing influence with the Admiralty. The hon. member complained of the expenditure of stores, owing to the experiments now going forward in naval architecture under the direction of Captain Symonds, and he further thought that minute details ought to be laid before the house respecting every sum which they were called on to vote.

Mr. C. Wood defended the vote, contending that no more than the market price had in any case been given for timber; and as to Captain Symonds, he would say, that persons who were by profession competent to form an opinion approved highly of the experiments in naval architecture made by that gallant officer.

Mr. Young would maintain that the nation had been put to more expense in altering Captain Symonds's ships than had ever previously been known in the case of any other surveyor.

After a few words from Mr. C. Wood and Mr. Roebuck,

Sir C. Adam said that he could confirm all that his hon. friend the Secretary for the Admiralty had advanced respecting the excellency of the present surveyor's vessels.

Sir G. Clerk, while he admitted Captain Symonds's merits, objected to the

system of making a naval officer Surveyor of the Navy. In his opinion, the surveyor ought to be selected from the school of naval architects, and fully conversant with the principles of that science.

Sir C. Adam contended that the superiority of Captain Symonds's ships had been fully proved. He admitted that, in the trial which had taken place between the Barham and the Vernon, the former had had more advantage than he expected, but he considered it incontestable that the former vessel, as a man-of-war, was not at all equal to the latter.

Sir E. Codrington thought that Captain Symonds had introduced a great improvement in naval architecture, by increasing the stability of the ships, and he only hoped that he would not be induced by any motive of jealousy to discard those improvements which his predecessors had introduced.

Mr. C. Wood, Captain Pechell, and Sir C. Adam, said a few words.

The vote was then agreed to, as were the following :—

£106,091 to defray the charges of new works, improvements, and repairs in yards.

£19,221 for medicines and medical officers and stores.

£67,521 for miscellaneous services.

£150,089 to defray the charges of transports.

On the vote of £99,256 to defray the expense of conveying convicts to New South Wales,

Mr. Goulburn wished to call the attention of the hon. gentleman to a fact which had created a strong impression upon the mind of the public—he meant the loss of two vessels with convicts on board. He did not impute blame, but the fact was that two vessels, the George the Third and the Neva, had been wrecked, with a great loss of life; and the impression was, that, had the vessels been in a seaworthy state, the accidents would no thave happened. It would be satisfactory to the country and to the house, if the hon. gentleman would state whether any survey of such ships was made before they were taken up, and the rate paid for them.

Mr. Wood said that the mode of taking up convict vessels previous to 1833 was to take the lowest terms; in 1833 a different principle was adopted; tenders were received at such rates as would afford the best accommodation for the convicts, so that large ships were got at a cheaper rate than small. With respect to the mode in which such vessels were surveyed before they were taken up, he had made inquiry as to the manner in which the George the Third and the Neva had been surveyed, and he found that they had been inspected by the agent for transports and a competent surveyor. The George the Third had been fully repaired, and, at the time the ship left this country, she was in every respect in a fit and proper condition, so that the loss of the vessel could not be owing to any want of proper examination. The accident was, in fact, owing to the master having run through a dangerous and not well-known strait, and not to the slightest defect in the vessel. The hon. gentleman next adverted to the loss of the Neva, and stated that before she sailed her condition had been thoroughly investigated; that she had been, during the period she had been undergoing the necessary repairs, daily visited by experienced shipwrights; that she was surveyed by able surveyors from Lloyd's; that she was by them reported to be a seaworthy vessel of the second class; and that the expenses of her repairs had nearly equalled the price of a new ship of the same burden.

Mr. Chapman said that her loss was not to be attributed so much to the state of the ship as to the imprudence of those in command of her.

Alderman Thompson begged to draw the attention of the Lords of the Admiralty to the absolute necessity (of which the loss of the Neva was another

proof) of their careful examination of the capacity of those persons whom they employed in His Majesty's service.

Sir T. Troubridge defended the captain from any imputation, and observed that very few vessels, of whatever strength, could have escaped destruction after striking upon rocks in the manner the Neva had unfortunately done.

Admiral Adam recommended the strictest vigilance on the part of the Admiralty as to the qualification and quality of the officers and ships they were under the necessity of employing.

An hon. member from the opposition benches complimented the Secretary of the Admiralty on the very clear manner in which the estimates for the year had been made out.

Mr. Hume, as did also Mr. Wakley, expressed his very great dissatisfaction at the way in which those so much lauded estimates were drawn up; and the latter gentleman declared his intention, if upon another occasion they were not arranged on a more intelligible system, of dividing the house upon every single item.

Mr. Wood briefly defended the character of the captain who had command of the Neva at the time of her striking upon the rocks, and insisted that the unfortunate occurrence was not attributable to any negligence or imprudence on his part.

GUERNSEY NEW LIGHT.—For the convenience of approaching the road and harbour of Guernsey by night, a gas light is now exhibited from the Round-house on the South Pier-head of St. Pierre, which is already known to mariners as a leading mark by day. The light is elevated 40 feet above high water spring tides, and may be seen when coming through the Little Russell, from the northward; or in the Great Russell, coming from the eastward, and also from the southward after passing St. Martin Point.—*Devon. Tel.*

Admiral Sir Philip Charles Henderson Durham, G. C. B., the new commander-in-chief at this port, arrived here from London on Sunday, and this morning hoisted his flag (blue at the main) on board the Britannia, 120, which ship was paid off yesterday, and recommissioned this day, April 5th, by Captain Deans Dundas, as flag-captain. Admiral Sir Thomas Williams resigned his command last evening.—*Jersey Paper.*

Captain Sir John Franklin, Royal Navy, is appointed to succeed Colonel Arthur, as Governor of Van Diemen's Land.

NAVY ESTIMATES.—When the Navy Estimates came before the House of Commons, we observed, that no provision was made for the Navy Pay Office. It is now understood, that department is to be wholly swept away; and that in future Seamen's wages are to be paid by Pursers of ships, under the inspection of the Commanding Officers and the Admiral, or Captain Superintendents of the various Ports. Pensions of all descriptions, and allotments, are to be paid by the Collectors of Customs, and Dock-yard wages, most probably, by cheques on the branch banks of the Bank of England.

In doing away with the Ordnance Establishment, it is the intention to put its civil departments, of Barracks and Commissariat, under the charge of a Board of Commissioners, the President of which is to be a Cabinet Minister. The same Board, strange as it may seem, is to have the entire superintendence of the Post-office Establishment, to the exclusion of the Postmaster-General, Secretaries, and the most highly paid officers. The regiment of artillery and engineers will be transferred to the Horse Guards; and one of the first reductions will be to place on half-pay two-thirds of the Field-officers, who, though at present receiving full pay and allowances, have no duty to perform. Nothing is known of gun-wharfs but, as their principal use is as a naval depôt, they will most probably be transferred to the Admiralty.—*Hants Tel.*

PROMOTIONS.

COMMANDERS—T. R. Eden.

LIEUTENANTS — J. C. Meheux; E. Young; A. S. Booth.

APPOINTMENTS.

ASIA, 84 — *Capt.* W. Fisher; *Com.* W. Holt; *Lieuts.* B. M. Atherstone, C. Dimock, H. Pakenham, R. S. Robinson, F. P. Egerton, J. H. Ward; *Purser*, J. Speed; *Sec. Mast.* G. R. Nicholson.

BELLEROPHON, 80—*Com.* W. Picking; *Lieuts.* T. Lyall, C. C. Birkett, Hon. G. Hope, R. J. Abington, H. Galwey; *Mast.* E. Sabben; *Surg.* W. Garland; *Purser*, G. Thorne; *Assist. Surg.* E. K. Nutt; *Sec. Master*, O. Cumberland; *Mate*, R. Patterson; *School.*, C. Rigge.

BRITANNIA, 120—*Capt.* D. Dundas; *Lieut.* W. M'Lean; *Flag Lieut.* W. F. Blair; *Capt. Mar.* C. Welchman; *Lieut. Mar.* W. Collis; *Purser*, R. Hallilay; *Chaplain*, L. P. Rosenburg; *Surg.* G. King; *Assist. Surg.* J. Lardner; *Mates*, J. Chere, W. Gibson; *Mast. Assist.* W. Webb; *Clerks*, R. Clarke, J. W. Nicholls.

COAST GUARD—*Coms.* W. H. Jervis, C. Kiele.

CORNWALLIS, 74—*Capt.* R. W. Festing; *Com.* T. Ogle; *Lieuts.* T. Harley, H. Lyster, J. S. Ellman, J. B. Cragg; *Capt. Mar.* B. Bunce; *Lieuts. Mar.* G. Forbes, J. Hay; *Mast. Act.* J. Watson; *Surg.* J. H. Acheson; *Sec. Mast.* G. B. Harvey; *Assist. Surg.* R. Denmark; *Purser*, J. Fletcher.

FIREFLY, Schooner—*Lieut.* G. Welch.

EXPRESS, Packet—*Assist. Surg.* W. Barnard.

EXCELLENT—*Clerk*, G. B. Fuller.

HERCULES, 74—*Com.* G. A. Sainthill; *Lieuts.* J. M'Donnell, J. M. Langtry, T. Smyth, W. J. Williams; *Capt. Mar.* R. Pratt; *Purser*, J. Taylor; *Assist. Surg.* H. Baker; *Mate*, J. Elliott; *Clerk*, G. Lean.

MINDEN, 74—*Capt.* A. R. Sharpe, C.B.; *Com.* T. O. Knox; *Lieuts*, T. Mitchell, (*b*), C. P. Campbell, H. Lyster, T. B. Brown, A. Keeper, E. Herrick, J. Wakefield, W. R. Stevens; *Master*, S. Flinn; *Surg.* D. Finley; *Purser*, T. Ullock; *Sec. Mast.* E. Moore; *Assist. Surg.* J. Palmer; *Clerk*, E. Barnes.

ORDINARY—*Ports.*, *Com.* H. Drury.

PEMBROKE, 74—*Lieuts.* T. H. Weller, W. Howatt, Hon. L. P. French, R. Morgan (*b*), H. Lyster; *Master*, W. Hemsley; *Purser*, T. Torry; *Lieut. Mar.* T. Searle, D. Harrington; *Surg.* G. Moxey; *Assist. Surg.* R. D. Mitchell; *Mast. Assist.* W. Farrant; *Mates*, W. B. Moneypenny, H. Caldwell, W. Hire, J. A. Riddell, T. A. Aldridge, L. P. Burrell; *School.*, W. T. Onion; *Clerk*, D. Rowe.

ROYAL ADELAIDE, 104—*Lieut. Super.* H. P. Deschamps; *Assist. Surg.* G. Osman.

SWIFT, Packet — *Assist. Surg.* G. Woodricke.

STAR, Packet—*Lieut.* C. Smith.

THUNDERER, Surv. Ves. — *Surgeon*, W. Kay.

TALAVERA, 74—*Capt.* T. B. Sullivan, C.B.; *Com.* R. Devonshire; *Lieuts.* F. Hennah, G. Hales, W. H. Hall, A. Gordon; *Master*, G. Watson; *Surgeon*, G. Borland; *Purser*, J. C. Cumming; *Sec. Mast.* T. Goss; *Assist. Surg.* J. H. Carruthers, G. Denmark; *Schoolmr.* R. Tucker; *Clerk*, C. F. Turner.

VANGUARD, 80 — *Capt.* Hon. D. P. Bouverie; *Com.* T. M. Currie; *Lieuts.* C. M. Wright, G. Lock, J. Hathorn, W. B. Estcourt, T. E. Hodder, W. Edmonstone; *Master*, W. Miller; *Capt. Mar.* R. Mercer; *Lieut. Mar.* W. H. Sturgeon, E. P. Shewen; *Purser*, J. Hutton; *Chaplain*, J. Richards; *Mast. Assist.* J. F. Loney; *Mates*, F. Somerville, J. H. Gennys, Hon. J. W. Spencer, P. Cracroft, H. Vyse, C. Knighton; *Assist. Surg.* T. B. Pascoe; *Mast. Assist.* N. C. Phillips; *Schoolmr.* J. Reilly.

SIGNAL HEROISM.—Henin, the brave fisherman of Boulogne, who made himself so remarkable on the occasion of the wreck of the Amphitrite, has recently distinguished himself again by a fresh instance of extraordinary courage. On the night of the 27th of February last, Henin, perceiving that his boat would inevitably be dashed to pieces on the rocks of Ambleteuse, threw himself into the sea, bearing with him one of his fellow-sailors, whom he safely landed. Touched by the prayers of two others, who implored his assistance, Henin again braved the danger of the tempest, and succeeded in bringing off a second. Nor would he abandon the third to certain death. He again plunged into the waves, strove with increased energy, and reached the vessel at the moment she was sinking. For the third time he was successful! The Société des Naufrages, in Paris, have opened a subscription in his favour.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

Continued from page 254.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS
163	Anu	Of St John's	N.B.	Ireland	Boston	Feb.	
164	Anna	Robinson	Stockton	London	Gunfleet	1 March	
165	Aurora	———	Blyth	———	Shoebury N.	March	Foundered.
166	Barque	———	Liverpool	Berbice	Off Rosall	29 Mar.	Crew saved.
167	Barque	Of 600 tons,	Of Shields,	fallen in	with burnt to	water's	edg. at sea 26 Jan
168	Black Diamond	———	———	———	Kentish K.	14 Mar.	Crew saved.
169	Blue Eyed Maid	———	———	———	Wallet	25 Mar.	
170	Bonetta	———	Newcastle	———	Off Norfolk C.	25 Mar.	Crew saved.
171	Bride	———	N. America	Hull	At Sea	2 Jan.	2 saved.
172	Brig	Apparently	waterlogg'd	Foundered	Off Blakeney	18 Feb.	Crew drowned.
173	Brig	———	St. Kitt's	Savana	Abaco	14 Jan.	Crew saved.
174	Brig	———	———	———	Off Halston	17 Feb.	Crew drowned.
175	Brig	———	———	Sunk in	Aedlohef Bay	21 Feb.	
176	Charles & Elizabeth	———	London	Shields	Long Sand	18 Feb.	Crew saved.
177	Cheviot	———	———	———	Exmouth	28 Mar.	Crew saved.
178	Clarence	———	———	———	Off Kilkee	30 Jan.	
179	Clingard	———	Goole	London	Gunfleet	10 Mar.	Crew saved.
180	Collier	———	———	———	Dawlish	29 Mar.	Crew lost.
181	Collinogue	———	Liverpool	Glasgow	Off Lytham	26 Mar.	Crew lost.
182	Columbus	———	Quebec	Hull	Not heard of	since	25th Nov.
183	Countess of Mansfield	Wilson	———	———	Arklow B.	12 Mar.	Abandoned.
184	Crisis	Foster	Newcastle	Charente	Kentish Knsk	1 Mar.	Crew saved.
185	Cupid	———	Newry	New York	Long Island	10 Feb.	Crew saved.
186	Diligent	———	Newcastle	———	Havre	———	Crew saved.
187	Dispatch	———	London	———	Off Sunk Sand	11 Mar.	Crew saved.
188	Duke Wellington	Parring	Looe	London	Alderney	25 Feb.	Crew saved.
189	Eadreahills	———	———	———	Eyemouth	———	Crew saved.
190	Ebenezer	Garlick	———	———	Grimsby	12 Feb.	Crew saved.
191	Edmond	Stage	Liverpool	Oporto	Off Oporto	20 Feb.	previous
192	Elizabeth	———	Clyde	Belfast	At Sea	18 Jan.	Run foul of.
193	Ellen	Williamson	London	Plymouth	Sandown	21 Feb.	Crew saved.
194	Emerald Isle	Hill	———	Wick	Wick Bay	24 Feb.	Crew saved.
195	Emily	———	Quebec	Liverpool	At Sea	9 Nov.	Crew saved.
196	England	———	Quebec	Clyde	At Sea	5 Jan.	Abandoned.
197	Enterprize	———	London	———	Hartlepool	17 Feb.	
198	Fanny	———	St. Ives	———	Padstow	Feb.	
199	Florence	———	Liverpool	Antwerp	Havering	25 Jan.	
200	Flying Fish	———	Milford	Liverpool	Lewellyn R.	21 Mar.	
201	Friendship	Of Sydney	———	———	Norfolk I.	17 Aug.	Crew saved.
202	Gazette	Supposed	———	———	Paardenmark	20 Feb.	
203	Geo. Canning	———	Liverpool	Africa	Calabar Flts.	27 Mar.	Crew saved.
204	Harriet	———	London	Ostend	Ostend	15 Mar.	Crew saved.
205	Hope	———	———	Foundrd. in	Lowestoffe R.	18 Feb.	
206	Isabella	———	Belfast	———	Whitehaven	28 Dec.	Crew saved.
207	Isabella	———	Shields	Lowestoffe	Off Cromer	17 Feb.	1 saved.
208	Jane	Of Chester	———	———	Near Bangor	16 Feb.	
209	Jane	———	Limerick	London	Off Plaskets	Jan.	Crew saved.
210	Jane and Henry	Coberu	———	———	Torres Strait	———	Crew saved.
211	Jean and Mary	———	P. William	———	Liverpool	2 Feb.	
212	Lady Abrermby.	———	Montrose	———	Montrose	17 Feb.	Crew saved.
213	London Packet	———	Liverpool	Antwerp	Spencer's Gut	25 Mar.	Crew saved.
214	Magnificent	———	Liverpool	Africa	Ballycotton	18 Mar.	Crew saved.
215	Majestic	———	———	Sunderland	At Sea	Feb.	Abandoned T.S
216	Marcella	M'Lean	Adrossan	Belfast	Stranraer	16 Feb.	Crew saved.
217	Margaret	———	Newport	Bridgwater	Off Bridleto.	17 Mar.	Crew lost.
218	Marietta	———	Cardigan	Cork	Black Rock	12 Feb.	
219	Mars	Of Blyth	———	Foundered	Off Wells	18 Feb.	All lost.
220	Mary	Duffie	Belfast	Whitehav'n	Boro' Head	16 Mar.	Crew saved.
221	Middleton	———	Of Aberdn.	Whaler	Baffin Bay	15 Nov.	10 lost.
222	Mould	———	Newry	London	Spaniard	24 Mar.	Crew saved.
223	Nautilus	Parker	Nova Scotia	———	Spencer's Gut	5 Feb.	
224	Neptune	Pattison	Berwick	Abandoned	———	11 Mar.	Crew saved.
225	Neptune	———	Newport	Bridgwater	Off Bridleto.	17 Mar.	Crew lost.
226	Oak	Smith	Scarboro'	———	Scroby S.	2 Feb.	
227	Ocean	———	———	———	Off Padstow	2 April	Crew lost.
228	Osprey	———	Aberdeen	———	Thurso	16 Feb.	Crew saved.
229	Portsoy	Leask	———	———	Gamrie Bay	17 Feb.	Crew saved.
230	Pyrrha	———	Plymouth	———	Off Wells	29 Feb.	
231	Rolla	———	London	Africa	R. Bonny	6 Jan.	Crew saved.
232	Schooner	———	———	Foundered	Spencer's Gut	29 Mar.	All lost.
233	Susan	Crane	Glo'ster	St John. N B	C. Sable	8 Dec.	Crew saved.
234	Thornton	Mitchell	Shields	———	Tees Entr.	12 Mar.	Crew saved.
235	Traveller	Cockburn	Of Newcstl.	———	Lowestoffe	15 Feb.	1 saved.
236	Traveller	Godsman	St Domingo	Falmouth	Trefusis R.	27 Mar.	Crew saved.
237	Venus	Waou	Exeter	Para	Off Fowey	9 Mar.	Crew lost.
238	Vine	———	———	———	Newcombes.	14 Mar.	Crew saved.
239	Woodman	———	Quebec	Hull	Not heard of	since	25th Nov.
240	Zephyr	———	Quebec	Hull	Not heard of	since	25th Nov.

Births.

In Gibbon's-street, the lady of Lieut. Robert Holman, R.N., of a daughter.

On the 11th April, in Harley-street, the lady of Captain Berkeley Maxwell, R.N., of a daughter.

Marriages.

On the 19th April, at Belle-Vue House, Southsea, by the Rev. J. Welsh, (according to the rites of the Catholic Church,) and afterwards at St. Thomas's Church, by the Rev. C. B. Henville, Arthur-Wm. Jerningham, Esq., Lieut. R.N., son of the late William Jerningham, Esq., and nephew of Lord Stafford, toSophia-Maria-Margaret, eldest daughter of Richard-O'Farrell Caddell, Esq., and the Hon. Paulina Caddell, of Harbourstown, County of Meath, and niece to Viscount Southwell.

At Plymouth, Captain W. Cheselden Browne, R. N., to Susannah Inman, second daughter of the late Vice-Adm. Linzee.

Deaths.

At the Royal Naval Hospital, Stonehouse, where he had gone three weeks previous, from his residence, 8, Hobart-street, Stonehouse, Commander W. B. Watts, R.N. (1830), aged 52 years.

Whilst serving in the British Legion in Spain, Mr. James-Todd Lathy, Purser, R.N. (1813), serving in the Commissariat Department.

At Dublin, on the 18th Inst., Capt. Alexander Cunningham, R.N. (1812.)

At Exeter, on the 23d March, Mr. James Rudall, Purser, R.N. (1809.)

At Ivybridge, Mr. Richard Foot, Purser, R.N. (1806.)

At Southsea, Henry Deacon, Esq., the senior officer on the list of Commanders of the Navy, which commission he received in 1787.

At Battersea, Lieut. J. Steward, R.N. (1811.)

At Southampton, Capt. Peter Rainier, R.N., C.B., aged 53.

On the 31st March, at the residence of his father, Vice-Admiral Dobson, Leicestershire, Lieut. Hyde-Parker Dobson, Royal Navy.

At Portsea, Lieut. Samuel Barrett, Royal Navy.

At Morpeth, Capt. Archibald Dickson, R.N.

At Drumcondra, near Dublin, John Cramer, Esq., Commander, R.N.

In Limerick, aged 76, Commander William Moore, on the retired list. He served with Admiral Rodney.

His Majesty's Packet Quail.—We received at a late hour last night, by a correspondent at Jersey, an account of a lamentable occurrence at sea, by which His Majesty's packet the Quail was reduced to a complete wreck, and 16 of her crew drowned. It would appear that the Quail, which is a cutter carrying four guns, left Falmouth about 15 days since, under the command of Lieutenant Bisson, with despatches for Lisbon, having on board at the time 24 seamen and the usual number of officers. While crossing the Bay of Biscay she encountered a severe gale. For some time she weathered it in gallant style, but a tremendous sea struck her on the starboard quarter, carried away her mast, and sent her on her beam-ends, almost swallowing her up. At this time 16 of the crew were washed overboard, together with the mate; the latter, however, was washed again on board the vessel, and succeeded in escaping the fate which his unfortunate companions met with. Captain Bisson had a narrow escape; he was forced into the companion by the violence of the shock, and with great difficulty saved himself from being drowned, the vessel at the time being nearly filled with water. By great exertions a portion of the rigging was cut away, and the cutter righted herself, but became a complete wreck. For several days they were at the mercy of the wind and waves, in the most distressing and pitiable situation. Five days after, the doctor was found in the vessel, he having been drowned at the time the cutter was first struck by the sea and sent on her broadside. Two large vessels passed them after the gale had ceased, but they heeded not the signals of distress, and left them to their fate. Captain Bisson actually fired into the second one, but

without gaining the required aid. At length they were picked up by the Speedy packet, off the Caskets, and every assistance afforded the remaining part of the crew, who were in a very deplorable condition. The Speedy reached Jersey on Thursday with the wreck, when the inhabitants paid the survivors every possible attention that humanity could suggest. A lady, celebrated for many acts of kindness, gave them an asylum in her own house, invited the captain and officers to her table, and gave directions for every assistance to be afforded to the men. All the crew were more or less personally injured by the severity of the gale. Nine of the unfortunate men who were washed overboard belonged to Falmouth, and have left widows and families to deplore their untimely fate. Lieutenant Bisson formerly had the command of the George Canning steamer, and was, we believe, but recently appointed to the Quail. The dreadful occurrence has excited the greatest sympathy in Jersey.—*Observer.*

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

MARCH, 1836.

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.	29·16	29·07	39	45	33	48	S.E.	S.	6	7	Ogr (2)	Phr (3) (4)
2	W.	29·42	29·53	43	50	37	50	S.W.	S.W.	6	6	Bq.	Qp (3 (4
3	Th.	29 64	29·69	44	49	40	50	S.W.	S.W.	3	3	Bcm.	Bcm.
4	F.	29·70	29·68	42	48	38	51	S.W.	S.W.	4	6	Od 1)	Bc.
5	S.	29·47	29·42	42	50	41	52	S.W.	S.	5	6	Qp 1)	Qp (3) (4
6	Su.	29·25	29·19	47	49	35	50	S.	S.	5	6	Ogr (2)	Q or (3)
7	M.	29 42	29·40	41	49	34	50	S.	S.	3	3	Bcm.	Bcm.
8	Tu.	29·35	29·37	39	40	35	41	N.	N.W.	4	5	Gr (2)	Or (3) (4)
9	W.	29·44	29·31	36	46	31	48	S.W.	S.E.	3	6	Bc.	Or (4)
10	Th.	29·36	29·36	43	47	37	49	S.	S.W.	3	4	Or 1)	Or (4
11	F.	29·08	29·12	45	50	42	52	S.	S.W.	7	8	Qp (2)	Qp (3)
12	S.	29·29	29·33	46	51	40	52	S.W.	S.W.	8	8	Qp (2)	Qp (3)
13	Su.	29·59	29·66	43	51	41	52	W.	S.W.	4	6	·Bc.	·Bc.
14	M.	29·22	29 26	49	47	40	50	S.W.	S.W.	7	7	Qp (2)	Qgr (3)
15	Tu.	29 06	29·27	47	48	39	51	S.W.	S.W.	8	9	Qr 1) (2)	·Qp (3)
16	W.	29·76	29·83	40	44	36	45	S.W.	S.W.	7	7	Qbc.	·Qbc.
17	Th.	29 96	29 96	49	52	37	53	S.W.	S.W.	8	10	Qo.	Qor (4)
18	F.	30·33	30·36	53	59	50	60	S.W.	S.W.	5	3	·O.	·Bcm.
19	S.	30·24	30·18	48	64	43	65	S.E.	S.E.	2	2	B.	B.
20	Su.	30·17	30·21	53	65	44	66	S.W.	S.W.	2	2	B.	Bm.
21	M.	30·11	30·01	46	54	43	55	S.W.	S.W.	2	3	O.	O.
22	Tu.	29·94	29·90	48	51	46	54	S.W.	S.W.	3	3	O.	Or (3) (4)
23	W.	29·73	29·60	46	50	37	52	S.W.	S.W.	4	5	O.	Or 3) (4
24	Th.	29·53	29·53	42	49	37	51	S.W.	S.W.	6	6	Qbc.	Qphr (3)
25	F.	28·95	29·00	49	47	38	52	S.W.	S.W.	7	8	Qr (2)	Qbcp (3
26	S.	29·23	29·34	40	44	35	47	S.W.	N.W.	7	7	Qbc.	Qprs (3
27	Su.	29 50	29·50	37	47	29	49	S.W.	S.W.	3	5	B.	Bc.
28	M.	29·67	29·75	39	44	36	47	E.	E.	4	4	Ogr (2)	Ogr (3)
29	Tu.	29·55	29·62	40	45	36	47	W.	S.W.	8	8	Qbc.	Qp (3)
30	W.	29·68	29·46	47	51	40	55	S.W.	S.	8	8	Q'r (2)	·Qp (3)
31	Th.	29·66	29·80	44	47	42	48	S.W.	W.	8	8	Q'phr 2)	Qp'hr (3)

MARCH—Mean height of Barometer=29·535 inches; Mean Temperature = 44·9 degrees; Depth of Rain fallen=2·00 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

CHRONOMETER TABLE.

Fig.1.

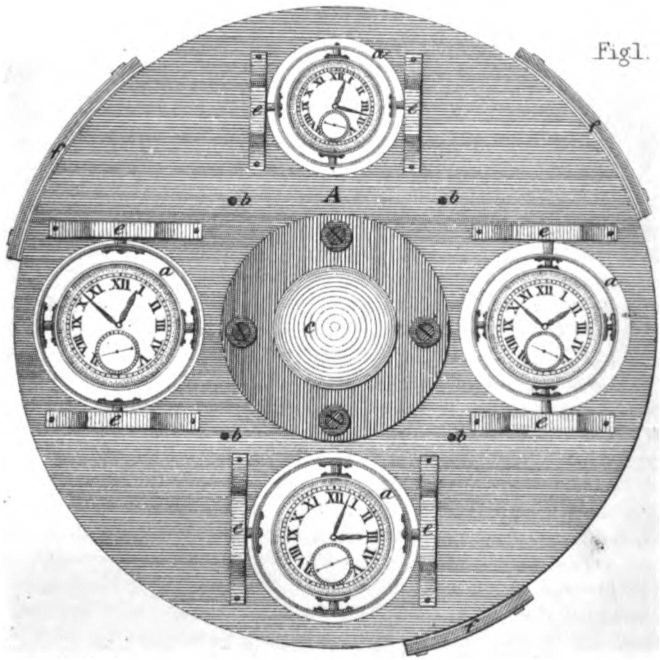
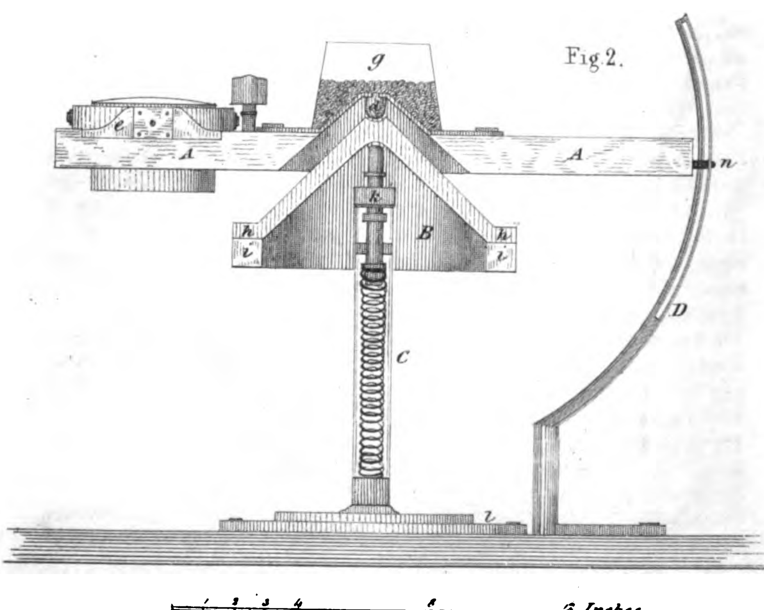


Fig.2.



C. Bradbury Lithᵒ

London, Pubᵈ for the Proprietors of the Nautical Magazine by Simpkin & Marshall, 1835.

Day & Haghe Lithʳˢ to the King

ORIGINAL PAPERS.

JUNE, 1836.

A WINTER VOYAGE TO MADEIRA.

As soon as I had made up my mind to the voyage, the preparations for it were quickly completed, and the next day found me *en route* from the west of England for Liverpool. The general and uniform level of the country, except near Droitwich, throughout between that place and Bristol, as well as the Staffordshire pottery-fires, were the principal subjects of my attention. Nothing in England ever excited my surprise so much, unprepared as I was for such a sight, as the extraordinary scene presented by the latter. The numerous dark figures flitting about between the fires at the "dead hour" of night, when all was still, cold, and dreary, produced a most extraordinary effect; and it would not require much poetic imagery to inspire the spectator (especially if he had just awoken from a nap) with the idea of his having obtained a peep at the sulphureous domain of the "old boy." It seemed as if by some magical agency we had been dropped among the "fire worshippers" of the East; for, although all my travelling companions had for years been accustomed to the use of "Staffordshire ware," not one had any previous knowledge of the scene that would be presented, nor of the sort of slavish life to which the working people of this district are subjected; the "crop time" of the negro must be elysium compared to it. The justness of the vulgar observation, that "one half of the world does not know how the other half live," was here partly exemplified.

Of the vast city of Liverpool itself, so much is known as to leave little to be added. The aristocratic portion of the town, on elevated ground, appears "brick, and all brick;" the lower part more ancient, and less regularly built, is very dirty, but the spirit of improvement has extended its wand over it, and, before long, no doubt, vast alterations and improvements will be made. This great emporium of commerce, this modern Tyre, is truly one of the brightest jewels in the British casket. Her merchants collectively are the most spirited in the kingdom, the very type of the ancient Phœnicians; and her rise and prosperity has been the most rapid and astonishing in the annals of our history! Every thing good may be had there, and the coffee is not only *genuine* fine-flavoured Demerara, (Dutch, as it is called,) but the very best in all England. Those who delight in this delicious beverage must go to Liverpool to drink it in perfection, or obtain it from thence. Of the women of Liverpool, nine out of ten have brown eyes, and the dialect of the natives in general is barbarous! With *them* "haw"

means half, "poy" signifies pie! I had been long accustomed to the abbreviated idiom of the Somerset peasant, and could manage to interpret his words tolerably well, but the Lancashire dialect fairly puzzled me.

The docks are altogether too crowded with vessels, so much so indeed, that it was a matter of difficulty for that in which I had embarked to thread her way to the gate of egress. An unfinished bason lies outside of this dock; and when the tide turns, it runs out with the velocity of a sluice-flood. Three or four ships and brigs were warping out of this dangerous place at the same time, amidst the war of wind, tide, and the vociferations of the pilots, each endeavouring to be foremost in escaping from this Charybdis; the commanders, no doubt, heartily glad at the prospect of being released from the tedium attendant on a long detention, after being ready for sea. In this state of confusion, noise, and bustle, it became evident that damage of some sort or other would ensue; and of this opinion seemed to be the dock-master, (a veteran who bore in his front the aspect of a thorough-bred seaman,) for with stentorian voice he warned and directed the pilots and masters.

After a tedious contention, and the snapping of warps and small spars, a brig, and the vessel I was in, were at the same moment ejected from this caldron of foaming tidal waters; but, before the sails could be properly trimmed, or the vessels brought under command, the eddy-tide irresistibly drifted us towards an unfinished pier. Fortunately we happened to be outside, and a steamer which was lying close at hand, in a commanding attitude, alike bidding defiance to wind and tide, was hailed to our aid. Before, however, she got our warp, we were thrown by the ebullition of the tide (which was equal to any commotion of the sort I had ever seen) with violence alongside of the unlucky brig; she being fast aground under the pier, grinding away her false keel. As we drifted past, to complete her misfortune, her main-yard snapped in the slings, and some small spars were broken; there was no stopping to make apology, reparation "was out of the question," and blame could not be imputed to any one in particular. So onwards we sped, the steamer alongside, and very soon passed ahead of all the other vessels to sea on the 29th of December.

Ten guineas, the sum paid for this assistance, may appear a large amount for the use of a steamer for one or two hours; it should be recollected, however, that the advantages which may result from her aid, for even a much shorter time, are such as seem to justify high charges; besides, steam-vessels are costly things, and more than a mere remunerating price for the outlay of capital must be insisted upon, otherwise they would not repay, and afford a reasonable profit in the long run. She towed us entirely clear of the river before taking her leave.

The owner of our vessel, who resided in London, had been very desirous that she should start without delay upon the first favourable wind; the commander, an officer of the navy, was not a likely person to require the repetition of such a desire; his abilities and stamina were alike suited for contending with hazardous circumstances; and we were satisfied that when once fairly out, he would not again seek shelter, unless forced to do so by overwhelming necessity. True to his determination, he did persevere, against contrary storms and winter's cold, until he finally accomplished the point; all the other vessels, on the wind heading us off Holyhead, bore away, and returned to the Mersey, leaving us alone.

The "Herring Brook" is a perilous navigation during storms and adverse gales in the long nights of the winter season, as all those who have had to contend against such are fully aware; and it does appear a matter of surprise, notwithstanding this fact is clearly established, and well understood, as the annual loss of vessels testify, that merchants, leaving little to the judgment and practical experience of the commander, are ever importunate for his starting upon the first slant of wind that may occur. I am induced to notice this here, from a lamentable instance of the consequences resulting from ordering the master of a vessel to sea at all hazards, and where he would be exposed to the horrors of a lee-shore on a coast proverbially dangerous. Energy and promptitude are admirable qualities, and perseverance to accomplish an object desired, against difficulties, is the characteristic of British seamen. In these matters, however, as much depends, to insure success, on the favourable qualities of the vessel herself. Men cannot accomplish impossibilities, and, unless they have a good ship under foot, it is no more than making them a sacrifice to the raging elements, to push them into such a dilemma as awaited the unfortunate persons in the following instance:—A merchant being very desirous to get his ship on her voyage, although the weather was threatening, gave peremptory orders to that effect. The captain, a lieutenant in the navy, remonstrated, but in vain; to sea he must go, or resign the command. This was quite enough, and he fulfilled the order. As the long night came on, the wind chopped round to the N.W., as was anticipated, and blew a heavy gale, attended with fog, &c., which the devoted vessel succeeded in weathering for two or three days; but she was finally wrecked upon the Welch coast, and not a soul survived!

Men as brave and bold as the lion often want moral courage; they are afraid of opinion! The opinion of two-thirds of mankind is not worth a rush; that of the good and virtuous alone is valuable, and should only be regarded. But, on the other hand, necessity often compels a man to act in opposition to the dictates

of his sound judgment. "What," said a skipper to me, in a somewhat similar case, "am I to do? I cannot give up my bread, starve my family, and be laughed at into the bargain; I know the chances are fifty to one against me, and that my life will hang upon a straw: but there is no other alternative *on our side;* we must trust to Providence, and our own resources." The avarice of the owner here held the balance; we need not ask on which side lay the fault.

We do not know whether the vessel spoken of above was insured or not; it is more than probable, however, that she was; but there is no *underwriting* for the *loss* of the peace of mind which *should* follow the deplorable sacrifice of valuable lives on that melancholy occasion, when merely pounds, shillings, and pence were the consideration!

To return to St. George's Channel, or the Herring Brook, as it is familiarly called. Our situation was one of extreme peril; the wind veered round to the southward, and blew heavily, whilst every thing was enveloped in the fog. We drove above the Isle of Man,* and, had we not been pretty sure of a northwester, the "north-about" might have been tried; but there was no question about that; we should only have made a "man-of-war's" cruise of it, and had better have been snug in the dock, and saved "*wear*" and "*tear*," not to the *eye* of the merchant, *that* seldom

* THE ISLE OF MAN.—The derivation of its name has been variously stated.

Mang—Saxon among; with reference to its situation, surrounded by the then kingdoms—Scotland, England, Wales, and Ireland.

Maune—The name of St. Patrick, the apostle of the island, before he assumed that of Patricius.

Mona—So called by Cæsar. Late writers agree that Mona Cæsaris means this isle; and Mona Taciti, Anglesey. Early authors style it Monada, Menavia Secunda, Eubonia, &c.

Manning—By the inhabitants; it is traditionally derived from Manna Man Maclea, an early king, who first conquered the island.

The Point of Ayre is the north extreme of the isle.

Maughold is the north-east cape of Man, between which and Ayre is a bight, on the shore of which Ramsay is situated. It is a bold promontory, with tiers of moss-crowned rocks on its summit. It is so named after one of the ancient bishops, who had previously been the chief of banditti in Ireland! He exiled himself from "his dear native land," having become ashamed of his calling, setting himself, manacled and fettered, adrift in a leathern coracle, as a sort of penance, and was drifted upon the island!

Barrool—Baare-ool, in the Manks language signifies the top of an apple, whence the name of this mountain. It is situated to the westward of Maughold Head, and is stated to be 1735 feet above the sea-level.

Banks Howe—the northern head of Douglas Bay.

Sna-fell, Sneeaylle, Snafieldt—Anglicised, probably Snow Mountain. It is the highest mountain in the isle, and has been estimated at 1740 feet above the level of the sea.

wears a tear! 'tis the heart that weeps at loss, and the eye that smiles at profit.

Every favourable slant was taken advantage of, and the sun occasionally allowed the captain opportunities of determining our position. On new-year's day, we caught a glimpse of the Tuscar lighthouse, bearing N. N. E. about five leagues distant. On the 3d of January, with a stormy W. N.W. wind, we rounded the southern promontory of South Wales, crossed the Bristol Channel, and at 8 P.M. saw Scilly light, bearing S. E., distant six leagues. Glorious beacon, what relief does thy bright star, blazing amidst the gloom of night, afford to the heart of the mariner. But for this guide, many is the stout heart that would have shared the fate of the old admiral, Sir Cloudesley Shovel! * There is a tale, by-the-bye, related of this gallant seaman, that we wish had been buried with him, that he might, for the honour of the cloth, have been *shovelled cloudless* into his humble sandy grave, for the short time that he lay there, and where, singular enough, it is said to this day, the grass refuseth to flourish, although covering every other part around. But superstition reigns here in these isles, as in other remote and secluded spots. The "*association*" of the execution, and the subsequent wreck, with the vulgar, seems confirmatory of the truth of the story, which we verily believe to be one invented by malice, or sheer wantonness. We extract it from a note in the Rev. Mr. Woodley's work, conceiving that the reader has only to peruse it, to disbelieve at once the circumstance as therein related.

"The day before the occurrence of the disaster, a seaman of the *Association* (the flag-ship) well acquainted with the navigation of the channel, ventured to represent to the admiral, that, by the course he was steering, he would inevitably run on Scilly rocks. The admiral, incensed at this interference, charged him with insubordination, and with endeavouring to excite a mutiny in the ship, and, in a very summary manner, condemned him to be hanged. The poor fellow begged, as a last favour, that a psalm might be read before his execution, which being granted, he made choice of the 109th, so distinguished for expressions either imprecatory or declaratory of evil! He was hanged, however, according to his

* At Porthelik Cove (St. Mary's Island, Scilly) the body of the brave Sir Cloudesley Shovel was washed on shore; and, not being recognized, was buried in a bed of sand, but afterwards taken up, and removed to Westminster Abbey. When the fatal accident occurred, Sir Cloudesley, in the Association, was returning with his squadron from Toulon, and on the night of the 22d of October, 1707, in an extreme fog, struck on the Gilstone rock, and sunk instantly. Every soul on board perished; and among them several persons of distinction, who had accompanied the admiral. The Eagle, Captain Hancock, underwent a similar fate; and the Romney and Firebrand were also lost, but their captains and twenty-five men were saved.

sentence; and the preceding narrative (the shipwreck of the Association, &c.) certainly derives an additional horror from this circumstance."*

This cluster of rocks and sand-banks derives an interest from its history, which, if we except Cornwall, belongs to no other portion of the country: we allude to its early trade with the Phœnicians. By these people they were called "*Cassiterides*," and in the Records "*Sully*." They are valuable appendages, in more than one sense, to the country, and deserve more attention than has hitherto been paid to them.

The vessel I had embarked in was in every respect an eligible one, and established the good character she bears, by clearing the channels in a six days' beat, and drift, in very stormy weather. We all rejoiced, of course, at being fairly at sea; and not a little of the satisfaction felt at the time arose from the chance which our excellent captain had now of obtaining a little rest. His physical powers, however, were fortunately equal to his skill and fortitude; and his successful efforts on this occasion entitle him to high praise, and which we have no doubt was fully appreciated by his friend, the owner of the vessel, an experienced and worthy gentleman.

On the 5th January, we passed at a short distance from the supposed site of "La Chapelle" rock, but did not see any appearance of danger. Many of the vigiæ of the Atlantic have been noticed by some navigators, and not found by others who have looked for them; which has cast a doubt upon their existence. In these matters there appears to be a propensity in the human mind to be incredulous with respect to what we have not ourselves witnessed, and an eagerness to expunge from the chart these *dots*, which serve as exciting causes to the vigilance of the mariner, without sufficiently reflecting on the extreme difficulty exemplified in numerous instances in hitting upon the precise spot of a mere speck in the open ocean. In the present instance, I am contented in merely stating that we did not see any danger; to do more, would be unwarrantable and improper. The tidal wave is stated to rise in the ocean vertically, and its *form* to advance as in the instance of the common wave, but of course on a much grander scale. As we have no occular proof of this operation, it has no doubt been inferred from the circumstance of there being a rise and fall of the sea on the coasts of isolated isles and rocks in the mid-ocean. As this elevation and depression amounts to from one to ten feet, according to geographical position, may it not so have happened that some of the vigiæ which are stated to be only

* The intelligent author of Hadley's memoir in your work, Mr. Editor, would confer additional favour on your readers, were he, who knows so well how to handle such matters, to take the subject up for elucidation. If he could rescue the admiral's character, he would have his reward.

a few feet above the surface, were covered and entirely hid from view by the tidal wave, at the times the unsuccessful searchers have looked for them? and, vice versa, been displayed to others who have reported their existence. This probable circumstance may not have been before considered, and I merely note it here, with the hope that the incredulous in these matters, when they pass the sites of these various dangers, will ascertain whether the giant wave be up or down.

On the 24th we spoke the barque Columbine, from Falmouth, bound to Rio: she sailed on the 19th. In six days she had made her run to 43° 44′ N., 12° 24′ W., whilst we had been twenty-eight days in accomplishing it, from about 190 miles farther north! The barque, however, leaving adverse gales out of the question, had the advantage on her side, from the proximity of the port she left to the open ocean, and her soon getting clear of the influence of the tidal waters. Instances are on record of ships well stored and manned, having taken advantage of a slant of wind to prosecute their voyage, and of having accomplished it to the West Indies and back, finding those ships they had left in port still remaining wind-bound!* This winter, two fine ships, well found, belonging to the same owner, sailed from Kingroad on the same day; one continued her voyage, the other put into Milford Haven, after contending unavailingly with a westerly gale. Perhaps no seaman familiar with the winds of this country would hastily blame the latter for not accomplishing what the other had done; the owner might, but perhaps unjustly, as it is highly probable that the other vessel, by not keeping away so much to the westward as this, carried her slant of easterly wind farther south, and thus enabled her to get an offing; for it is indisputable that wind from opposite points may be blowing at the same time at a short distance. Whether the judgment in this instance guided the successful commander, we know not; but there are practical points upon which all seamen should busy themselves, for they will assuredly learn more from their own close observations in this matter, than from the remarks to be found in books, although the latter are of acknowledged value.

In the instance we are speaking of, supposing the vessel which pursued her voyage was equally assailed by the westerly gale, but that the captain made up his mind to persevere; as it really happened, this westerly gale did not prevail on the coast more than three or four days, when the north-east wind set in steadily. Of course, the ship which had put into Milford started again; and the chances are, that she has reached the West Indies as soon as the

* A similar instance occurred very lately in the Downs. How completely does this shew the advantage that would ensue from having a packet station as far into the Atlantic as possible, when time is an object.

other, escaping all the wear and tear of sails, cordage, &c. I am an advocate for promptitude of action, but at the same time really believe that the masters of ships often are undeservedly censured by the owners; they are, in the majority of cases, placed in a very uncomfortable position. If the merchants desire that their captains should make quick voyages, they ought to provide them with efficient vessels, well manned and stored; if they do not, their expectations are unreasonable, as well as unworthy the high character which it should be their pride to support. The Bristol ships have always stood high in the estimation of those who are competent to judge of the merits of shipping, and they appear to me superior in most respects to other British vessels.

On the 26th, the clouds assumed an extraordinary appearance; fine *cumuli* about ten degrees above the horizon, with the base perfectly flat, as if cut with an instrument.

On 27th, early, the *cumuli* were well defined, but before noon changed to *cirro-cumuli;* at noon, in the zenith, they changed to *cirro-strati*, flakes passing in opposite directions, east and west. Of course these currents of air were moving *below* the streams that flow towards the tropic to constitute the N. E. trade-wind. The expressions used in popular works on this subject are likely to mislead the inexperienced.

On the 28th we parted from the last sea-gull in 39° 7′ N., and saw the first petrel, that bird so generally considered as of ill omen. The next day, dark *nimbi*, in detached patches, gave us copious showers; when changed to cumuli, a gale commenced at S W., and the sea got up very quickly. Here we see the origin of these south-west winds in this part of the Atlantic; the fall of rain, by altering the temperature of the atmosphere, induces a movement of the air to the N. E., and their continuance will depend, in all probability, on a succession of falling moisture. This wind had prevailed since the 27th, (and, no doubt, rain had fallen farther in the S.W. quarter,) with a great degree of humidity in the atmosphere. The sympiesometer* gradually fell until it became calm on the 31st.

During the calm on the 31st, one of those singular molluscus animals, the calamary (*saligo sagittata*) swam past the vessel. It is about two feet in length, of a brown colour, spotted like the ray, and progresses with an undulatory motion; when at the bottom, it is said to move along almost in a vertical position with the head downwards; it is provided with tentaculæ, having suckers beneath, and a beak resembling that of the parrot. It is unusual to find this animal so far from the coast.

* Also called symsiometer, an instrument contrived, by means of hydrogen gas and an oil, to indicate the changes on the pressure of the atmosphere. It occupies much less room than the marine barometer, and is much in use.

On the 1st of February, calms and "cats-paws." This latter term is a strange one applied to light airs. In the eighteenth century we find our sailors using the word "cat-skin." The old seaman, Roberts, of Cape Verd Island celebrity, has given us in his adventures (in 1722) among the pirates, the following definition of this term:—"Light airs of wind, not spreading perhaps above half a mile, and some of them not more than an acre upon the water; some perhaps reaching you, but dying away before you can set your sails, or get your vessel's head the right way; others dying away before they reach you; while some coming up do but just pass you."

Those who have been chasing the French privateers during the past wars may recollect, however seemingly provoking these cats-paws were, what an interest they gave to the chase. How often has the exciting sound of, "get the engine up—firemen aloft," inspired me with the hopes of a prize; the very recollection of it lightens the weight of years. Many of the small stormy petrel (*procellaria pelagica*) were skimming to and fro in the ship's wake. Here we have another whim of the sailor in naming these birds "Mother Carey's chickens." Who, or what this notable dame was, has, we believe, never transpired; from the name (Dr. Browne calls her "Kerry") we should, however, consider her as "appertaining" to the Emerald Isle; and the fancy might, with a little working up, picture to itself the brown and withered hag, perched upon the pinnacle of a sea-beaten rock on the west coast of Ireland, with her elbows upon her knees, and her head resting upon her hands, watching with eager gaze the fading sunbeams, and the brewing of the storm, which may cast some luckless craft upon the strand.

The petrel is very alert on the wing, and of a rusty-brown colour, with some white markings; it has a very peculiar way of holding its head, the bill being kept in nearly a vertical position, probably that the eye may be the better enabled to survey the surface of the water below it, whence the bird derives its food. Although in shape not unlike the swallow tribe, it has not the swallow-tail; the wings are very long, and the feet, except when the bird descends to the surface, are placed in a horizontal line with the tail, which is spread out. The lower feathers of the back and the upper part of the tail are white.

The popular name of "stormy," as a distinguishing prejunct to this bird, has no doubt been given it on account of its being seen during gales of wind; but it is most certainly erroneous to consider that its appearance forebodes a tempest; with equal propriety may the opinion be fixed upon the gull tribe, for they are as often observed in stormy weather as the other. The poetasters of all degrees have seized upon the idea, and we find them accordingly

introducing the bird as a sort of *genie* of the tempest; one specimen is sufficient:

"For I never saw his active flitting form,
Sweeping with dusky wing the wave,
But I mark'd the tempest's rising storm,
And thought of the seaman's wat'ry grave!"

In the calmest weather, in fact in all weathers, "blow high, or blow low," the petrel may be seen disporting

"O'er the glad waters of the dark-blue sea,"

—from pole to pole. It is *par excellence* the "bird of the deep;" it has no local "*habitat*," but its tribe is spread over the whole aqueous portion of the globe; and it is probable, though the fact I believe has never been ascertained, that it frequents the rocky and uninhabited isles, to lay its eggs and rear its young. There are several varieties of the petrel, some much larger than others; but whether they are migrant, or confine themselves to certain latitudes, has not yet I believe been satisfactorily ascertained. Sailors have a strange notion, that this bird, in the fashion of the marsupial quadrupeds, has a sort of pouch or bag under the wing, wherein she deposits her eggs; and, considering that it never alights on land, but is constantly, and in the strictest sense of the word, an inhabitant of the air, they imagine that the young are there hatched and nurtured!

Vast numbers of porpoises, ranged in a line, were discovered basking in the sun. One of the crew, who was an old preventive seaman, was eyeing them with a suspicious glance, when the boatswain, clapping him on the shoulder, said, "What are you looking at so steadily, Ned?" "Why," said the other, "them porpoises looks for all the world like a raft of the real stuff; I was just thinking about the *cart* and the custom-house." "Pshaw," exclaimed the boatswain, "porpoises, indeed, why I'm blessed if it isn't the Yankee's sea-sarpant!" We were all struck with the resemblance, and the captain had jocosely made the same observation.

On the 2d of Feb. a light air from the E.N.E.; the thermometer fell four degrees, and the sympiesometer rose; temperature of the air and surface-water equal, at 59°; beautiful cirri to windward. This modification of the clouds, vulgarly known by the name of "mare's tails," is the most elegant amongst those vapoury bodies; it is impossible to watch their changes without being delighted; their study would eventually well repay the observer.

The passengers were much amused at the spouting of a large black whale; and the mate pronounced it one of the largest "fish" he had ever seen. It would have been a very arduous task to have convinced him, if that were possible, that the whale is not a fish.

Here would have been the result; somewhat akin to Captain Basil Hall's Jack and the Sombrero. "I say, Ben, the Doctor swears a whale's no fish! the knowing ones ha'e dubbed it a *cete*, or some such d—d outlandish name!"

Ben—"Well, that's a good un. Ah! the fools!—a settee! Why, a settee all the varsal world over every one knows is a merry geranium craft as has lateen sails—the grasshoppers, do they pretend to know better an them who has sarved their reg'lar time in the Greenland seas, and knows that whales ha'e got fins and tails!"

On the following day we had a fine breeze from the east. The sun had great power here, and the atmosphere over the sea being augmented in temperature, had drawn a stream of air from the snow-capped Pyrenees, without, probably, interfering with that incumbent over the land. Beautiful cirro-strati were collected around the horizon, whilst the cumuli were seated above.

Whilst the heavy weather continued, a low-hulled "rakish" looking brig, kept upon our quarter for two days and nights, keeping a light at her peak after it became dark. When we edged towards her, with the intention of learning what she was, she always kept away, so that we could not accomplish our object. Being well armed, we did not avoid her. She was probably a Brazilian privateer; or, if a pirate, she did not like our appearance and shew of hands.

On the 5th, a large East Indiaman passed us to the southward. She appeared a fine roomy ship, and was speeding it gallantly before the breeze. These vessels we have often seen in fleets during the late war; a sight peculiarly British, and which has had no parallel among other civilized nations of Europe. Unwieldly and powerfully armed as were the Spanish galleons of old, they could bear no comparison with the beautiful ships of our mercantile princes! But the charm has been broken; and it may be, in the course of human events, that "the game will be up!" The intellect of the olive-coloured children of the East begins to unfold itself; and when their degraded situation, the wrongs and the aggressions they have suffered, shall open before their enlarged views, will they not vindicate their rights? The event is inevitable; take the whole history of British India, from the first factory to this hour; what have we to be proud of? In a worldly sense, wealth and power, like charity in ethics, "covers a multitude of sins."

"Poor race of mortals," said the pitying spirit,
"Dearly ye pay for your primal fall,
Some flow'rets of Eden ye still inherit,
But the trail of the serpent is over them all."

On the 5th, wind N. E., cirro-strati were in layers near the horizon, with cumuli above. This is precisely the disposition which the aërial vapours assume over land in a sunny ocean; from

their elevation, the position of an island may correctly be pointed out long before the land is seen. First appearance of physalis, or "Portuguese man-of-war" of the sailors; and fucus natans, or "gulf weed," of the same eccentric race of mortals. At 4 h. 30 m. P.M. saw Porto Santo bearing S. by W., distant forty-six miles.

It would create surprise in the minds of the shore folks, who may often have heard of the voyage to the Madeiras being performed in a week, to find that it had taken us the extraordinary length of time of five weeks and three days to get sight of these islands! During some portion of this period, the current had set our vessel no less than five degrees and thirteen minutes *to the east*, as determined by chronometer and the land-fall! Between the 45th and 34th degrees of latitude, we had been set 248 miles to the eastward; the average 22½ miles (and a fraction) a day.

The extraordinary amount of easterly current experienced between England and Madeira, fully and satisfactorily corroborates former statements of this tendency of the waters of eastern Atlantic towards the coasts of Europe and Africa, and may serve to shew the danger to which those vessels that are solely navigated by account are liable to, when crossing these parallels; as well also making apparent the value of Major Rennell's advice to navigators, respecting the allowance proper to be made by vessels following this route.

The Portuguese having discovered Porto Santo during a storm, and finding shelter in a harbour, gave it the name which the island itself now improperly retains. From the appearance of the island, we should have estimated its extent at more than fifteen miles circuit, as given it in the works of reference. The summit was enveloped in fine fleecy cumuli, which threw a dark shade upon the land, leaving the contour of the extremes traceable. There are two remarkable peaks near the north-east point; the other extreme appeared, as far as it was seen, to decline gradually to a point; the first bearing S.E. ½ E., the latter S.E. by S.

The following night we passed within sight of the bluff north-west point of Madeira, with a fine N.N.E. breeze, speeding it gallantly towards the "Trades." We had now our desire:

> "A wet sheet and a flowing sea,
> A wind that follows fast,
> And fills the white and rustling sail,
> And bends the gallant mast."

THE PORT OF CANEA.

To the Editor of the Nautical Magazine.

London, April 26th, 1836.

SIR,—A letter from Messrs. Steele & Son, Liverpool, dated 18th inst., and which has this day reached my hands, contains a com-

munication, intended to correct the printed description of the port of Canea in Candia. It may be useful to many navigators of the Archipelago; and I, therefore, consider it as my duty to transmit it to you, in order to make it generally known.

The letter states, that this port is incorrectly described in the Directory for the Eastern part of the Mediterranean Sea, page 67: that Captain Spurgeon, of the Harlequin, of Yarmouth, has lately ascertained that it now has a fine mole, capable of admitting a *great number* of vessels, and of larger burthen than is generally supposed; having accommodation for vessels of from 200 to 300 tons burthen, in 4½ to 5 fathoms of water, good ground. For such vessels it must, therefore, be an important harbour.

In the work above mentioned, "Notes" page xxiv, it is also stated that, "In the stormy weather of December, 1833, Canea suffered very severely from a tempest, and the mole was cracked to such a degree, that the sea had a passage along its whole length; the keys were said to be destroyed, and the harbour no longer existed. The merchants suffered severely, all the warehouses and the ground-floors of the houses situated next the sea having been greatly damaged by the violence of the waves. Four vessels perished in the harbour. The country around, also, it is added, was completely in a state of devastation.

Mehemet Ali, the present chief of Egypt and of Candia, sometime after promised, upon a representation of the matter, that the mole should be repaired; and it may, therefore, be presumed, though I know nothing of the particulars, that this promise has been fulfilled.

I remain, sir, your obedient servant,

JOHN PURDY.

THE SPANISH ARMADA.

To the Editor of the Nautical Magazine.

SIR—If those who dwelt on the sea coasts of Essex, Kent, and Sussex were alarmed by the menacing force concentrated at Boulogne by Buonaparte, avowedly with the design to subjugate this country, what must have been the dread experienced by the nation, in 1588, when the Spanish Armada, fitted out by Philip the Second, was actually known to be at sea? Since the time of Xerxes, perhaps, a more formidable force never was collected than that equipped to crush Elizabeth. A more momentous crisis for our country could scarcely be conceived, and the fate of that proud armament could not fail to inspire a belief that we were saved by the intervention of Providence. That the confidence of the Spaniards in the success of their expedition was complete, we need no stronger proof than that their ships were actually provided with instruments of torture; and had they proved triumphant, an

inquisition, the most terrific of tribunals, would have doubtless been established in our country, where many a victim would have been sacrificed to satiate the vengeance of a sanguinary despot. During the time this formidable fleet was fitting out, the most strenuous measures were resorted to by Philip's government to inflame the ardour and exasperate the animosity of the Spanish against the English, while, through the agency of priests, an appeal was made to the national bigotry, making the people believe they were going forth armed for the fight of faith, against an accursed set of excommunicated heretics, whose subjugation was decreed by heaven. What powerful effects such denunciations have produced, when fulminated from the pulpit, we, even in modern times, have seen exemplified in Spain, Portugal, Italy, and Russia. But the Spanish priests were not the only persons who tried to fan the fire of patriotism into a flame, during the fitting out of their "Invincible Armada." The celebrated poet Gongora composed a Cancion, animated by the warlike spirit of Tyrtæus, to excite the courage of his countrymen, and inspire feelings of scorn and hatred for Elizabeth. In short, Gongora was to Philip, what Gleim was to Frederick the Great of Prussia, only that, happily for us, he had not the gratification, like the Prussian patriot bard, to celebrate the triumphs of his monarch. Considering the poem of Gongora curious, from its connection with such an important period of British history, and believing it not as yet to have been "done into English," I have ventured to translate it, not literally or in prose, for having first essayed that method it appeared inadequate to convey any idea of an author so remarkable in the annals of Spanish literature,* I therefore have employed blank verse, as a medium more calculated to bear a transfusion of the bard's heroic spirit. Whatever influence Gongora's appeal may have exerted in Spain, I apprehend it must have been feeble when compared with the effect produced by our Queen's speech, said to have been impromptu spoken in the camp at Tilbury. How interesting it would be to us, if some archæologist, amongst the official records of those times, could lay his hand on any document to prove the authenticity of the address Hume furnishes as genuine.† Whoever framed the speech evinced consummate skill, for it is a nervous,

* Gongora, after commencing a most prosperous career in poetry, was branded at last as the greatest corrupter of the public taste. Considering how important to English sailors the Spanish language is, and how many of our sea terms are derived from it, some articles upon that subject may perhaps hereafter prove acceptable.

† Hume and Smollett, Vol viii. A learned Scotchman has gone the length of designating Hume's History of England as a *story book!* As for the ancients, their orations, put into the mouths of generals and statesmen, evince the toil of authorship in that degree which Aristophanes scoffed at so bitterly: they smell too strong of midnight oil, and are more calculated to win the applause of critics in the closet, than to warm the hearts of soldiers in the field.,

spirit-stirring composition, at once gracious and dignified; in short, adapted admirably to cheer the country at the dread crisis when Elizabeth delivered it.

Poem by GONGORA, *upon the Spanish Armada.*

HISPANIA, rise! the trumpet's war-note sounds,
To rouse thy sons along the vast extent
Of thy proud empire—from Lusatia's soil,
To where the Pyrenees their chain extend;
Ferrol to Cadiz; Bayonne to Navarre.
Sons of the honour'd land that gave me birth,
Your glorious deeds, on adamant engrav'd,*
Shall stand a record of your patriot zeal.
Against a race, once potent, we wage war:
Their cause now makes them feeble: your approach
Shall make them quail: unnerv'd by dread,
The bare effulgence beaming from your arms
Shall soon dissolve their ranks, as fire melts wax,
And make their visual orbs as void of sight
As their dark minds are blinded now to faith!
Thou who with pious zeal and noble wrath
Hast on the ocean's undulating breast
Sent waving forests forth, and called to arms
All who have strength a patriot's sword to wield:
So vast is thy Armada, that the sea
Can scarce yield waves to float the lofty ships,
Nor air lend breath enough their sails to fill!
Ah! may they prosper in their course, and soon
These English pirates crush! Soon may their blood
To crimson turn the ocean's azure waves,
Till all the strands are covered with the wrecks
Of crippled ships, torn flags, and mangled limbs!
O England! once pre-eminently great;
When in those temples the true faith was taught,
Now by the rites of heresy profan'd!
In thee, Mars held his camp, and in thy schools
Pallas herself imparted wisdom's lore.
Worthy, O Anglia, then, thy honour'd brow
To be with regal diadem adorn'd,
But nettles, thorns, and rank Lethean weeds,
Should now alone combine the crown to form.
Anglia, once mother of a glorious line
Of Arthurs, Edwards, Henrys, wise and great;
Mighty in war, as pure in faith; but now

* The original is, "armed in adamant;" a bad material for making armour, however bright the thought.

A recreant tribe disgrace their glorious sires,
Curs'd with a despot amazon, whose hands
Usurp the sceptre, and disgrace the sword.
Her vassal subjects she imperious rules,
Bears not to Britain's sons a parent's love,
But proves a step-dame harsh. O worthless Queen,
Or rather she-wolf,* ravenous and fierce,
May fire from heaven be hurl'd at thy proud head!
Meanwhile, O Spain, be vigilant and watch,
Th' Ionian waves that bathe the Moslem's shore,
And the fair harbours of Sicilia's Isle,
Where lurk the corsairs, whose barbarian crews
Are prompt to seize our ships, ravage our shores,
And lay waste towns to populate their jails.
Shall the Turk spoil us thus, and bear our men
Hence, bound in chains, as slaves to tug their oars?
Oh, if their arrogance and our deep wrongs
Move not your wrath, and stir not Christian zeal,
Behold the haughty banners they display;
Embroider'd with half-moons and coursers' tails,
As if to shock believers' eyes, and jeer,
With symbols infidel, our holy Cross;
On these an anxious look keep fix'd: ev'n now,
While glory leads you to Britannia's shores,
To rout their fleet and subjugate their land,
Guard still your native coast, and make our foes
Respect those pillars which Alcides fix'd,
Of his laborious course the bounds to mark,
For of Hispania these are now the keys.
But the momentous crisis is at hand:
Arm all your heroes, all your vessels launch,
And o'er the castles and the lions fierce
Which your emblazon'd banners now adorn,
Hoist at the main the lion more renown'd,
The glorious ensign once of Jadah's tribe!
Then shall your arms resistless force obtain,
To hurl destruction on these infidels,
And those who reckless o'er th' insulted main,
On blood and rapine bent, triumphant roam,
Shall of that ocean now, by heaven's decree
Become the spoil, and sink to rise no more!
Here let me pause, O muse; the Tuscan lyre
I laid aside, the trump of war to sound:
Haply not skill'd to sing such daring themes,
Yet if spontaneous to my swelling breast

* The original says, "loba libidinosa;" an epithet that might be applied to Messilina or Catherine, but not to our Elizabeth assuredly

Apollo's glowing inspiration came,
Then may I augur that these lays, O Spain,
Shall not be sung in vain to rouse thy sons,
And that my country's fame shall thus be spread
From pole to pole, and live from age to age. J. M. D.

Remarks on the Cargados Garayos Group, *by Mr. Henry Davey.*

Immediately in the track of ships from the Isle of France to India, are the Cargados Garayos Group. The south end of this group bears from Canonier's Point N.E. by N. about 220 miles; it is therefore necessary that the Trade should be well to the southward, to effect the windward passage. The current generally runs to the N.W., directly on the islands, at the rate of from one to two and a half miles per hour; and should night intervene while yet to the southward, it would be extremely hazardous to attempt to pass to windward. Indeed, in all cases it is advisable to avoid crossing the parallel of these dangers during the night, which can be easily avoided by regulating the time of sailing from Port Louis.

In H.M.S. Hyacinth, we sailed from Port Louis, at 1 P.M. of 13th August, 1833, and keeping a good full to the Trade, which was from E.S.E. to East, just fetched the south island sufficiently early on the morning of the 15th to enable us to get sights for the chronometers; we also got a noon observation for the latitude: these gave, for the latitude of south extreme, 16° 53′ S., and longitude 2° E. of flagstaff on Tonnelier's Island, Port Louis.

The morning was fine and clear, with a moderate breeze; and when land was reported, the only objects visible were the tops of four cocoa-nut trees, the wreck of a ship, and broken water to the N.E. as far as the eye could reach; we were distant at this time from the nearest broken water, which was the very south extreme, certainly not more than 10 miles, which may be considered a sufficient reason for avoiding this dangerous vicinity by night. We were quickly up with the south point, and ran under the lee of the island to the anchorage abreast the cocoa-nut trees, where we hove to, and dispatched a boat to examine the wreck; from the south point to the anchorage, the shore may be approached to within half a mile in nine fathoms water. The south or main island is of sand, very low, and almost destitute of verdure, nearly nine leagues in length in a N.E. by N. direction, and is intersected by several boat channels, which are mostly dry at low water. The island on the windward side is fronted by a broad coral reef, over which the sea breaks with great force, presenting a continued line of heavy breakers reaching to the most distant verge of the horizon. Like most other coral reefs, it is remarkably steep to; the lead is therefore of little use, and a vessel once within the

influence of this terrific danger, is without hope. Between the reef and the island is a lagoon of shoal water, about three miles in length; close to this, at the distance of two to three miles from the south point, was the wreck before mentioned. She was a vessel apparently about 600 tons, had evidently ran on the rocks during the night, and most probably was a wreck as soon as danger became known; she was well up on the reef, with her bottom out, and her anchors at the bows with cables bent. The cables were of coir, from which circumstance, together with her not having any name on her stern, it may be inferred that she was an Arab vessel.

At 1 P.M., we made sail from the anchorage, and had to keep away to pass to the westward of the Baline shoal; this shoal always shows itself by the swell or sea breaking on it; we passed about a quarter of a mile outside of it, and hauled up for Frigate Island, this we passed at a moderate distance, as well as Pearl Island, from which we hauled to the Trade, but passed far to leeward of the North Islet or Albatross Island. These islands, which are not high, bound the main island to the N.W. and N., the whole being situated at the south end of an extensive bank, on which we sounded during the night, in 20 to 50 fathoms; and on the following noon, in latitude 13° 20′ S., longitude 61° 30′ E., had 85 fathoms; the soundings were on coral, sand, and shell. Supposing the last cast in 85 fathoms, to have been on the edge of the bank, it will give a distance of 80 leagues N.E. by N. from the south point of the main island, and 68 leagues for the extent of the bank to the N.E. of the North Islet.

TRISTAN D'ACUNHA.

To the Editor of the Nautical Magazine.

Ship Wellington, on her way to Madras, December 2, 1835.

SIR,—I have observed in two or three numbers of your excellent periodical, notices of the little island of Tristan d'Acunha; and the sympathy I have constantly heard expressed in behalf of the poor islanders, induces me to believe that some recent accounts will not fail to interest many of your readers.

In my outward passage, being driven by a succession of south-east winds far to the south-west, I was gratified by the opportunity offered of renewing my acquaintance with the inhabitants, whom I had previously visited three times. We arrived off the island on the 12th of October, and were immediately boarded by the island boat, containing old Glass, (or the *Governor*, as he is invariably styled there,) and his five companions, who were overjoyed to see us again. When a vessel heaves in sight, the men are always on the alert, and, to attract attention, whenever the ship is sufficiently near to see it, they set fire to a large heap of brushwood, constantly kept in readiness for the purpose.

A large increase of the inhabitants had taken place since our last visit in 1831; the number now reaching 41, exclusive of Glass's eldest son, absent in a whaler. Though they have frequent intercourse with American whalers, I was surprised to find that they had seen no free trader since we called four years ago. As the poor people are entirely dependent on ships for supplies of clothes, and many other necessaries, it may be imagined with what joy an Indiaman full of passengers is welcome.

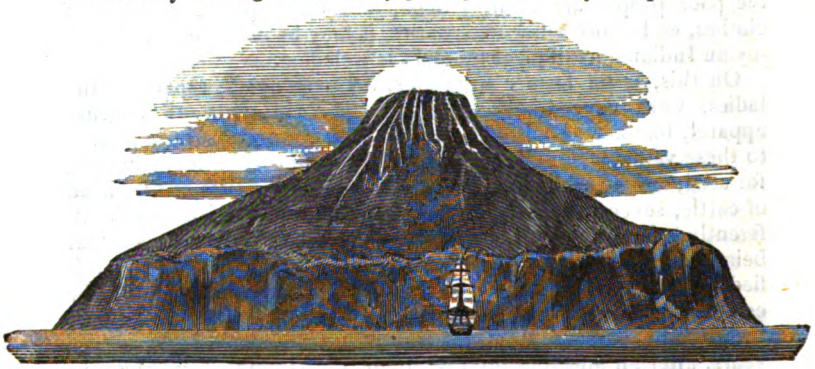
On this, as on former occasions, my passengers, especially the ladies, were exceedingly liberal in their presents of wearing apparel, blankets, books, &c.; and I had great pleasure in adding to these valuable supplies a fine calf, with wheat, barley, and oats, for seed, and a variety of stores. Their stock consists of fifty head of cattle, seventy-five sheep, (which at present thrive but indifferently,) and a large quantity of pigs and poultry. The weather being very fine, all my passengers (except the ladies) were gratified with a trip on shore, when the Rev. J. Applegate, of the established church, took advantage of the opportunity to baptize twenty-nine persons, from the age of a few months to seventeen years, after an affecting address to all the assembled inhabitants. This was the first time they had ever seen a clergyman; and a baptismal register was now left with them. In the uneventful history of their little community, our visit will no doubt form a very important era.

In offering these few details to the perusal of your numerous readers, I am actuated by a hope that some commanders of Indiamen may be induced to call at the island, which lies very nearly in the best route to India, when circumstances permit, as their visits will not fail to confer an incalculable benefit on the poor inhabitants.

The wind happened to be very light during the few hours we hove-to off the island, and the barometer was high, but we had scarcely left it, when a gale came on rapidly from the northward, accompanied with thick rainy weather, and a heavy sea. I mention this as a proof of the great uncertainty of the weather there, and the extreme danger of ever anchoring, as is recommended by a correspondent of yours, signing himself "Albert," in your last January number. He appears to consider it the "St. Helena of outward-bound Indiamen!" but, after a good deal of experience, I have no hesitation in saying that "Albert" is greatly deceived. Though, for the benefit of the poor islanders, I have recommended my brother commanders to call when convenient, I would desire to caution all from calculating with any confidence even on communicating, since, in two instances, when purposing to touch there, the boisterous weather prevented us, and out of our four visits (all in the summer season) the last was the only one in which we were favoured with fine weather.

Tristan d'Acunha is between eight and nine hundred feet high,

and when capped with a cloud, as white as the snow beneath, the island offers a very beautiful view. The rough little sketch* I subjoin, is a faithful representation of this singular spot of earth; and when improved in the style of the admirable lithographs which embellish your magazine, it may perhaps be worthy of a place there.



I would take this opportunity of alluding to a notice contained in your December number, 1833, respecting a "crescent rock" seen by Captain Robson in the bark Ann, on the 18th Oct. 1829, in lat. 37° 35′ S., 7° 30′ E. longitude. I confess I was exceedingly surprised when this account first met my eye, as, on reference to my journals, I found I had twice passed nearly over the very spot, in the day-time. But, sir, when it is considered that this "crescent rock" is situated not only in the direct route of all the outward-bound vessels to the eastward, but also in the very cruising parallel of the American whalers, whose number yearly frequenting that part of the ocean exceeds *three hundred*, may we not be permitted to suspect, with that able and indefatigable hydrographer, Horsburgh, "that dead whales, shoals of devil fish, and other huge marine monsters," are still sometimes mistaken for banks and rocks. Three years ago, within a short distance of the reported site of this "crescent rock," we saw at one time around us *six* American whalers.

If I have not already trespassed too much on your valuable pages, I would offer a remark on the subject of currents, at present so little understood. We have often heard of curious results from bottles† thrown overboard, and I believe your early numbers con-

* We thank our correspondent for his sketch, which we transferred to our wood engraver.

† We have collected some remarkable recent instances of the results afforded by these papers, which we shall shortly lay before our readers.—In the mean time, we hope that the friends of discovery, like Mr. Liddell, will not relax in their exertions in casting these valuable messengers into the sea on their passages. The results will amply repay them for their trouble. Ed. N. M.

tained some singular instances of currents discovered by this method. It has lately occurred to me, that much information might be gained, were ships to practise this frequently; and, under this conviction, I have, during the whole of this voyage, and part of the last, regularly thrown overboard each day a bottle, containing a paper, with the ship's name and situation. To some the expenditure of bottles may appear an object, but it is no consideration to free traders, which often throw away during the voyage some *hundred dozens*.

I am, Sir, your obedient servant,

JAMES LIDDELL.

In your last July number, you inserted a letter of mine on the subject of communicating longitude at sea, recommending the adoption of the method I suggested. Since that time it has been inserted in a new edition of Marryatt's Code of Signals, published by Richardson, Cornhill; and, for the information of those among your readers who have not seen that edition, I give the numbers and explanatory note here.

Part 4. *Sentences.*

No. 1059. What is your Greenwich Time?

No. 1062. My Greenwich Time is

Note. The ship answering or making this signal, will hoist the ensign, and dip it about a minute after; the moment of dipping being noted by the chronometers on board the different ships. The numeral signal for Greenwich time will follow, omitting the *hours*.

DESCRIPTION OF THE CHRONOMETER-TABLE ON BOARD OF H. M. SCHOONER JACKDAW.

A—The Table, figs. 1 and 2, made of a piece of well-seasoned oak, in which circular holes *a*, *a*, are cut, to receive a chronometer. The diameters of the holes are made equal to the outside breadth of the chronometer-box; *b b* are small holes to receive the keys. The plate *c* is made of brass, in the centre of which, on the concave or under side, is the pinion *d*, fig. 2, which supports the table; *e e* are small arms of wood, same thickness as the box of the chronometer; the gimbal-plates on the box are removed to these arms, and they are then let into the table, until the face of the watch is just below the point of suspension of the table, then screwed firmly down.

In fig. 1 *f f* are pieces of lead fixed to the side of the table, to counterpoise the weight of the chronometers when placed in their gimbals, and of course must be arranged accordingly.

In fig. 2, *g* is a small copper funnel, to contain a pocket watch, which is removable at pleasure.

B—is a hollow cone of brass, the thickness increased towards the apex, which is made socket-fashion on both sides, to receive the above ball-point of the pinion *d*, which supports the table; and below, the ball of the pillar c, upon which the motion of the whole acts.

To the under side of the base *h* of the cone, is attached a circular rim of lead *i*, by means of screws.

C—is a brass pillar secured to the deck, and having within it a spiral spring, on which the point of support rests after passing through the collar *k*, which is removable.

The circular plate *l* forming the foot of the pedestal, is screwed firmly to the deck, or other part of the vessel where it is intended that the table shall be placed; and, as the security of the whole depends much on this part of the pillar, it cannot be too strongly constructed.

D E—is a thin piece of brass, formed and placed as in the figure. It has a groove in it, to receive the small brass arm *n* projecting from the side of the table, to prevent it from acquiring a circular motion.

This table was in use on board the Jackdaw, commanded by Lieut. Barnett, from the time of her sailing from England till she was wrecked on Old Providence; and has since been fitted in the Lark, which vessel has replaced the Jackdaw. It has answered fully the purpose intended. ED. N. M.

ON PURSUING DISCOVERIES IN THE NEIGHBOURHOOD OF THE SOUTH POLE, BY MEANS OF STEAM-NAVIGATION.

To the Editor of the Nautical Magazine.

SIR,—I addressed you some time since on the subject of a new passage to India, which might be greatly aided by means of steam-navigation.

Although, in the limits or the space I then felt myself justified in occupying of your work, I could do little more than open the scheme, I felt that the subject was highly entitled to general attention.

Allow me now, through the same intelligent medium, viz. the pages of "The Nautical," to suggest some thoughts upon another point of navigation connected with scientific discovery, which might be prosecuted in a distant region of the globe, by means of the same agent. I now allude to a plan, the practicability of which will not perhaps be questioned—since a steam-boat may live in a rough sea—for endeavouring to reach high latitudes in the Antarctic circle, and clear up a point which has often been discussed respecting an Australian continent.

It may be asked, perhaps, what is the use of prosecuting discoveries in regions where no great or immediate object seems to present itself; such as the magnetic polarity of the needle, or the western passage? It is true that neither of these objects can stimulate the mariner.

But the important question, whether the Antarctic circle is equally beset with ice as the Arctic; whether the same obstacles obstruct the passage to the first, as we know from long-protracted experiments closes the avenues to our nautical discoveries in the other, has not yet been fully decided. The Antarctic regions have, from their remoteness from Europe, seldom engaged the attention of her maritime adventurers, while the Arctic seas have, especially of late, been the theatre of frequent and minute investigation.

Until within a few years previous to the celebrated epochs of Gama and Columbus, the maritime expeditions of mankind were confined within the inland seas which bordered their own and the adjacent countries, for a few hundred miles beyond their own coast. Coasting voyages in the Mediterranean, in the Caspian and Black Seas, circumscribed for the most part the nautical skill of the ancients; for we proceed upon the assumption, that the grand expedition round Africa, performed by Hanno, the Carthaginian, mentioned by Pliny, is fiction and fable. Europe, which, since the first records of authentic history, has ever been the seat of arts and science, was, during the Greek and Roman periods, and for a thousand years after the desolation of the western empire, profoundly ignorant of any navigation but that of inland seas.

In the 12th, 13th, and 14th centuries, the great maritime republics of Italy engrossed for the most part the commerce of Europe that was carried on by sea. They were the common carriers of the great powers engaged in the crusades, to and from the various ports of the Mediterranean, and certainly had attained considerable skill in the tactics which were simply requisite on these waters. The Venetians and Genoese, rival powers, emulated at once the industry with which they each endeavoured to absorb the riches from other countries, and the naval prowess and superiority with which they mutually eclipsed all other contemporary nations. From the last of these famous republics sprung a giant, whose intrepid genius in nautical discovery future ages will probably never emulate. The pomp and grandeur of Genoa had already begun to decline, through the diversion of the trade into other channels, when she matured and sent forth the man who was to add a new hemisphere to the operations of science and mankind.

On the discovery of the mariner's compass, a new epoch arose in the world. Civilized nations were, by means of its wonderful properties, quickly introduced to lands, and hordes of savages, of which the human imagination had never, until then, formed a conception.

From the time of Sebastian Cabot, England has been foremost in nautical discoveries; and the enterprise of Elizabeth's reign fully justified her pretensions in this respect.

Commodore Anson did much for the honour of his country, and for its progress in naval tactics; but it was reserved for the intrepid Cook—a man whose restless and sustained exertions in the work of carrying forward the maritime discoveries of mankind, has scarcely yet been sufficiently appreciated and honoured—to place the ascendancy of England on a yet higher basis.

Since the date of these celebrated expeditions, the importance of which to the cause of geographical science needs no comment of mine, the work of exploring the high seas in unknown latitudes has chiefly been confined to the Arctic regions. A few exceptions have occurred, in which the southern hemisphere has been the theatre of scientific research; and very recently Weddell and Foster have respectively added many important facts connected with natural science, to the stock of already ascertained phenomena. But our chief researches have always been lavished on the frozen climes of Greenland, Labrador, and its propinquities.

From the times of Commodore Phipps to those of Captain Ross, comprising a period of half a century, scarcely a solitary adventurer, except Cook, has sailed to a much higher latitude than Cape Horn; but from the epoch of the first voyage of the last-mentioned navigator, the anticipations and gaze of the British public have been fixed with intense interest on the operations of our northern adventurers. And the results which they accomplished were certainly very important, although the grand desideratum, the north-west passage, seems as far from being accomplished as ever. Many facts connected with the magnetic pole have been ascertained and elucidated, many phenomena observed, the existence of which had never entered the calculations of the human mind. It had, for instance, previously been imagined that the polarity of the magnetic needle received its impulse from an object situated at the axis of the earth, or the point round which it centres. But, from various phenomena connected with the dip and variation of the needle observed by our late northern navigators, they think they have sufficient grounds for ascertaining that this wonderful and hidden property, whatever it be, lies within the 60th and 70th degrees of latitude. This new hypothesis, however, so completely overturns all the previously imagined theories of men upon this subject, opposes in the very teeth what was before considered a settled point, that very strong repeated evidence is requisite to establish its truth. It is possible, nay, it is more than possible, that some circumstances connected with other departments in physiology, may have contributed in some degree to operate on the needle, and to produce this phenomenon. Thus much is certain, that the causes which occasion the dip and variation which so constantly, but so unequally, disturb the polarity of the needle, are as

mysterious as the polarity itself. It was, I recollect, some years since remarked in the course of conversation, by my late friend Col. Macdonel, of Summerlands, near Exeter, that if a navigator, in any given latitude of the north, were, at any given period, to note the variation, and, after some years of interval, return again to the same latitude, he would find the variation of the needle by no means the same. If such be the case, it would strongly indicate the influence of atmosphere upon the needle, and the properties which characterize it might perhaps be sometimes explained by attending more strictly to these phenomena. This opinion indeed has been confirmed by actual observation. The signal and invariable effects which, in the Arctic regions, the aurora borealis has upon the magnetic needle, was almost nightly observed by Captain Franklin, and the intelligent men who accompanied his expedition.

From the narrative, and accurate experiments, of that indefatigable and lamented young officer, Lieut. Hood, corroborated by those of Dr. Richardson, the aurora, whose fires played with greater brilliancy before the gaze of our arctic travellers, than has been observed or spoken of by any former, had a very remarkable effect on the variation of the compass. This singularity likewise seemed generally to attend it, that its influences were the greatest in thick hazy weather. From a variety of observations made upon the subject by Captain Franklin, and his coadjutors, whose patient and minute investigation of the economy and order of this phenomenon do them honour, it appeared that the magnetic needle was disturbed by the aurora whenever it approached the zenith. "It moved," says Lieut. Hood, "slowly by the east or west of the magnetic meridian, and seldom recovered its original direction in less than eight or nine hours. The greatest extent of its variation, or of its alteration, was 45′."

Again, the direction or position of the aurora has a very perceptible, not to say powerful, influence in operating upon the needle. We will hear Captain Franklin while at Fort Enterprize. "The arches of the aurora most commonly traversed the sky nearly at right angles to the magnetic meridian, but the deviations from this inclined direction were not rare, and I am inclined to consider that these different positions of the aurora have considerable influence upon the direction of the needle. When an arch was nearly at right angles to the magnetic meridian, the motion of the needle was towards the west; this westward motion was still where one extremity of an arch bore 301°, that is, when the extremity of an arch approached from the west towards the magnetic north. A westerly motion also took place when the extremity of an arch was in the true north, or about 36° to the west of the magnetic north. A contrary effect was produced when the same end of an arch originated to the southward of the magnetic west; and of

course when its opposite extremity approached nearer to the magnetic north. In these cases, I repeat, the needle was invariably towards the east."

Captain Franklin appears to be decidedly of opinion, that the direction or the aberration of the needle was sometimes produced by other atmospherical phenomena, even, he thinks, by clouds, which were seen to assume the appearance of the aurora. From all these appearances, and from other observations made in the course of the long sojourn of Captain Franklin in the western hemisphere of the Arctic circle, we are warranted in concluding that the magnetic needle is operated upon by causes but very imperfectly known.

The observations and experiments of Captain Parry likewise sufficiently prove that the magnetic needle is often operated upon in ways we cannot account for. The dip and variation are found sometimes capriciously to aberrate as the latter occasionally shifted from west to east, within trifling degrees of longitude. In chap. 4th, p. 112, of his first voyage, he expresses an opinion on this subject similar to that of Captain Franklin. The latitude of the place of observation was 79° 09′ 23″, and the longitude 103° 44′ 37″. The dip of the magnetic needle was 88° 35′ 58″, and the variation was now found to have changed from 28° 58′ in the long. of 91° 48′, where our last observation was taken, to 65° 50′ 09″; so that we had, in sailing over the space included between these two meridians, crossed immediately to the northward of the magnetic pole, and had undoubtedly passed over one of those spots upon the globe where the needle would have been found to vary 180°, or, in other words, where the north pole would have pointed due south.

But, whatever may be the conclusions of scientific men upon a point so new, and so discrepant to old hypotheses, the fact of the polar regions of the north being beset with ice impenetrable by any human skill or activity, seems on all hands established. Then, why not approach the south pole?

A voyage of discovery has been recently made to the southern ocean by Captain Foster, in which many new facts and interesting theories are elicited. As bearing upon the point we are endeavouring to establish, we shall quote a passage from the journal of Mr. Webster, author of the narrative of the expedition performed by this lamented commander:—"None of the little bays or ports," he remarks, "which abound in the neighbourhood of Cape Horn, or Staten Island, are ever frozen up. The sailing vessels which frequent this island have scarcely ever found the brooks of fresh water, so numerous there, in a frozen state for many hours together, and the snow rarely lies for two or three days at a time on the ground. Not only does the thermometer shew the fact, that the southern regions are absolutely milder than the northern, but nature herself asserts it. The Fuegian Indians are perfectly

naked; they care for no dress, and seldom use it. Where this is the case, the cold cannot be very intense. How is it in the corresponding northern latitudes? The Canadian, the North American Indian, the Esquimaux, the Russian, the native of Kamschatka, sufficiently attest, by their warm clothing, the peculiar severity of their respective climates. Again, vegetation, that peculiar and unerring index to the severity of climate in all parts of the world, proclaims the winter of these southern regions to be mild and temperate. Here, in the latter end of May (answering to our November) the face of nature abounded with luxuriance; many of the vegetable tribe were in flower, and every thing wore its cheerful summer aspect." This testimony, both with regard to the north and the south, is certainly cogent, not to say convincing; the facts, perhaps, will hardly be disputed. It is worthy of remark, however, that, as it concerns the south, Captain Foster seems directly at issue with Captain Cook. This last celebrated navigator, whose restless and indefatigable spirit in the prosecution of discovery, whose devotedness to the cause of science, and whose actual services, which were second to no man's, should long ere this have been crowned with a splendid national memorial; has uniformly declared it as his opinion, that the southern parallels of latitude exceed the northern in severity. His description of the isle of Georgia, for instance, situated in the 54th degree of south latitude and the 35th of west longitude, abundantly proves this. "Who would have thought," he says, (vol. iv. p. 199,) "that an island situated between the latitude of 54° and 55° should, in the very height of summer, be in a manner wholly covered with frozen snow, many fathoms deep, but especially on the south-west coast? The very sides and craggy summits of the mountains were cased with snow and ice; but the quantity which lay in the valleys is incredible; and at the bottom of the bays, the coast was terminated by a wall of ice of considerable thickness." "It can hardly be doubted," he further remarks, "that a great deal of ice is formed here in the winter, which in the spring is broken off, and dispersed over the sea; but this island cannot produce the ten thousandth part of what we saw; so that either there must be more land, or the ice is formed without it. I therefore," he concludes, (and he uniformly cherishes this idea,) "had great hopes of discovering a continent."

If the northern parallels of latitude are colder, which indeed seems to be the subject of conflicting testimony, it seems indubitable that the lands which lie so thickly round the north pole, within the arctic circle, are greatly auxiliary of the intensity of cold in these regions. And Captain Parry and Captain Franklin, together with their experiments on the dip and variation of the magnetic needle, for which they merit the thanks of all admirers

of science, have likewise proved the impracticability of approaching the north pole.

But are there in truth no lands in the immediate vicinity of the south pole? The general impression of recent navigators has been that none exist; although much has been occasionally said of an Australian continent. Captain Cook explored the antarctic circle as high as the latitude 71° 10′, and fell in with a frightful and appalling accumulation of ice islands, and closely packed field-ice. He could go no further.

Mr. Weddell, whose bold and perilous exploits some years back, (in not only traversing the north and south Atlantic, but likewise in encountering the icebergs and islands of latitudes a thousand miles in extent, in two small barks,) must ever challenge the highest admiration, penetrated to the latitude of 74° 15′, the highest latitude ever attained in the history of navigation within the Antarctic regions. He decidedly discourages the hypothesis of an Antarctic continent, or of many lands existing in the neighbourhood of the South Pole; though it is observable that he saw unknown coasts to the south of the Shetlands, trending southerly about lat. 64°. But it is also certain that from thence to the highest point to which he or any other navigator ever sailed, 74° 15′, he fell in with no other land whatever, which is certainly some proof that it differs very materially from the Arctic regions in this respect. It is well known that navigators generally attribute the formation of very extensive and compact field-ice to the not very remote propinquity of islands. Now, although Captain Cook fell in with extensive and impenetrable fields of close-packed ice, in latitudes 70° and 71°, it is certain from the report of Weddell, that much higher latitudes are totally free from it. This exhibits a very extraordinary phenomenon in natural philosophy, which should be investigated.

As connected with the temperature of the two frigid zones, it will strike their respective readers that Weddell and Foster are in their testimony somewhat at issue with each other. Although from the unprecedently high latitude which Weddell attained, it may seem that his own discoveries are a little at variance with his opinions upon this point, yet he evidently favours the prevailing opinion of the superior cold of the Antarctic regions. He traversed, by his account, a thousand miles of ocean, part of which was beset with stupendous icebergs, and, although sometimes in imminent peril, yet his ships do not appear, at any time, to have been beset as the ships of our northern navigators, for the last two centuries and upwards, generally have been in the same latitudes. In the very high latitude of 74° 15′, Weddell notices the very important fact, that no field-ice whatever was to be seen, but flights of innumerable birds; and also the very extraordinary circumstance, that in 72° 38′ not a single particle of ice of any

description was to be seen, and the temperature was mild and serene. These facts, so unlike any circumstances ever observed in the northern parallels, are certainly encouraging to the promoters of Australian discoveries, while at the same time they oppose, with some degree of collision, the opinion to which Weddell also subscribed, of the coldness of the southern parallels. The cupola of ice suggested by St. Pierre as surrounding the South Pole, is here exploded; as also is the question, so far as Weddell had the opportunity of doing it, of lands existing near it. Because in the neighbourhood of the South Shetlands, in the latitude 62° or 63°, very much field-ice was invariably found, and in 72°38′ and all above, as in 74° 15′, no compact ice of this description hemmed in his ships, it amounts to a very strong presumption, to say no more, that the seas in high Antarctic latitudes are by no means intersected with lands like the Arctic parallels. The intense cold which prevails for many degrees in the neighbourhood of the Shetlands, doubtless proceeds from this vast accumulation: but the clear seas and comparatively mild temperature which exist ten or twelve degrees higher towards the Pole, (as only *three ice-islands* were in *sight* at this point,) certainly favours the anticipations of Weddell, that "an open field of discovery, even to the South Pole, may crown the endeavours of navigators."

Under these circumstances, is it not, Sir, much to be regretted, that upwards of ten years should have elapsed from the date of Mr. Weddell's unprecedented enterprise, and that no further attempt, officially authorized by the government of a great maritime people, should have been made. Is the field of discovery, so auspiciously opened by a private adventurer of our own country to be left to the science and the skill of other countries? Profiting from our example, other maritime powers nearer to the southern latitudes, may, through the means of steam navigation, endeavour to snatch those laurels which seem to lie within our grasp.

Why not then apply the agency of steam to the high purposes of science, as well as to those of commerce? That it is capable of being so applied, and in certain circumstances with very considerable effect, will strike those who think much on the subject.

A vessel propelled by steam is not encumbered by rigging and sails, which, in steering amongst the stupendous icebergs of the southern frigid zone, is sometimes calculated to impede and delay it in its required course. A steam-ship is worked with precision and facility, whether the wind be favourable or adverse; is arrested without the operose process of anchors; and in all respects she may be thought more manageable in circumstances of peril and difficulty than when loaded with masts and rigging.*

* The author would not, however, here be mistaken. Between a steamer of the largest size and a frigate, rigged and equipped for sea, there exists not the slightest comparison in point of majesty or beauty. The structure and proportion

But it may be asked, probably, what are the great advantages to to be attained by prosecuting discoveries in these regions? If there exist Australian lands, they are probably destitute of inhabitants, and Cook himself declared his opinion, even while engaged in their discovery, that they were lands scarcely worth searching for.

It is indubitably true, that none of the marvels with which the mouths of travellers were filled in the middle ages, could be recounted by our nautical adventurers. Even were there inhabitants farther south, would not their character be still more degraded than that of the wretched wanderers of Tierra del Fuego? The narratives, it may be said, with which Benjamin de Tudela, Marco Paulo, and Ferdinand Mendez Pinto amused listening crowds, and often practised on the credulity of civilized, or rather half-civilized Europe, of splendid Oriental cities, amazing displays of treasure, and customs diverse from any thing previously known among mankind, in Tartary, China, and India, were told in other times: but the age of the marvellous is gone by. Then what again will result from penetrating to very high latitudes in the Antarctic circle? It will neither establish the mysterious point as to the causes of the polarity of the needle, nor will it open a short passage to new commercial marts. But if it will assuredly not do this, is there nothing else that it can accomplish in ascertaining whether the phenomena of high Arctic latitudes reign in the Antarctic. "The aurora borealis," says Weddell, "I particularly looked for during the time the sun was below the horizon, but nothing of the kind was observable." The polarity of the needle likewise, in these latitudes, seems but faintly visible, from some unknown cause. "It appeared evident," says the same navigator, "that the magnetic energy of the earth upon the needle was much diminished when far to the southward, partly, no doubt, arising from the increased dip or diminution of horizontal action in the needle, which must be attracted in an increased degree by the objects immediately about it."

Every thing, sir, on the other hand, which can reasonably be expected to be done in the work of discovery in the Arctic regions, seems to have been done. Captain Ross, Captain Parry, and Captain Franklin have, with unwearied patience and skill, explored these seas. The climates, coasts, and all the various phenomena connected with those bleak, inhospitable regions, have been ascertained, and carefully noted, by the science and the adventure of these commanders; the first of whom, however, in his late voyage, very narrowly escaped the untimely fate of Sir John Willoughby and his crew, who were frozen up in the Bay of

of the last constitutes her among the finest objects of art, but the first assumes in appearance a very ordinary junk. The only point in question, now, is, which is the most available, under these circumstances, for the purposes of discovery.

Archangel. No one can read the narratives of their respective expeditions, without being struck at once with the capacity of painful endurance with which humanity is endowed, and the cool and cheerful intrepidity with which they combated evils, which, to more ordinary minds, would have been absolutely invincible. Increased facilities, then, we contend, are offered, through the agency of steam, of exploring the southern regions to higher latitudes even than those attained by Weddell.

If it should be objected that the very remote locality of England from the scene of discovery here suggested, furnishes a serious impediment to its prosecution, it may be rejoined, that a sort of depôt might be formed on an eligible part of the southern coast of Tierra del Fuego, sheltered from the stormy and impetuous gusts, and mountainous swell, which at certain periods sweep round the neighbourhood of Cape Horn. Several positions or stations offer themselves for purposes of this kind, but none more secure or commodious perhaps than Indian Cove in New Year's Sound. A sumpter ship from England might accompany the steam vessels with necessary freightage and stores. A three years' expedition, from leaving the shores of England, would, perhaps, be necessary; but if a farther time were requisite, there would be no difficulty in arranging it. These stores might be disembarked on the Fuegian coast, which spot might form an excellent victualling port for the Australian adventurers.

The South Shetlands, indeed, would be ten degrees, or thereabouts, nearer to the South Pole: but its drear and frozen character—(a country destitute of animal or of vegetable life,—without soil, but reared in columns of impenetrable rock, enclosing and producing large masses of ice—shorn even of the comforts of inhospitable Greenland,) is utterly unfit even for this purpose.

In times of profound peace, is it too much, sir, to expect that the first naval power on the globe should traverse the globe in pursuit of science as well as of commerce?

Like Tyre of old, she holds the reins of universal commerce in her hands, and covers the ocean with her ships. Like her, England, rich in the spoils or in the productions of distant climes of the earth, sends her fleets to colonize remote lands, and plant her standard, her arts, her language, her religion, among people diverse from her own, to whom she extends the blessings of her laws, and the panoply of her protection.

Enlightened by a policy of superior growth, her zeal in the cause of science is more universal. In more than solitary instances, she has proved, and that recently, that the sentiment uttered by Lord Byron is not always true,

"Tho' commerce fills the purse, she clogs the brain,"

by turning her naval and commercial power and riches to purposes of high scientific research. Her star is yet in the ascendant, while

that of her great maritime rival, Holland, has been on the wane. Will she not make use of that ascendancy in turning the advantages of steam-navigation to the ascertainment of truths in philosophy, as well as to the facilitating commercial intercourse?

The papers of the day, sir, have of late teemed with projected schemes of railways. Nothing seems, in the estimation of some projectors, and of many capitalists, who are often their dupes, so prolific in anticipated gains, or to give such promise of such valuable benefit to the community at large. The South Sea mania, and the mining mania, has been followed by the railroad mania. It is not by any means impossible that the air-balloon, or the steam-balloon, (for rapid travelling seems the order of the day,) may in its turn drive out the present mania.

Cannot we, sir, amidst the profusion of our wealth, devote a portion of it to the purposes of science, even if no pecuniary reward should appear likely to follow it?

I am, Sir, yours, &c.

Melksham, Oct. 15th, 1835. E. P.

Conclusion of the Reply of Mr. Henwood to Mr. Allan's Observations.

To the Editor of the Nautical Magazine.

Sir.—Mr. Allan has commenced the second part of his observations on page 145, of the last number of the Nautical Magazine, by repeating, as an assertion of mine, that which on page 151 I have distinctly denied as having been stated by me, in any part of the paper which this writer has thought proper to attack. I beg, sir, to refer your readers to the "United Service Journal" for November last, for a proof of the inaccurate manner in which Mr. Allan has quoted from that paper.

Mr. Allan proceeds to inform your readers, that he has "shewn that the motions of pitching and 'scending can never occur while the ship floats at the water-line A B, (fig. 2, p. 36.") This, sir, appears to me a most remarkable performance. Unless I very much mistake, Mr. Allan has actually "shewn" that that "never can occur," which it would be the extreme of folly to suppose ever can occur. But it seems that pitching and 'scending never can occur whilst a ship floats at the same water-line, "unless some sudden change should take place in the disposition of the weights." Mr. Allan, of course, intends, "the disposition of the weights" longitudinally. This phrase "unless some sudden change should take place," &c., renders the whole sentence, of which it is a part, a mass of confusion. If Mr. Allan means what he has expressed, he must be of opinion, that a ship cannot pitch or 'scend whilst she floats at *the same water-line*, unless she is

suddenly so transformed as to become, by a change in the disposition of her weights, virtually, another ship.

This writer also says he has "shewn that when the water-line assumes some new position, as C D E, fig. 2, p. 36, the tendency of the body to motion is measured by the difference between the moments, $x \times fc$ and $z \times ab$." By "the tendency to motion" must, it appears, be meant that which Dr. Lardner, as quoted on page 145 calls "the power to produce rotation," or, "the moment round the axis." If the reader will take the pains to consult article 84 of Dr. Lardner's work, of which the extract on p. 145 is the concluding part, he will find that "the moment of a force round the axis," is the mechanical power of a force acting on a body on one side of its axis, in maintaining an equilibrium with another force on the opposite side of the axis. But this "moment" does not measure the force with which a body revolving on an axis would strike an opposing obstacle, like a ship in the act of pitching would impel her bow against the water, as Mr. Allan appears to suppose. No one could have entertained such a notion, who had examined the two or three following pages of Dr. Lardner's work, or had been well read in the subjects taught at the School of Naval Architecture. If page 137 of Lardner's Mechanics had been referred to, it would have been found that when a revolving body receives an impulse, as a ship does when she is made to pitch, the effects of the forces acting on the body or ship, in producing, or in resisting rotation, are in proportion to the "moments of inertia" of those forces, and not to the "moments." The moments round the axis in all ships are necessarily equal; whilst the moments of inertia have always been unequal.

It is most extraordinary that Mr. Allan should call this erroneous statement a result of an "investigation which coincides with those (results of investigations) of writers on mechanics, as the extract from Dr. Lardner's Cabinet Cyclopedia, p. 135, will sufficiently prove." It very unfortunately happens for Mr. Allan, that the extract he has taken from Dr. Lardner can prove nothing. The extract is neither more nor less than a definition of "the moment of a force round an axis." And most certainly a definition can never prove that one investigation coincides with another. The result of one investigation may be compared with that of another, but no intelligible comparison can be made between a definition and an investigation. They are things essentially different; and would, if I mistake not, be considered by mathematicians as things not homogeneous.

Mr. Allan, however, goes on to say that "This, (the moment of the force round the axis,) then is the cause of motion, and measures the tendency of a body at rest to commence motion." "This," I must beg leave to assert, notwithstanding Mr. Allan's italics, is not the *cause* of motion; and "this" does not measure

the tendency of a body at rest to commence motion. Surely, Mr. Editor, this is the first time we have been informed that a body at rest has any tendency to commence motion. Mr. Allan appears to have forgotten the former part of "the first law of motion," which is, that "a body at rest will continue at rest till it is acted on by some external force." Wood's Mechanics, p. 19. The *cause* of motion is the "same external force." It may also be mentioned that the "moment of inertia," according to Mr. Allan on p. 145, is not the same thing as the "moment of inertia," as defined by Mr. Whewell, Dr. Lardner, and mathematical writers in general.

I proceed, sir, to that part of the "observations" which appears designed to shew that I have erroneously estimated the forces of pitching and 'scending. Mr. Allan has made the two following statements on pages 146 and 147, as the conclusions derived from his own reasonings,—

Page 146.—"In calculating, therefore, the effects of the moments of the parts of a body in motion round an axis, it is evident that if the moments of those parts on *one* side of an axis which are moving downward be considered as positive, the moments of those parts which lie on the *other* side of the axis, and whose motion is consequently upward, must also be estimated as positive, and the *sum* of the two will be the moment of inertia of the whole body, not their *difference*, as Mr. Henwood has attempted to prove."

Page 147.—"I have shewn ..... that the moment which gives the ship a tendency to pitch or 'scend is ascertained by multiplying the weights of the fore and after bodies by the distances of their respective centres of gravity from a vertical plane passing through the axis of rotation; the difference between these two moments will be the '*moment of the force round the axis*,' which causes the ship to *pitch*, or '*scend*, according as the *fore* or *after* moment is the greater."

I suppose, Mr. Editor, it will be considered by your readers unnecessary for me "to attempt to prove that these statements are directly contradictory the one of the other: and, if so, of course it will be proper to wait till Mr. Allan shall have re-considered the matter, and stated his more matured conclusion.

Respecting the question, whether the displacement of a ship is the same in an agitated sea as in still water, I will merely observe, that I should readily admit the justness of Mr. Allan's observations on this point, if ships, when in a sea, did actually 'fall *bodily*,' like 'a wedge-formed body' 'from a certain height.'"

The next observation to be noticed is from page 147. Mr. Allan states, that it "appears, then, that no correct or definite conclusions can be drawn from calculations which ascertain only the

positions of the centres of gravity of the displacements of the fore and after bodies, unless it could be proved that those points were in the same vertical planes as the centres of gravity of the fore and after bodies of the ship." Now, it is evident that "these points" are in the same vertical and longitudinal plane as the fore and after bodies of the ship: and, as I have stated on page 153, these latter points are always much farther from the axis than the former, and cannot therefore be in the same vertical and transverse plane. It is not stated in the observation just quoted, what "vertical planes" are intended; and this omission renders Mr. Allan's statement altogether ambiguous. But whatever vertical planes are meant, it is a perfectly gratuitous assertion that "no correct conclusions can be drawn from" the calculations referred to.

That Mr. Allan entertains very imperfect and erroneous notions respecting the principles upon which the calculations in question have been made, is sufficiently apparent from the two directly contradictory statements above quoted from pages 146 and 147. Of the object of those calculations I may be permitted to remark, that they were made for the purpose of ascertaining the positions of the centre of gravity, or axis of rotation, in several of the most approved ships of the British navy. And my best acknowledgments are due to Mr. Allan for the loan of the draughts of the Rover, Rodney, Vengeance, and two or three other ships, from which the calculations are made.

By a reference to those calculations, it will appear very obvious that the best position for the the centre of gravity has never been ascertained. It is indeed notorious, that, in the writings of naval architects, no attempt has been made to find the best situation for this important point. Ships have always been constructed with their centres of gravity at an accidental or arbitrary distance before the middle point of their length. And owing to this circumstance, and also to the want of a scientific system of stowage, all ships (as I have asserted) hitherto built, (with possibly a few accidental exceptions,) although not lop-sided, are, nevertheless, lop-ended: and this, Mr. Allan cannot disprove. It is thus apparent that the practice of naval construction, according to the most approved published methods, has been, in reality, a merely arbitrary or empirical procedure. The consequence of a ship's axis of rotation not being placed in the best position, is, that she will pitch or 'scend more, be more laboursome, and sail less fast, than she would if the best situation for the axis had been found.

The determination of the best position for the centre of gravity of a ship, is certainly therefore the first necessary step towards arriving at a better mode of constructing ships: and to attempt to form a ship before this point is decided, must, I think, appear to every one who considers the subject, like a blind resolution still to grope onward in the ancient venerable beaten path of darkness,

uncertainty, and empiricism. The method by which the best place for the axis may be found, has been clearly explained in my papers in the United Service Journal, and in the Nautical Magazine. If Mr. Allan could indeed demonstrate that a ship, if constructed as I have proposed, would not have her tendencies to pitch and 'scend reduced to a minimum; his demonstration should be hailed with entire satisfaction: because it would tend, at the least, to divert from an erroneous course, if it should not at the same time direct to the true road of real and practical improvement in the construction of ships. Mere assertion, however, will not be accepted as a substitute for logical reasoning.

It appears to have been considered necessary that I should have found the centres of gravity of the weights of the fore and after parts of a ship. Mr. Allan says, p. 147, that "in those calculations which are to stamp the characters of twenty ships of the British navy," I have "omitted even an approximation to the positions of those points."

To say nothing of the difficulty or impracticability of my having found, even approximately, the positions of the points in question, in the ships in my table of calculations; which circumstance Mr. Allan cannot but be fully aware of; it would have been gross folly to have made the attempt. It will, indeed, as I conceive, never be requisite to find the situations of those points in any ship. The only stipulated condition respecting them is, that they shall be equidistant from the axis: and the more nearly they can both be brought to the axis, the better. If, however, as Mr. Allan says, my calculations are to stamp the characters of twenty ships of the British navy; they will assuredly be regarded as possessing some merit: since the difficulty, hitherto, has been, *fairly* to stamp the character of any ship. Ships which by some persons have been supposed to possess superior qualities, have been much less highly esteemed by others. And any mode by which the true character and best qualities of a ship could be made irrefragably manifest, would be unquestionably valuable. It is sufficiently certain that ships will never be made to exhibit their full amount of good qualities, until the best mode of stowing them shall be known and practised.

But it seems also, that "on those calculations" I have "condemned many of the ships, and impugned the characters of their constructors as deficient of science, with a want of that modesty which would have well become a juster cause." The insidious aspect of this quotation will, I feel persuaded, be obvious to every candid reader of my papers in the United Service Journal.

I pass on to the observations respecting H. M. ship Pique. Mr. Allan's account of the alterations made by Captain Rous, in the raking of the Pique's masts; and "filling her empty tanks with *sea-water*," may be perfectly correct: and, if so, I was "falsely

led to believe" that she discharged a large portion of her sea-store of fresh water. But, I would ask, can the necessity of bringing the Pique some eighteen inches more by the stern than she was intended to swim, "be cited as a decisive proof of the correctness with which she had been originally balanced?"

Whenever we speak of a *ship being balanced*, we have reference to her being poised on her transverse axis. But when the proper disposition of the masts and sails alone is intended, it is by no means proper to employ the same mode of expression, because of the liability of conveying an erroneous impression to the minds of others. Whatever the "*fact*," Mr. Allen has mentioned, may prove, it most certainly does not prove that the Pique was balanced in the manner I have endeavoured to show that all ships, henceforth, ought to be balanced. Were a ship to be balanced as I have proposed, there would never be a necessity to unstow the hold, in order to bring her to a new draught of water by the head or stern. A necessity of doing this, at any time, proves that a ship has not been balanced. All that is shewn by Mr. Allan's statement is, that the Pique's masts and sails must have been judiciously disposed by her constructor, so as to balance the action of the wind on the sails, and the oblique resistance of the water on the bottom of the ship, on her *vertical* axis. But to this axis, my paper in the United Service Journal has no reference whatever.

The "fact," however, which Mr. Allan intimates "is worth a thousand conjectures," happens to be one of those "false facts" of which a learned writer has declared there are more in the world than false theories. According to the stated alteration (p. 149) of the rake of the Pique's masts, "the centre of effort of sail" could not have been carried aft more than about two feet; (certainly not more than two feet and a quarter;) instead of the distance of "*five feet*;" which Mr. Allan has so pointedly distinguished as the correct distance, "the centre of effort was carried aft." One might almost be tempted to suppose that Mr. Allan had actually himself been "resorting to guesses," when he deliberately stated that the centre of effort "was carried aft *five feet*."

I remark, sir, in concluding, that whenever Mr. Allan shall again think proper to insinuate that I have "resorted to guesses," it will be but fair that he should point out where the "guesses" are to be found.

I am, sir, your very humble servant,

W. HENWOOD.

Portsmouth Yard, March 10th, 1836.

THE LATE EARTHQUAKE IN CHILI.—EFFECTS ON THE ISLANDS.

(Concluded from page 144.)

1. Santa Maria.—Besides suffering from the effects of the earthquake, and three invading waves which, coming from the west round both points of the island, united to overflow the low ground

near the village; Santa Maria was upheaved nine feet. It appeared that the southern extreme of the island had been raised eight feet, the middle nine, and the northern end upwards of ten feet.

The Beagle visited this island twice, at the end of March, and in the beginning of April. At her first visit it was concluded, from the visible evidence of dead shell-fish, water marks, and soundings, and from the verbal testimony of the inhabitants, that the land had been raised about eight feet. However, on returning to Concepcion, doubts were raised; and to settle the matter beyond dispute, or the possibility of mistake, the owner of the island, Mr. Salvador Palma, accompanied us. An intelligent Hanoverian, whose occupation upon the island was sealing, and who had lived two years there, and knew its shores thoroughly, was also a passenger in the Beagle.

When we landed, the Hanoverian, whose name was Antonio Vogelborg, shewed me a spot from which he used formerly to gather choxos * by diving for them at low water.

At dead low water, standing upon that bed of choxos, and holding his hands up above his head, he could not reach the surface of the water. His height is six feet; on that spot, when I was there, the choxos were barely covered at high spring tide.

Riding round the island afterwards, with Mr. Palma and Vogelborg, many measures were taken in places, where no mistake could be made.

On large steep-sided rocks, where vertical measures could be correctly taken, beds of dead muscles were found ten feet above the present high water-mark.

A few inches only above what was taken as spring tide, high-water mark, were putrid shell-fish and seaweed, which evidently had not been wetted since the upheaval of the land.

One foot lower than the highest bed of muscles, a few limpets and chitons were adhering to the rock, where they had grown.

Two feet lower than the same muscles, chitons and limpets were abundant.

An extensive rocky flat lies around the northern parts of Santa Maria. Before the earthquake, this flat was covered by the sea, some projecting rocks only shewing themselves. Now, the whole flat is exposed. Square acres (or many quadras) of this rocky flat were covered with dead shell-fish, and the stench arising from them was abominable.

By this elevation of the land, the southern port of Santa Maria has been almost destroyed. There remains but little shelter: and very bad landing. The soundings have diminished a fathom and a half every where around the island.

* A large kind of muscle.

Tubul.—At Tubul, to the south-east of Santa Maria, the land has been raised six feet.

The waves did not enter that river's mouth until about one o'clock; and then in greater number, but with less force. Six or seven waves were counted. Might not this be owing to the meeting of the divisions of that great wave which passed around the island of Santa Maria?

I. Mocha.—At the island of Mocha the shock of the earthquake was so strong that people could not stand. The sea washed over the rocks at the end of the island, higher than it had ever reached in a heavy gale of wind.

Antonio Vogelborg was on one of those rocks, or rather on an islet at the south end of Mocha, at the time. A party were with him, sealing. Their boat was hauled up upon the top of the rocky islet. They expected to be washed off, and held by the boat, in readiness. The boat was lying nearly east and west. During the earthquake, some water in her bottom ran quickly from one end of the boat to the other, as if some one were quickly lifting one end off the ground, and letting it down again. It did not wash from side to side at any time. Two forked sticks were stuck in the ground, about three yards apart, another lay across them for hanging things to dry. These sticks, also, were nearly east and west of one another. During the shock they waved to and fro till the forks touched, and the cross stick fell. Strong shocks were felt by vessels under sail near Mocha. Between Mocha and Concepcion shocks were felt by several vessels, not only on the 20th, but during the following days.

At anchor off Mocha, on the 24th, a shock was felt which resembled the sudden dragging of the anchor over rocks.

Under way on the 2d of March, it was thought that the chain cable was running out at the hawse.

In one vessel, they thought she had run ashore; on board of another, that the ship had passed over a whale. Vogelborg thinks the land has been upheaved about two feet. From his accuracy in other matters, I am inclined to trust to his opinion.

Valdivia.—At Valdivia the shock began gently, increased gradually during two minutes, was at its strongest about one minute, and then diminished.

The motion was undulating and regular, like waves rolling from west to east, but strong; it lasted nearly ten minutes. There was no difficulty in standing or walking, but the houses waved and cracked.

The stone church tottered, but was not injured; its roof is very light. All the dwelling-houses, being strongly built of wood, withstood the shock.

Some thought the motion was from south-west to north-east, but Mr. Darwin, and a person with him at the time, thought the reverse. The river swelled, or rose, at the same time, and quickly

fell again to its former height. In the port the sea swelled suddenly upon the shore, to high-water mark, though it was then nearly the time of low water, and quickly fell again. Both sea and river rose and fell frequently, during the remainder of the day. The river never fell below its usual height, neither did the sea retire beyond its proper place, at that time of tide; but each swelled from time to time, and again sunk down. This happened once or twice in an hour. After the great shock, other slighter ones were felt, at intervals of a few minutes, during an hour.

In the afternoon, at about five, a smart shock was felt, which made the people run out of their houses.* One man and one woman were drowned by the sudden rise of the sea, near Fort Niebla; it was supposed that they were upon the rocks, gathering shell-fish. Excepting in this instance, no injury was done at Valdivia.

No noise preceded or accompanied any of the shocks.

I. Chiloe.—The great earthquake now under consideration extended to the island of Chiloe, and probably still farther to the southward. The shock was there slight, but lasted during six or eight minutes; it was neither preceded nor followed by any subterranean noise. At about thirty-four minutes after eleven,† the beginning of the shock was felt: the motion was undulating, and not strong. The swell of the sea was felt there, but I know not at what time. A man was going to leave the shore‡ in his boat; he went a short distance to fetch something, and returning found the boat aground and immoveable. Puzzled and vexed, he went away; but had not gone many yards before his son called to him that the boat was afloat.

Northward of Concepcion, Coliumo.—In the little port of Coliumo, close to the northward of Concepcion Bay, the waves rose about as high as at Tomé, nearly fourteen feet, before they reached the shore. The little village of Dichato shared the general calamity; but standing rather higher, and more distant from the sea than Talcahuano, it escaped the ravages of the sea.

Maule.—The force and height of the waves must have been considerably diminished at the mouth of the Maule. No particular effect had been noticed at the time, nor were there any marks upon the shore by which the height of the wave could be afterwards ascertained.

That the sea should not there have occupied attention is not surprising, when one considers the locality of "La Constitucion," as the town and port are called. On level low land, at the south side of the river, is the town. Between the town and the sea is high land, and a distance of about a mile. The river winds round the northern promontory of the high land, and then fights its way to sea over a bar on which there are always breakers.

* Although built of wood.

† Mean time.

‡ Sandy Point, San Carlos.

Without going half a mile, and up the hill, the sea cannot be seen. There are no houses on the sea shore. Naturally, then, for some time after the town was ruined by the earthquake, the inhabitants would be engaged in saving and sheltering their property, rather than looking at the sea. I could not ascertain whether the river had risen or not. A vessel lying close under the promontory mentioned above, was obliged to move as quickly as possible when the shocks began, so serious was the shower of stones which rattled down the hill, and fell about and on board of her. I was assured by the governor, by the chief pilot, and by other residents, that instead of the land having been elevated at all, they considered that it had sunk about two feet. The pilot said that he had found two feet more water on the bar, since the great shock; and that he was certain the banks of the river were lower, though he could not say exactly how much. A rush of water might have shifted the loose sands of the bar. Whether the land had sunk, seemed to me very doubtful. Certainly, however, it had not risen.

Having previously heard that the waves had been very powerful at the mouth of the Maule, I was a good deal surprised to find they had been almost unnoticed. All attention had been engrossed with the earthquake.

*Juan Fernandez.**—The island of Juan Fernandez was affected very much. Near Bacalao Head, an eruption burst through the sea in a place about a mile from the land, where the depth is from fifty to eighty fathoms. Smoke and water were thrown out during the greater part of the day; flames were seen at night. Great waves swept the shores of the island, after the sea had retired so much that old anchors were seen at the bottom of the anchorage.

This earthquake was felt at all places between Chiloe and Copiapo; between Juan Fernandez and Mendoza. On the sea-coast within those limits, the retiring and swelling of the ocean was every where felt. At Mendoza, the motion was evenly gentle. Copiapo, Huasco, and Coquimbo felt similar, although rather more forcible, undulations. On the continent, towns and houses which lay between the parallels of thirty-five and thirty-eight, suffered extremely; nearly all were ruined. Northward and southward of those parallels, slight injury was done to any building.

In the parallel of thirty-three and a half, Juan Fernandez suffered; yet Valparaiso, opposite, escaped uninjured. A person interested in the subject of the preceding notes would inquire into the state of neighbouring volcanoes. So various and indistinct were the accounts of their action after and before the earthquake, that as yet I have had no means of ascertaining the truth.

B.

* See further account in p. 624 of our last volume.

The Construction of Merchant Shipping.

To the Editor of the Nautical Magazine.

Sir,—I am a reader of your valuable work, and much admire that liberality of mind which actuates many of your worthy correspondents; in particular, those nautical gentlemen who in your pages give publicity to many useful remarks on foreign ports and places of danger, with which very few have opportunities of being acquainted. It is gratifying to find liberal education exercised in such laudable pursuits, to see what labour these gentlemen have undergone, what time spent, what genius employed, to increase the general stock of useful knowledge, and to avoid dangers formerly unknown, without any other end in view than the national prosperity.

It is pleasing to find that more than three-fourths of your correspondents are of this character. This large majority of national schoolmasters, I shall take the liberty to term your First Class; and it would be a still higher degree of gratification if all those who wish to appear in your pages were equally patriotic. But we may not overrate human nature: the long-looked-for millennium is not yet commenced; and even among your correspondents there are to be found some of such gloomy anticipations as to think all is going wrong; and, in this spirit of jealousy, imagine business to be carried on under a mask of deception, bribery, and ignorance, that no confidence can be placed in any tradesman. They cannot be persuaded that the world around them is in that progressive state of improvement which the more penetrating part of the community believe.

This small portion of your correspondents, I shall call your Second Class; but there is also a Third Class, who, in consequence of the dastardly conduct of the second, are with much reluctance compelled to appear in your pages in their own defence. I am sorry to say, in this class stands your obedient servant; and, as you have given a place in your magazine to my traducer, I trust your candour will grant the same privilege to me.

The subject I allude to is in your fiftieth number, in this present year, page 227 to 236, where the writer begins his rhapsody by addressing honest John Bull, in language rather indecorous for that noble personage. From John Bull he rambles over the corn-laws, glances at the art, or want of art, in the practice of constructing ships, complaining that those who have pointed out their defects have not suggested any method for their improvement, and he most generously undertakes to supply this deficiency himself. In place, however, of redeeming this pledge, he passes on to his more favourite theme, (sea insurance,) and almost immediately pounces on some gentlemen about Kirkcaldy for pamphleteering; and even you yourself, Mr. Editor, he accuses of being a little

sceptical regarding the purity of the assurers' motives. Allow me to observe, that the mind of the writer will be better understood when he has proceeded a little further; when he comes to treat on the subject of the Berlin and Milan decrees, his sensibility is aroused, he becomes more lively, and declares in strong language, that "bribery became necessary;" and thus all went well for a time; speculators made fortunes, and underwriters were bewitched. But, like all sublunary things, these golden days passed away, a change took place when bribery could no longer be afforded,* and, for an account of the disaster that followed, I refer the reader to the writer's own words in your magazine, with an earnest wish that all bribery may share the like fate.

If I may be allowed to express a conjecture, I do think that from the date of the last-mentioned disaster, the writer has spent from twenty-five to thirty years in a state of torpitude, if not exile, as he takes no notice of any incidents that took place from that period until nearly the present time. In proof of this opinion, I adduce his entire ignorance of what is just now performing in the northern building-yards to which he alludes. His description of north-country building is nearly what was done in the merchants' yards throughout all England about fifty years ago, although it bears no resemblance to the improved state of the trade in the present day. Your correspondent stoops to harsh terms, and the use of opprobrious names, such as "barbarian," "insane," "stupid," "ignorant," and "an inconceivable degree of ignorance." This is also the low ribaldry of half a century back.

The writer goes on to state the method of procedure in placing the timbers in what he calls the skeleton of a ship, and declares "these frames are absolutely unattached to the bottom." To a person unacquainted with the practice of ship-building, this language is quite ridiculous, incapable of definition, unless it may be understood as an example of "an inconceivable degree of ignorance." After expatiating on unattached masses of timber, he invites the "uninitiated" to visit the king's yards, where they will see a ship-of-war in frame, without any planking. This language implies that ships are not to be seen in frame but in the king's yards. If your correspondent could have any pleasure in a visit to the north-country builders, although there are no king's yards in that quarter, he would see ships completely in frame without either riband or riccar, and might get a lesson as suitable for *his capacity*, as at Deptford or at Portsmouth. Such a visit might not only remove his unfounded prejudice, but might also store his mind with ideas much more liberal than the antiquated dogmas of a past age.

* Your correspondent does not inform his readers, whether the underwriters gave or received the necessary bribe; but from the feeling manner in which he expresses himself, it may be inferred that he paid his part of it.

We have some excellent testing machines here for proving the sufficiency of our mercantile shipping:* I think your correspondent will have a desire to see them. They are very sure in their operations, and require no great stretch of genius to comprehend them; they have always been considered competent proof of well-built ships; perhaps they would make some discoveries if they were properly applied to his Bristol-built vessels, and even your river-built ships, which your correspondent surmises are built more with a view to the repairs (which he calls "real business") than for any other pecuniary advantage.† If even these had our *touchstone*, scientifically applied, they might be found nothing above proof.

As a transaction in which I was engaged in the earlier part of my life is so applicable to the subject in hand, I take the liberty to trouble you with a short account of it.

About forty-five years ago, being then concerned in a small business in the ship-building line, and having occasion for a supply of English oak timber, I set out for Southampton by land, taking London in the way. I entered the metropolis early in the morning, and took a hackney-coach to Downs' Wharf, expecting to see some of my sea-going acquaintances. Not finding any, and being resolved on spending at least one day to the best account possible, I applied to a Mr. Parnell, a mathematical-instrument maker in that neighbourhood, and he procured for me a guide, that I might see some of the building yards, and also some of the breaking-down yards. After breakfast I crossed over to the side of the river, where a ship was building, said to be intended for the trade to India, about six hundred tons register; the main walls and top-sides were planked, both tiers of beams in and bound, and decks partly laid, her bottom from the keel to the bilge was planked, and from the bilge to the main-wales was not, consequently her framing timber was full in view. Every fourth floor timber supported a frame, which consisted of first, second, and third foothooks, and top timbers on each side; all the rest of the intermediate timbers were fitted in, and supported by ribands and shores; I do think the number is not overrated when I say, there was an hundred on each side. Just as I had closed my remarks, a coach drove close to the gateway, and a jolly well-dressed gentleman stepped out; his shoulders were white as snow with a redundancy of hair-powder; he proceeded with a princely step to the foot of the gangway; by a motion of his cane, the foreman was at his left hand in a twinkling: my guide whispered, "This is the master-

* I mean large blocks of our Aberdeen granite, from two to twelve tons in one piece, many thousand tons of which our mercantile shipping carry to London, where they compose the most substantial part of your docks and bridges.

† Where repairs are acknowledged to be the chief object in view, is there not some reason to suppose that motive may influence the builder?

builder." To a Scotchman direct from the North, this was an interesting incident, which penetrated deeper than either the eye or the ear; and it occurred to me at once, if such a small spot of ground on the side of the Thames can uphold so much grandeur, what may I not do on an open field on the banks of the Dee?—The scene exalted my ideas, gave a mighty pull up to my courage: I believe it was nothing against the interest of my guide: I settled with him in the afternoon, and in the evening set off in good glee for Southampton.

From that day to the present, I have occupied a place in the ship-building line with various degrees of success, according to the ever-changing causes that affect the trade.*

I have always settled amicably with both debtors and creditors; and for thirty years I neither gave nor received a summons. Nature has furnished me with a substitute for hair-powder, and taught the real use of the cane;—but I have not got the coach.

I am, Sir, your most obedient servant,

A NORTH-COUNTRY BUILDER.

Aberdeen, 26th April, 1836.

NAUTICAL DIRECTIONS FOR THE NORTH COAST OF CEYLON.

By Mr. Twynam, Master Attendant at Galle.

OUDAPITTA POINT, in lat. 6° 25′ 15″ N. long. 80° 7′ E. is rocky and of moderate height, having several rocks above water lying off it; it bears from the outer part of Berberyn I., S. S. E. ½ E. three miles: — W. N. W. ½ a mile lie some rocky islets called Anderan rocks, having six and seven fathoms water close to outside, and four to five inside; but several rocks, having only three and four feet water, lie between them and the shore.

BENTOTTE RIVER'S ENTRANCE, is about ¼ mile N. of Oudapitta Point: this river is shut by a bar, on which, in March 1830, there was only three and four feet water; but this depth varies considerably, being much greater after heavy rains, when the bar becomes navigable for Dhonies: inside the river there is one and two fathoms water: as the sands on the bar shift frequently, and there is generally a surf on it, boats should not attempt to cross it without a pilot. The north bank is low and sandy, but the south point is a rock of moderate height called Modere Galle Point, between which and Oudapitta Point there is a sandy beach.

* Shipbuilding will never be a flourishing trade in this country while pressed down with heavy import duties, amounting to nearly double the prime cost; whereas neighbouring countries have their materials not only free of duty, but at a much less first price. It ought not to be said that our English oak timber and plank are free from duty: they do, and ever will, advance in price, in proportion to what is laid on foreign oak; and in this indirect manner honest John Bull pays an oppressive tax for his own English oak, to build and repair his own ships for his own defence!

UNAPAYAGALLE POINT, is low and rocky, and bears from Oudapitta Point, S. by E. ½ E. three miles: S. W. ½ S. ¼ mile, lies Keerevanne rock, a small white-topped rock: and ¼ mile N. W. of the point, and ½ mile off shore, other rocks above water, called Dodampana rocks: between these last and Oudapitta Point lie several rocks having from three to six feet water on them, from ¼ to ½ a mile off shore: outside these rocks there is five and six fathoms water, sandy bottom, with occasionally patches of coral.

AHUNGALLE POINT, bears S. by E. ½ E. 3¼ miles, from Unapayagalle Point: this is a low rocky point, the southern extreme of some rocky cliffs extending about half a mile, the northern end being of considerable height, and called Rosgodde hill; on the summit of the cliffs near Ahungalle Point, there is a house conspicuous from sea-ward. Off these two points, and the coast between them, lie two rocky banks, the north end of the northern one (OUTAREE BANK,) bearing from Unapayagalle Point west one mile; it extends in a southerly direction 2¼ miles; its southern end being 1¼ mile off shore; on the north end of the southern (CANDA) BANK lies NAPPA ROCK, having two fathoms water on it; it bears from Ahungalle Point, N. W. ½ W. 1¼ mile, and is a large mile off shore; from the rock the bank runs to the S. S. E. about 1½ mile; its southern end bearing from Ahungalle Point, W. ½ S. ¾ mile; the depth of water on these banks, with the exception of Nappa Rock, is 4½ to six fathoms; inside there is seven to eight fathoms sandy bottom, and close outside eight to nine fathoms rocky bottom; there is a passage between these banks about half a mile wide, having eight to nine fathoms water.

ALUT ROCK, a small rock having only nine feet water on it, and seven fathoms, a boat's length from it all round, bears from Ahungalle Point, W. ¼ N. 1¼ mile: when on the rock, the Haycock is in on with the house above mentioned. Gindavanna Isle kept open of Myimba rocks (both described below,) clears Alut rock on the outside.

MUTA AMARATA BOKA POINT, (the Cocacherra point of Horsburgh) is rocky, and of moderate height, and bears from Ahungalle point S. ½ E. 2½ miles: ¼ mile to the westward of it lie Myimba rocks above mentioned, being two rocks elevated a few feet above water, and surrounded by a reef having five fathoms close to all round.

BALPITTY RIVER'S ENTRANCE, is ¼ mile to the northward of Muta Amarata Boka Point; this river is small and navigable for Dhonies only: the custom-house stands on the north side of the entrance, which is low and sandy, and does not project so far out as the south point called Balpitty Modere point, which is rocky, and of moderate height: ¼ mile to the northward of this river is Harispol point, which is low and sandy, but has several high

rocky islets lying close off it: and to the southward several rocks above water, surrounded by a reef, inside which is anchorage off the bar of the river in two fathoms sandy bottom; the passage is between the reef and Balpitty Modere point: several rocks lie off this part of the coast from ¼ to ½ mile off shore, having only from two to six feet water on them.

GINDAVANNA I., a rocky islet of moderate height, with several others to the northward of it, bears from Muta Amarata Boka point, S. by E. ½ E. two miles, and is ¼ mile off shore; AMBLANGODDE REST HOUSE bears from it S. E. by E. ½ E. ½ a mile; this house stands on the summit of a rocky cliff, and is conspicuous from seaward: close to the southward is an opening in the rocks, forming a cove having a sandy beach of about 100 yards in extent, and anchorage in 2½ fathoms water. Several rocks lie from ¼ to ½ a mile off Amblangodde, outside which there is anchorage in 10 fathoms sandy bottom; Amblangodde Rest House bearing about N. W. by N. 1 mile. Between Myimba rock, and Gindavanna I., there is a rocky bank about one mile from the shore, having 4½ to 6 fathoms water on it, 7 and 8 inside, and 10 and 11 close outside, the south end bears from Gindavanna I. W. ½ S. ½ mile, and it runs 1½ mile in a line with the coast.

ACCORAL POINT in lat. 6° 11′ 50″ N. long. 80° 10′ 50″ E. is low and sandy, covered with cocoa-nut trees, and bears from Gindavanna I. S. by E. ½ E. 2½ mile, and from Amblangodde S. by E. ½ E. 2½ miles. West from Accoral point a large mile, there is a small rock above water, called Passée Rock, with a bank extending from it nearly ¼ mile to the southward, on which the sea breaks heavily; there is a passage between this rock and the shore having 10 fathoms water rocky bottom, but several rocks lie from ¼ to ½ mile off shore, having three to six feet water on them. Should a ship therefore pass inside Passée Rocks, she should keep nearer the rocks than the shore; there are seven fathoms close outside these rocks; 13 ½ a mile, and 20 fathoms ½ mile outside them.

WAAL POINT, (Ragamma Point, of Horsburgh,) bears from Accoral Point S. S. E. ½ E. 4½ miles; it is low, and covered with cocoa-nut trees; it may be known by a rocky islet called Waal I. which lies right off it, a large ¼ mile, and is surrounded by smaller ones; 1½ mile N. W. by N. of Waal Point, and ½ mile, directly off a low rocky point called Seeneiganime Point, lies Debaha Rock elevated a few feet above the water, and appearing as if split into two, or as if one part had fallen from the other: ½ mile to the N. W. of Waal Point, is the village and Rest-house of Hiccodde, but which cannot be distinguished from seaward, being hid by the cocoa-nut trees; here is a gap in the reef affording a passage for Dhonies, and anchorage within the reef; there are two similar passages between it and Waal point.

MANDA ROCK bears from Waal I. S. E. 2¼ miles, the coast

between them forming a bight or shallow bay, having anchorage on the S. E. side in five to seven fathoms water, off the village and river of Dodandoewe, where there is a custom-house, 1¼ mile, S. S. E. of Waal Island, and the same distance from Manda Rock, nearly a mile from the shore lies Hiccodde Rock, which is small and steep to, having only six feet water on it, and seven fathoms, a boat's length, from it all round about a mile. W. by N. of Manda Rock lie Dodandoewe rocks, which always break, and about 200 yards to the northward of these a small rock called Orova rock, having six feet water on it, and six fathoms close to all round; and about 1 mile to the N. W. of Manda rock, there are some rocky islets close to the shore, from which a coral reef projects about half mile to seaward: to avoid these dangers, a vessel wishing to come into the anchorage, should keep Debaha rock well open of Waal Island, which will carry clear outside Hiccodde rock) till the north end of a large rocky islet, about ¼ m. to the northward of Manda rock, called Medda rock, is on with the middle of Dodandoewe Modere, (river's entrance,) then haul up for the north bank of the river, taking care to give Dodandoewe rocks a good berth in passing, so as to clear Orava rock; and anchor with Dodandoewe rocks bearing from S. S. E. to S. S. W.

Godda Rock having four fathoms least water on it, bears from Manda Rock S. W. ¼ W. 1½ mile; this may be avoided by keeping Seneegamme Point open of Waal Island, which will clear it on the outside, or Accoral Point on with Waal Island, which will clear it on the inside, until the Haycock is open to the westward of Manda Rock.

Gindura River. From Manda Rock the coast runs about S. E. ¼ E. 7¼ miles to Galle flagstaff, about half way between is the entrance of Gindura River, which may be known by the alteration in the appearance of the coast, it being low and sandy to the N.W., but rugged with rocky points to the south-eastward of the river; also by the high bank of sand extending about a quarter of a mile, where the river runs close to, and in a line with the coast: before breaking through to the north of a small rocky point, there is a small red cliff on the opposite side of the river.

Gindura Rock, which is very dangerous, lies directly off the river, two miles distant, and bears from Galle flagstaff, W. by N. ¼ N., 4⅛ miles, (it is called by the natives Medda Rock); there is only nine feet water on its shoalest part, four and five fathoms about a cable's length all round, and fifteen fathoms, quarter of a mile outside; there is a clear channel inside, having seven fathoms near the shore, and thirteen and fourteen near the rock; a coral point kept open of Waal Island, or Onawatty Point, kept open outside the breakers of the Whale, will clear Gindura Rock on the outside: vessels passing inside should be careful to keep a coral point well shut in by Waal Island; when on the shoalest

part of the rock, the Haycock is about a sail's breadth to the westward of a small white-topped rock, called Gull Rock, situated near the beach, about seven-eighths of a mile to the N.W. of Gindura river's entrance.

THE WHALE, bears from Galle flagstaff W. 4° N. two and a half miles, and is nearly one mile and a half on from the shore: it always breaks, but in fine weather only once in four or five minutes, so that a good look out is then necessary when passing it: there is a channel inside it, having seven and eight fathoms' water, rocky bottom, but the soundings are irregular, and there is a bank with four and a half fathoms on it, about half way between the Whale and the shore, so that it is prudent not to pass through this channel: there are seven fathoms close outside this rock; twelve is a quarter of a mile, and twenty about three quarters of a mile off. The soundings between the Whale and Gindura Rock deepen gradually from eight fathoms near both rocks to fifteen fathoms half way between them.

THE LITTLE WHALE, a small rock above water with seven fathoms, close to all round, lies about half way between the Whale and Galle flagstaff in the same line of bearing; there are many rocks between it and the shore, having only from three to six feet water on them. Vessels, therefore, which may from any cause pass inside the Whale, should be careful to haul out between it and the Little Whale, where there is a clear channel, having eight and nine fathoms' water, rocky bottom.

POINT DE GALLE FLAGSTAFF, in latitude 6° 1′ 45″ N. longitude 80° 20′ E.; stands at the southern angle of the fort, which is built on a rocky peninsula; several rocky islets lay off the flagstaff, one of which has a cocoa-nut tree on it, and is called Pigeon Island: the harbour is to the eastward of the fort, watering point at the opposite side of the entrance, bearing from the flagstaff E. by S. $\frac{1}{2}$ S., one mile; it is considered safe at all seasons, but many rocks, having from three to twenty feet water, are scattered over the entrance and inside; the outermost of these has twelve feet water on it at low water; it bears from the flagstaff about S. by E. $\frac{3}{4}$ E. $\frac{5}{8}$ mile. Two hundred yards to the northward of this lies another rock, having eleven feet water on it at low water; these rocks are called Cadda Rocks; they are small, and have from seven to nine fathoms water close to all round; on three of the rocks, having three, seven, and ten feet on them respectively, boats are stationed with flags, when vessels are coming into, or going out of the harbour; the first and third are to be left on the larboard hand, in going in; the second, on the starboard: no stranger should attempt to enter the harbour without these boats or a pilot, unless from unavoidable necessity, when the following would be the best track: keep the church well open to the westward of the flagstaff, till you bring the white mark, which is on the east side of the harbour, to

the northward of watering point, well open of watering point, then steer for Gravel Point, the northern extreme of the high land, forming the east side of the harbour, until the Gull Rock (a small rock situated on the N. W. part of the harbour) is on with a bushy tree on the hill, called Pilot's Tree, which will then bear about N. by W. ¼W., and the outermost rocky islets off the flagstaff bearing about west; then haul up for the west end of the Cutchery, a large house at the north side of the bay, the residence of the government agent of the southern province, and which will then bear about N. by E., or a little to the westward of it, keeping it on or nearly so with the Haycock, and anchor in four and a half to five fathoms, with the flagstaff bearing S. W. to S.W. by W.; this track leads to the westward, or outside Cadda Rocks. Should the wind hang to the eastward, rendering it advisable to pass them on the inside, keep the belfry, which stands on the highest part of the fort, *well open* to the eastward of the flagstaff, until the white mark is well open of watering point, when proceed as before directed. In fine weather a vessel might anchor in seven fathoms off Polcatta Rock, which has three feet water on it, and on which the outermost of the above-mentioned boats is stationed, (it bears from the flagstaff about E.S.E. 650 yards;) until assistance could be procured here, there is a small space of clear ground, the ground in the entrance of the harbour being in general foul.

Gallehoogalle Bank.—The best anchorage in the roads is in from fifteen to eighteen fathom water, with the flagstaff on with the Haycock or the Church, with Pilot's Tree about one mile from the flagstaff, S.W. by W.; three miles from Galle flagstaff there is a rocky bank called Gallehoogalle Bank, nearly a mile in extent, having in one place only sixteen fathoms water, the general depth on it being eighteen to twenty-two; inside this bank there are twenty-nine fathoms, and close to outside thirty to thirty-five.

Oonawatty Point is the S.E. extreme of the high land which forms the east side of Galle Harbour, and bears from Galle flagstaff about S.E. ¾ E. two miles; it is high and rocky, with two rocky islets lying close off it.

Bellows Rock, bears from Galle flagstaff, S. 50° E. two miles and a half, and from Oonawatty Point, S.S.E. ¾ E., a large half mile: this rock always breaks; there are eight and nine fathoms water inside it, and ten close outside. Inside the rocky islets above mentioned, there is a small bay, called Oonawatty Bay; but the ground is very foul, and it is very little frequented, even by Dhonies.

Woody Island, called Yakeeneega Duwa by the natives, bear from Oonawatty Point, E. by S. ¾ S. 8 ¾ mile, the coast between them is low near the sea, covered with cocoa-nut trees, and lined with a coral reef, with hills of moderate height at a short distance inland.

(To be continued.)

Table XXX.

For reducing Rostock Feet to English Feet, and English Feet to Rostock Feet.

1 Rostock Foot = 0·95474929 English foot.
1 English Foot = 1·04739433 Rostock foot.

Rostock or Engl. Ft.	English Feet and Dec. parts.	Rostock feet and Dec. parts.	Rostock or Engl. Feet.	English Feet and Dec. parts.	Rostock Feet and Dec. parts	Rostock or Engl. Feet.	English Feet and Dec. parts.	Rostock Feet and Dec. parts
1	0·955	1·047	40	38·190	41·896	79	75·425	82·744
2	1·909	2·094	41	39.145	42·943	80	76·380	83·792
3	2·864	3·142	42	40.099	43 991	81	77·335	84·839
4	3·819	4·190	43	41.054	45·038	82	78·289	85·886
5	4·774	5·237	44	42.009	46·085	83	79·244	86·934
6	5·728	6·284	45	42.964	47·133	84	80·199	87·981
7	6·683	7·332	46	43.918	48·180	85	81·154	89·029
8	7·638	8·379	47	44·873	49·228	86	82·108	90·076
9	8·593	9·427	48	45·828	50·275	87	83·063	91·123
10	9·547	10·474	49	46·783	51·322	88	84·018	92·171
11	10.502	11·521	50	47·737	52·370	89	84·973	93·218
12	11·457	12·569	51	48·692	53·417	90	85·927	94·265
13	12·412	13·616	52	49·647	54·464	91	86·882	95·313
14	13·367	14·664	53	50·602	55·512	92	87·837	96·360
15	14·321	15·710	54	51·556	56 559	93	88·792	97·408
16	15·276	16·758	55	52·511	57·607	94	89·746	98·455
17	16·231	17·806	56	53·466	58·654	95	90·701	99·502
18	17·185	18·853	57	54·421	59·701	96	91·656	100·550
19	18·140	19·900	58	55·375	60·749	97	92·611	101·597
20	19·095	20·948	59	56·330	61·796	98	93·565	102·645
21	20·050	21·995	60	57·285	62·844	99	94·520	103·692
22	21·004	23·043	61	58·240	63·891	100	95·475	104·739
23	21·959	24·090	62	59·194	64·938	150	143·212	157·109
24	22·914	25·137	63	60·149	65·986	200	190·950	209·479
25	23·869	26·185	64	61·104	67·033	250	238·687	261·848
26	24·823	27·232	65	62·059	68·081	300	286·425	314·218
27	25·778	28·280	66	63·013	69·128	350	334·162	366·588
28	26·733	29·327	67	63·968	70·175	400	381·900	418·958
29	27·688	30·374	68	64·923	71·223	450	429·637	471·327
30	28·642	31·422	69	65·878	72·270	500	477·375	523·697
31	29·597	32·469	70	66·832	73·318	550	525·112	576·067
32	30·552	33·517	71	67·787	74·365	600	572·850	628·437
33	31·507	34·564	72	68·742	75·412	650	620·587	680 806
34	32·461	35·611	73	69·697	76·460	700	668·325	733·176
35	33·416	36·659	74	70·651	77·507	750	716·062	785·546
36	34·371	37·706	75	71·606	78·555	800	763·799	837.915
37	35·326	38·754	76	72·561	79·602	850	811·537	890·285
38	36·280	39·801	77	73·516	80·649	900	859·274	942·655
39	37·235	40·848	78	74·470	81·697	1000	954·749	1047·394

REPORT OF THE PILOTAGE COMMITTEE.

(Concluded from page 309.)

No. 9. That the Trinity House should have authority to appoint Commissioners wherever they may judge necessary, if the local bodies having that power shall neglect or refuse to exercise it.

No. 14. That, in pursuance of our previous recommendation, the number of Pilots to be fixed in each port or district should not exceed or fall short of the probable wants of the trade.

No. 16. That provision should be made to enable parties interested, with the sanction of the local authorities and of the Trinity House, to vary and adjust the rates of Pilotage from time to time, as circumstances may require, and also to establish and alter by-laws.

No. 17 provides for such cases as that at St. Ives, where the boatmen, combining together, refused to take out licences to act as Pilots, in order that they might be free from all restraint, and that no check might be put upon their exactions.

And although we think it right to continue the restriction which provides that, when a scale of rates is fixed, no greater or less rates shall be paid or received,—the intention of which is, on the one hand, to prevent Pilots from extorting, and on the other, from underworking one another,—yet we think that the severity of the present law might be so far mitigated, as to enable the owner or master of a vessel to reward any signal example of energy or good conduct on the part of the Pilot.

No. 18. That, in order to render the examination of Pilots sufficiently strict, two of the senior Pilots should be chosen to assist the Commissioners therein; as we conceive that no person can be found so competent as examiners as those who are constantly engaged in that vocation.

No. 19. That many of the qualifications at present required from Pilots under local Acts of Parliament, are inexpedient and should be abolished.

There is a provision, for instance, in the present Pilots' Act, which requires that in the River Thames a candidate shall have served for a certain time, either as a master or mate of a square-rigged vessel, which has frequently had the effect of preventing well-qualified and otherwise proper persons from receiving a licence. We have it even in evidence that unlicensed boatmen, in consequence of their superior knowledge of the River, are frequently employed and paid by the Pilots themselves to assist them in conducting vessels between London and Gravesend. The only qualifications should be perfect competency for the duty, suitable age, sound health, sobriety, and general good conduct.

No. 22. That a similar regulation to that which exists in some ports, requiring Pilots to execute a bond as security for their good conduct, should be made general.

No. 24. That the charges upon the Pilots for their examination and licences should be reduced to the lowest possible amount.

At present they vary very much in different ports: in the Cinque Ports the charge for examination and granting a licence, including a stamp, is no less than £14. 4s. 8d., while in other ports none whatever is made. In the outports under the Trinity House the annual charge for the renewal of a licence is £1. 1s. or £2. 2s., according to the size of the port or the number of Pilots employed: in other places the Pilots are not obliged to renew their licences annually, and our attention has been called to the expediency of abolishing this regulation; but we submit our decided opinion that it is a wholesome rule, obliging the Pilots to exhibit themselves once a year to the governing authorities, thereby affording an opportunity of judging of their bodily and mental competency. The payment, however, for the renewal we would gladly have recommended to be discontinued, could we have devised any other mode of defraying the necessary expences of the Sub-Commissioners.

No. 27. That due provision should be made for preventing Pilots incapacitated by age or infirmity from continuing to act; but, however necessary this regulation may be, we fear there will be great difficulty in enforcing it, unless a fund be established which shall afford those Pilots who are obliged to superannuate, a pension sufficient for their maintenance.

No. 34. That if a Pilot puts the owner of a ship to unnecessary expence, he should be liable to defray the same, not exceeding, however, the amount of his Pilotage. The existing law, which imposes a further penalty if an intention of fraud, or of connivance for the profit of another, can be proved, is retained; but the above provision has been introduced to meet the complaints which we have received of the practice, and of the inefficiency of the present law to punish it, owing to the difficulty of proving the existence of corrupt motives.

No. 35. The penalty of dismissal, being that of the greatest severity, should on any occasion be most cautiously enforced; but, when once carried into execution, we consider that, except under very peculiar circumstances, a Pilot should not be reappointed.

No. 36. That a Pilot, before quitting a vessel of which he has had charge, should obtain a certificate from the master thereof, which he should deposit with the authority under whom he holds his licence.

This is a regulation observed with much advantage in several ports, and we consider that it affords the means of ascertaining the true characters of the Pilots, and will serve as a check upon improper conduct, especially inebriety. It will also be less onerous in the port of London than the practice under the present law, which requires the name of the Pilot to be given in and registered before a vessel can be entered inwards at the Custom House. This is often attended with difficulty, and not unfrequently the name is given by guess.

No. 37. That each local authority should have power to compel

the residence of Pilots at the places most suitable to the performance of their duties.

We have been induced to adopt this rule from the experience of its advantageous effect at Bristol, but we are of opinion that it should be exercised with much discretion and judgment.

Australian Navigation—Approaches to the Derwent—New Lighthouse on Cape Brune—New Pilot Station, &c.

Hobart Town, 17th Dec. 1835.

Sir,—I enclose a copy of a letter from the Colonial Secretary of this Government to me; I hope it will prove satisfactory to the underwriters, as well as ship-owners in general.

I know not how my poor exertions may be appreciated by these several interests, but I alone originally moved the Government to the various improvements decided on, at a very great labour, and some little anxiety to myself. I am bound to say that the Government behaved very liberally in the matter, and I feel much indebted to Captain Moriarty, R.N. our Port-officer, who will now have the sole superintendence to completion; and I have no fear of the result. I should ill discharge my duty, if I did not declare that the shipping interest to this port, and indeed every port in the island, as well as the insurers, are under great obligation to Capt. Moriarty; nothing can exceed his alacrity on every occasion to afford aid to the distressed, nor in providing remedies to prevent future losses, as soon as the cause of them becomes known to him.

I beg to remain, Sir, your very obedient servant,

James Grant, Agent for Lloyd's.

To the Secretary, Lloyd's.

Colonial Secretary's Office, 17th November, 1835.

Sir,—I am directed to inform you, that the Lieutenant-Governor has had under consideration in council the reports of the committee, of which you were a member, on the measures to be adopted for rendering more safe the approach of vessels to the Derwent, by way of D'Entrecasteaux Channel, and I am to return to you the thanks of the Government for the valuable assistance you have afforded on this occasion.

I am to state, that, under the representations so ably conveyed by the committee, the Lieutenant-Governor has approved of a lighthouse being erected, with as little delay as possible, upon Cape Bruné, and of an additional pilot being appointed, to be stationed as near the entrance of Recherche Bay as may be found practicable.

Instructions have likewise been issued to the port-officer to cause a survey to be made of the Acteon Reefs, and the channel between the Acteon Islands and the western shore, upon a large

scale, with sailing directions thereon; which measures, together with the erection of the lighthouse, it is hoped will be carried into effect in the course of the summer, as every facility will be afforded, and reasonable expense authorised, towards the attainment of these objects.

I am further to inform you, with regard to the proposal for throwing open the pilotage, that the Lieutenant-Governor agrees with you, in your opinion that such a course would be inexpedient at present; but he considers that vessels arriving at their anchorage without having the services of a pilot tendered to them, should not be compelled to pay the dues; and instructions have accordingly been issued, to exempt vessels so circumstanced from that charge in future. I have the honour to be, Sir,

Your very obedient servant,

(Signed,) JOHN MONTAGU.

James Grant, Esq. &c. &c.

THE AGGER-CHANNEL, COAST OF JUTLAND. *New Pilot Station.* Extract of a Letter from Consul M'Gregor, dated Elsimore, 14th May, 1836.

"WITH the view of facilitating the navigation through this channel, the Danish Admiralty, by an order dated the 7th April, have sanctioned the erection of a pilot establishment at its entrance from the North Sea. In consequence, to the south of that entrance, on a sandy eminence, and near a temporary watch-house, has been placed a signal post, the flag of which hoisted at the top, signifies that the vessel has been observed, and that the assistance of a pilot is offered. The said flag being lowered—

once	denotes . .	1 foot of water,
twice		2 feet of water,
3 times	3	ditto
4 times	4	ditto
5 times	5	ditto
6 times	6	ditto—and so forth.

After this, the pilots go out towards the vessel that make the customary signals.

"The rate of pilotage, according to a tariff exhibited in the pilot office, has been fixed for the present at two rix bank dollars, silver, (equal to 4s. 6d. sterling,) per foot of the ship's draught of water, and in the winter season at one third more, which rate will eventually be reduced, should the navigation of the channel increase.

"Ships entering from the North Sea, may obtain pilots for the several ports and places in the Limfiord.

"According to the soundings which have been taken at different

periods, the depth of the western entrance varies from five to seven feet, and at the eastern entrance from five and a half to six feet. In the channel itself, which affords good anchorage, the depth both from the frith and the sea increases to eighteen feet, which depth, however, is subject to continual changes. The mouth of the channel towards the sea, is about half a Danish mile wide, but further up towards the frith it declines from 250 to 50 fathoms; its length from the sea to the commencement of the frith, is supposed to be three-quarters of a Danish mile.

"Any alterations in the course of the depth of this channel, as well as the names of the vessels frequenting it, will from time to time be communicated in the Danish papers."

THE LATE ECLIPSE.—Much disappointment appears to have been generally felt from the late eclipse not having been attended by a greater degree of darkness. Had the journalists really examined the question before they raised an exaggerated expectation in the public mind, they would have found that a total eclipse, during which the fixed stars may become visible, is a phenomenon that passes over so comparatively narrow a band of the earth's surface, that ages may elapse without its being seen in any particular place. The last which occurred in London was as far back as on the 22d of April, 1715, O.S.; and Dr. Halley, who gives an account of it in the Philosophical Transactions, observes, "Though it be certain, from the principles of astronomy, that there necessarily happens a central eclipse of the sun in some part or other of the terraqueous globe about 28 times in each period of 18 years; and that of these no less than 8 pass over the parallel of London, 3 of which 8 are total, with continuance; yet, from the great variety of the elements of which the calculus of eclipses consists, it has so happened that since the 20th of March, 1140, I cannot find that there has been such a thing as a total eclipse of the sun seen in London, though in the mean time the shade of the moon has often passed over other parts of Great Britain." Now, even during the total absence of the sun's light, Dr. Halley says that he did "not hear that any one in town saw more than Capella and Aldebaran, of the fixed stars." How could it, therefore, be reasonably expected that any of them should appear, when so much of the sun's disc was really left unobscured? There has, indeed, been a common oversight on this subject. The Nautical Almanac tells us that the magnitude of the eclipse was calculated to be 0·868.; but although it is specifically mentioned that this refers to "sun's diameter=1," still it has been misunderstood. These numbers strictly state (as every one acquainted with the subject is well aware) how far the obscuration would extend on a straight line drawn across the sun's centre: the portion of the surface obscured under these circum-

stances would be about 0·806 of the whole disc. Now every one knows that the sun must be some time entirely below the horizon before the fixed stars can be seen, and no one would expect to be able to distinguish them when a fifth part of the sun's disc had not yet set.

The difference between the linear and superficial measures of the obscuration may be easily understood. Let any one take two nearly equal circular pieces of paper, and move the less gradually over the larger: the parts by which they will overlap will at first be small, but the quantity will increase more rapidly when only a crescent is left uncovered, because the advance then takes off so much larger a space by the longer part of the circumference in which the circles cut each other. It was for this reason that the diminution of light was most strongly perceptible when the late eclipse was near its height, and that the return of the sun's brilliancy was so remarkably rapid.

In truth, such darkness as was anticipated could hardly occur in an annular eclipse; and as the mean apparent diameter of the moon is less than that of the sun, the chances are, upon the whole, against any particular eclipse being total. This is a circumstance which at one time seems to have escaped attention. Maclaurin mentions, in the 40th vol. of the Philosophical Transactions, that some astronomers had even doubted of the existence of annular eclipses, and that he could, at that time, meet with no precise account of the observation of such a phenomenon. The paper in which he makes this remark recals to recollection how fortunate the inhabitants of our northern metropolis have been in this respect. The notice occurs in the beginning of the description of the eclipse of Feb. 18-28, 1737, which was annular at Edinburgh; in 1748, Le Monnier came over from Paris, and accompanied the Earl of Morton to the same place, in order to observe the eclipse of July 14-24, which was very nearly under the same circumstances; and every one knows that it was the case on the late occasion.

The great eclipse of Sept. 7, 1820, has been imagined by some who remember it, to have been attended by greater darkness than that of the present year; but this impression must have been occasioned by imperfect recollection, or by accidental circumstances of the weather at the places where individuals observed it. By reference to the Nautical Almanac of the year, it may be seen that its magnitude was 10 digits 27½′, which reduced to decimals will be 0·870, a quantity which exceeds the late occurrence by only 0·007, and could scarcely have made any perceptible difference. The great expectation also will account for their underrating the present instance; and their present disappointment may, on the contrary, increase their estimate in the next great eclipses of the sun, which will occur in July 1842, and October 1847.

Notice of New Beacons at the Entrance of the Port of Swinemünde.

To distinguish the entrance of the harbour of Swinemünde, in case pilots are prevented approaching the vessels off the port, two direction-beacons are erected there. One is a beckoning-beacon, on the eastern mole of the port, and the other on the eastern downs.

1. When pilots cannot put to sea, a red flag will be hoisted on the direction-beacon of the eastern mole. On entering the port, all the white buoys are to be left on the starboard-side of the vessel.

2. Ships entering, will then steer until they find themselves S.E. by S. by compass from the lighthouse, on the outer point of the east mole, taking care to keep the outermost great white buoy, situated on the end of the western ground in sixteen feet water, on the starboard hand, and the next black buoy in an oblique line towards the lighthouse on the larboard.

3. In that situation of the vessel, the two new beacons are seen on with each other, bearing S.S.E. and this course, keeping the two beacons on, will lead into the port up to the second landing berth of the eastern mole, four cables' length beyond the lighthouse, and half a cable's length from the mole.

4. Should there be no pilot at sea, and no flag hoisted on the beckoning-beacon, the captains must not attempt to enter the port at all, but either anchor in the road or remain at sea.

Royal Prussian Government.—Stettin, 12th Nov. 1835.

New Lighthouses in the Mediterranean.

(Received from the French Government.)

Hydrographic-office, Admiralty, 3rd May, 1836.

Notice is hereby given, that since the 1st May, 1836, three new lights have been shewn on the undermentioned points of the coast of France, in the Mediterranean, viz.

Cape Bearn Lighthouse, (near Port Vendres, Department of the Eastern Pyrenees.)—A Fixed Light, on Mount Bearn, about 875 yards S.E. of the entrance of Port Vendres, in 42° 30′ 45″ N. latitude, 3° 7′ 15″ E. long.

This light is 722 English feet above the level of the sea, and may be seen in fine weather at the distance of seven leagues.

Light on Fort Brescou, (near the mouth of the river Herault.)—A small Fixed Light, on the south-east bastion of Fort Brescou, one league E.S.E. of the mouth of the Herault, in 43° 15′ 30″ N. lat., 3° 30′ E. long.

This light is 59 feet above the level of the sea, and may be seen in fine weather at the distance of three leagues.

Light of Mount St. Loup, or Mount Agde, (near Agde, Department of the Herault.)—Intermitting Light, at intervals of one minute each, on Mount St. Loup, 3¼ miles N. 66° 30′ E. of the mouth of the Herault, in 43° 17′ 50″ N. lat., 3° 29′ 30″ E. long.

This light is 413 feet above the level of the sea, and may be seen in fine weather at the distance of nine leagues.

The light will not disappear *entirely* unless the distance be more than four leagues.

The above to be substituted for the notice of these lights in p. 301. Ed.

New Light in the English Channel, Coast of France.

Hydrographic-office, Admiralty, 18th May, 1836.

Fecamp Lighthouse, (Department of the Lower Seine.)—This is to give notice to mariners, that from the 1st of June next, a Fixed Light will be shewn throughout the night, on the tower which has just been constructed upon the Mount de la Vierge, on the left of the entrance into the Port of Fecamp, in latitude 49° 46′ north, and longitude 0° 22′ east of Greenwich.

The light will be placed 56 English feet above the surface of the ground, and 427 feet above the level of high-water of equinoctial tides. It will be visible in fine weather at the distance of seven marine leagues.

Light on the Island of Anholt.

Danish Consulate, April 9, 1836.

Sir,—For the benefit of vessels bound through the Cattegat, I beg to acquaint you that I have received instruction from the Royal Board of Trade at Copenhagen, under date of the 2d inst., to give notice, that the light on the island of Anholt will, in the approaching summer, be reconstructed; and the present coal fire substituted by a fixed lantern light.

During this operation, which will commence in the beginning of June, the light on Anholt light tower will be illuminated at night with lamps, as a guide to vessels in the Cattegat.

I am respectfully, Sir, your most obedient servant,

Melville Wilson,

(In the absence of Fletcher Wilson.)

W. Dobson, Esq., Secretary at Lloyd's.

Liverpool.

Merchantmen entering the harbour of Liverpool during the night, will in future be careful to distinguish the North-west Light from the others, by a blue light being burnt from it every two hours.

MISCELLANEOUS INTELLIGENCE.

NEW BOOKS.

NARRATIVE OF THE ARCTIC LAND EXPEDITION, to the Mouth of the Great Fish River, and along the Shores of the Arctic Ocean, in the years 1833, 1834, 1835. By Captain Back, R.N. Murray.

All England and all Europe know the principles and motives which originated this expedition, and which placed Captain Back at its head. We may add, that the whole civilized world sympathized in its objects, and breathed prayers for its success. Providence had appointed a different mode of rescue for Captain Ross and his party, but their earlier deliverance scarcely diminishes the intense interest, which every one must feel in the narrative of the noble-minded traveller, who hazarded his life for their relief. Whether the energies of Captain Back are engaged in an object of pure benevolence, or of scientific research, they do equal honour to his country, and to the profession to which he belongs. His work abundantly testifies this, and that those energies are of no common character. Mental activity, prudence, firmness, and an unfailing cheerfulness of spirit amidst severe personal privation, and a deep consciousness of the responsibility of his position, Captain Back appears to possess in a very high degree; and with these he combines a habit of diligent scientific observation, and a power of natural, lively, and graphic description not often surpassed. The dictates of a humane and religious mind shed a grateful light over his description of the scenes of icy desolation which he visited; and the expressive name of Fort Reliance, which he gave to his winter abode, amply displays the spirit which animated his praiseworthy exertions. We have already described to our readers the route which was taken by Captain Back, (and even have had the satisfaction of seeing that description translated into the annals of the French Geographical Society;) but for further information we must refer them to the work itself. We cannot close it, however, without noticing the beauty of the graphic illustrations with which it is enriched. Plate and stone vie with each other for the palm of pictorial effect, nor shall we hazard an opinion as to which must be awarded the palm of superiority. It will be sufficient for us to add, that both Finden and Haghe have done their utmost in representing the drawings of Captain Back, and have well contributed their part towards rendering the volume worthy a place amongst the most valuable collections of travels ever yet published.

ERICSSON'S SOUNDING MACHINE.—This very ingenious contrivance, after having undergone a rigid examination as to the soundness of the principle on which it is to answer the purpose of a deep-sea lead, and register the depth to which it descends from the surface, has been pronounced efficient for its intended object. The specification of the patent has been sealed, and we hope in an early number to describe it.

CURRENTS IN WATER.—In the last number of Silliman's Journal, in an article on "currents in water," it is asserted, that if a tub or other vessel is filled with water, and a hole made near the middle of the bottom of it to discharge it, the water will acquire a rotatory motion from west to south, or opposed to the apparent motion of the sun; and if means are used to produce an opposite motion, upon withdrawing those means, the former direction will be resumed. This cannot be the effect of chance, but of natural laws constantly operating.

ALARM BUOYS.—A plan of an alarm buoy, or a buoy provided with a bell to alarm ships, by its sound, of their running into danger, has been proposed by Mr. John Redhead, of Camberwell. Such a contrivance would perhaps answer in what seamen would call light weather, but we much doubt whether amidst the roar of the wind and sea its monitory sounds would be audible. The experiment, however, is easily tried, and we should be glad to see it done. The same proposal will be found in page 231 of our last volume, and a plan for illuminating buoys also, at page 285 of our volume for 1834.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

COMMANDERS — Claude Buckle; J. Maitland; T. R. Eden.

LIEUTENANTS—J. A. F. Bowen; Wm. Reed; — M'Glynn; John Cheere.

APPOINTMENTS.

ARAB, Transport—*Lieut.* W. Lester.

ASIA, 84—*Mate*, A. Farquhar; *Sec. Mast.* G. R. Nicholson; *Vol. 1st Class*, A. Wodehouse.

BELLEROPHON, 80—*Lieuts.* E. H. H. Hallett, A. F. Edwards; *Mates*, J. M. Dorville, F. Maule, G. A. Smith, J. Palmer; *Mast. Assist.* J. Hawkins; *Schoolmr.* R. Lambert.

BONETTA, 10—*Lieut. Com.* F. Bisson.

BRITANNIA, 120—*Lieut.* John Cheere; *Master*, R. Fulton; *Mate*, A. G. Edye; *Sec. Master*, F.F. Strong; *Mast. Assists.* P. W. Gibson, Wm. Webb; *Assist. Surgs.* R. Bankier, S. Charlton, Supern.; *Schoolmr.* John Mallard; *Extra Col. Mate*, H. Dumaesy.

BUFFALO, . .—*Capt.* J. Hindmarsh; *Mast.* F.W.R. Sadler; *Surg.* Mr. James Jackson; *Secr. Sec. Master*, Mr. Chegwyn; *Sec. Masts.* James Bowler, N. Phillips; *Mast. Pilot*, W.C. Phillips; *Assist. Surg.* F. P. Pascoe; *Mast. Assist.* Mr. F. Cheeseman; *Clerk*, William Eales.

BUZZARD, 10—*Lieut.* P. Campbell.

CARRON, St. V.—*Mast. Assist.* G. J. Briggs.

CASTOR, 36 — *Com.* W. Robertson; *Surg.* (additional) H. Dobbs.

CORNWALLIS, 74—*Lieut.* J. Forbes; *Mate*, — Kendall; *Master*, H. Davy.

EXCELLENT—*Lieut.* J. Hallett; *Mast. Assists.* E. Oades, G. Payne; *Mids.* R. Lambert, C. O. Wood, E. T. Hinde; *Col. Vol.* F. J. Hawkins.

EXPRESS, Packet—*Assist. Surg.* W. Barnard.

HERCULES, 74 — *Lieuts.* J. Williams, J. Langtry; *Mate*, E. B. Penny; *Mid.* — Warburton.

MAGPIE, Cutter—*Lieut.* T. S. Brock.

MINDEN, 74—*Lieut.* J. Sankey; *Mates*, H. Bacon, J. Stankey; *Mid.* — Poole.

PANTALOON—*Lieut.* H.P. Deschamps, Super.; *Sec. Mast.* Mr. J. Haynes.

PEARL, 20—*Extra Col. Mid.* F.Forbes.

PEMBROKE, 74 — *Lieut.* H. French; *Surg.* J. Moxey; *Chaplain*, Rev. H. H. Frankin; *Mates*, — Palms, J. Birom, R. T. Davis, L. P. Burrett; *Mast. Assist.* H.Williams; *Clerk*, J. Boghurst; *Adml. Clerk*, J. C. Sulivan.

PHŒNIX, Steamer — *Assist. Surg.* J. Forbes.

PYLADES, 18—*Lieut.* Thos. Hill; *Clerk*, — Borland.

ROYAL ADELAIDE, 120 — *Capt.* John Sykes; *Lieuts.* R.A. Bradshaw, C. Gayton, S. R. Watts; *Surg.* James Allan; *Chaplain*, Rev. T. Quarles; *Master*, W. White; *Mate*, W. Need; *Sec. Masts.* — Chegwin, W. Burney; *Assist. Surgs.* J. Yeoman, H. F. Osman; *Secretary*, T. Williams, Esq.

ROYAL GEORGE, Yacht — *Sec. Mast.* John Haynes.

SALAMANDER, St. V. — *Sec. Mast.* J. Retylen; *Mates*, —Riddell, — Clifford, R. J. Curtis (lent).

STAR, Packet—*Lieut. Com.* Christopher Smith.

TALAVERA, 74—*Mate*, M. R. Scott; *Mid.* R. Stewart.

TERROR, . .—*Capt.* G. Back; *Lieuts.* W. Smyth, O. Stanley; *Clerk*, W. Lawes.

TRINCULO—*Lieut.* Montague Thomas; *Clerk*, — Brown.

VANGUARD, 80 — *Chaplain*, Rev. G. Richards; *Mates*, P. Somerville, F. E. Johnson; *Col. Mate*, G. E. Walford; *Assist. Surg.* W. Steele.

VESTAL, 26—*Mid.* J. Bradley.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

Continued from page 318.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS
241	Agnes	Beynon	Newport	Run foul of	and Sunk	11 Mar.	Crew saved.
242	Bassenthwaite	Mitchenson	Liverpool	Quebec	Scilly	7 April.	Crew saved.
243	Britannia	Parker	Newcastle	Liverpool	Exmouth	18 April	By fire.
244	Caledonian				Winterton	2 May	
245	Cambrian	Gowan	N. Orleans	Liverpool	Heloze	9 Mar.	By fire.
246	David	Richards	Perth	London	Lowestoffe	3 Feb.	
247	Devery	Of Sundrld.			Owers	27 April	
248	Dispatch	Smith	London		Sunk Light	11 Mar.	Crew saved.
249	Englishman		Dublin		Tees Bay	10 May	
250	Enterprize		Sydney	Bridgwater	Severn	15 April	Crew saved.
251	Forth	Sailed from	Manilla for	London	17th July, not	since	heard of.
252	George	Steam-pakt.	Liverpool	Rhyl	Off Rhyl	31 Jan.	
253	George Canning	Hick	Hartlepool	London	Heaps S.	May	
254	Gleniffen		Greenock	Dartmouth	Bucks Rocks	2 May	
255	Good Intent	Sailed from	Seaham	18th March	Not heard of	since.	
256	Hive		Cork	Australia	Jervis B.	Dec.	Crew saved.
257	Jane		Boston	Sunderland	Wainfleet	3 May	Crew saved.
258	John Eaton		Teignm'th	Falmouth	Torbay	1 Feb.	
259	King-ton	Dickson	Liverpool	Africa	C. Palmas	24 Jan.	Crew saved.
260	Lady of the Lake	Steamer			Tees	1 Feb.	Abandoned.
261	Lord Gambier		Swansea	Jersey	Not heard of	since	28th Feb.
262	Louisa		Of Poole		Lowestoffe	3 Feb.	
263	Mary		Cork		Cork	2 April	By fire.
264	Mary	Hogarth	Liverpool	Berbice	Bosall P.	31 Mar.	Crew saved.
265	Mary M'Gill	Gillies	Tralee	Liverpool	Tarbert R.	2 April	Crew lost.
266	Margaret Hall	Davidson	Demerara	London	At Sea	15 April	Run foul of.
267	Oake	Of Shields			Cromer	18 Feb.	Crew saved.
268	Penketh	Atherton	Carnarvon	Liverpool	Chester R.	28 April	Crew saved.
269	Planter	Dawson	Newcastle	London	Middle S.	3 May	Crew saved.
270	Reliance	Sanders	Bristol	New York	Long Island	9 Mar.	Crew saved.
271	Robert and Mary	Gribble	Swansea	Barnstaple	Off Lundy I.	2 April	All lost.
272	St. Patrick		St.John. N.B	Liverpool	Off Liverpool	3 Feb.	Abandoned.
273	Speculator		Scarboro'		Off Havre	3 April	Crew saved.
274	Spring	Of S.Shields			Off Whitby	17 April	
275	Su-an	Of Plymth.			Helford	25 Mar.	
276	Thomas and Ann	Stevenson			Coast Petten	1 April	
277	Trent	Of Shields			Cromer	18 Feb.	Five drowned.
278	Trial	Of Belfast	Stern wshd.	on shore off	Brest	April	
279	Trimdon	Lambton	Sunderland	London	Heaps S.	3 May	Crew saved.
280	Tyne		Newcastle	Beauly	Lossmouth	8 April	?
281	United Brothers		Liverpool	Nantes	St.Geo.Chan.	5 April	Crew saved.
282	Unity and Nelly		Perth		E.C. England	March	
283	Victoria	Richardson			Cromer	18 Feb.	Crew saved.
284	Wellington		Of Whitby		Lowestoffe	3 Feb.	
285	Wesleys'		Scarboro'	London	Not heard of	since	23d Jan.

ARCTIC EXPEDITION—For such we must consider all that are connected with geographical discovery in the Arctic regions. Our readers will learn with satisfaction, that Captain Back has commissioned the Terror to complete the discovery of the southern shores of the Gulf of Boothia, from the straits of the Fury and Hecla, to the mouth of the Great Fish or Back River, probably the most interesting of any expedition yet sent in that direction, as it will determine the north-east boundary of the American continent. The Terror will sail for Wager Inlet about the middle of next month, and, it is hoped, will return to England in about October next.

That celebrated Arctic voyager, Captain Sir John Franklin, R.N., has been appointed governor of Van Diemen's Land, and will leave England in July next for that place, accompanied by Captain Maconochie, R.N., as his private secretary. This latter officer has filled the appointment of secretary to the Geographical Society since its commencement, and has performed the duties of his station to the satisfaction of all parties. We understand that he will

be succeeded in this office by Commander Washington, R.N., an officer whose observations in Marocco, besides scientific qualifications, render him well fitted for such an appointment.

Births.

May 5th, at Congham Lodge, Norfolk, the lady of Sir Edward Parry, R.N., of a daughter.

In Ker-street, the lady of Captain Charles Parker, R.N., of a son.

In Springfield-place, Bath, the lady of Lieut. L. B. Williams, R.N., of a son.

At Wickham, the lady of Captain Sir Francis Collier, R.N. K.C.H., of a son and heir.

In Adelaide-street, Stonehouse, the lady of Lieut. Edward Baffin, R.N., of a daughter.

At Trafalgar-place, Stoke, the lady of M. Spratt, Esq. R.N., of a son.

Marriages.

At Christ Church, Mary-le-bone, on the 12th of May, by the Rev. Robert Walpole, Captain Sir Richard King, Bart. to Marianne, only daughter of James Barnett, Esq., of Dorset-square, London.

May 15th, Captain W.A.B. Hamilton, R.N., second son of the Rt. Hon. Lady Charlotte Hamilton, to the Lady Harriet Hamilton, sister to the Marquis of Abercorn.

At St. Andrew's Church, by the Rev. Richard Luney, Lieut. Duins, R.N., to Anne Mortimer, eldest daughter of the late Rev. John Amyatt Chaundy, of Charlinch, near Bridgewater.

At Charles Church, by the Rev. M. Seaman, H. Lowcay, Esq., Com. R.N., to Miss E. B. Steere, of Plymouth.

At Mylor, near Falmouth, Lieut. Fortescue, of the Nightingale packet, to Miss Forster, daughter of Lieut. G. B. Forster, of the Lapwing packet.

Deaths.

At his residence in Cobourg-street, Plymouth, sincerely and deeply lamented, James Dickson, Esq., Surgeon R.N., and late of H.M.S. Thunderer, after a severe and protracted illness.

At Stonehouse, after a long and painful illness, Lieut. Daniel Hunt Sulivan, R.N. (1815,) aged 41.

At his house in Durnford-street, Stonehouse, after a long and painful illness, Captain W. King, R.N. (1807,) in his 70th year.

At his residence in East-street, Stonehouse, Lieut. James Rusden, R.N., (1807,) after a long and painful illness.

Lately, on board H.M.S. Rattlesnake, in the East Indies, Mr. Fred. Thomas, Midshipman of that ship.

At his residence in Belle-Vue-terrace, Southsea, Captain Deacon, R.N., at the advanced age of 88 years.

At the Royal Hospital, Haslar, William Ingram, Esq., Purser, R.N. (1809.)

On the 23d of April, at Richmond, in the 45th year of his age, Capt. Bernard Yeoman, R.N.

At Dublin, Lieut. Thomas Scanlan, R.N. (1812.)

Lately, at Youghall, of typhus fever, Lieut. Arthur Palmer, R.N. (1808.)

Lately, Lieut. Daniel Ridgway, R.N. (1818.)

On the 31st of March, at Godalming, Lieut. Edward Garrett (*a*) R.N. (1797,) aged 65.

On the 29th of April, in Harley-street, Emily, the infant daughter of Captain Berkeley Maxwell, R.N.

On the 13th of May, Lady Nagle, relict of Adm. Sir Edm. Nagle, aged 98.

On the 16th of May, after a lingering illness, at his mother's house, Portland-place, Morite-town, in his 16th year, Edward, second surviving son of Lieut. John Bardin Collins, R.N.

On the 10th of May, at Ham Common, Lady Sutton, relict of Admiral Sir John Sutton.

On the 14th of May, at his father's house, Home-park-buildings, Stoke, in the 21st year of his age, Mr. George Joseph Patey, only surviving son of Captain Joseph Patey, R.N.

On the 17th of May, at Charles-place, Mrs. Horniman, wife of Mr. Horniman, Purser, R.N., after a long illness.

January 19th, at Jamaica, Charles Howis Lee, third son of the late Lieut. Lee, R.N.

At Gosport, on Tuesday evening, the 17th of May, most deeply regretted by his numerous family and friends, Com. T. L. Robins, (a) R.N., aged 76 years, on the retired list.

BOAT SAFETY.—A machine has been submitted to our inspection, invented by Lieutenant Beadon, R.N., the purpose of which is, to release the sheet of a boat, and thereby prevent her from being capsized when under sail. The machine is fixed to a thwart, or any other part of the boat, and the sheet being secured to it, can be readily hauled aft; but on the boat heeling over to a certain angle, (which is determined on at pleasure,) it is released entirely, and the boat, no longer under the pressure of her canvass, rights immediately. It is a most ingenious contrivance: there are numerous instances of lives being lost by the capsizing of boats in squalls, particularly in rivers, which this invention would no doubt have prevented; and as it is a self-acting machine, it is particularly well calculated for boats with pleasure parties in rivers and fashionable watering places.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

APRIL, 1836.

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	F.	29·78	29·60	44	36	35	45	S.	E.	4	4	Or & s (2)	O r s (3) (4)
2	S.	29·51	29·61	37	43	32	44	N.W.	N.W.	6	5	Qprs (1)	Q p r s (4)
3	Su.	29 90	30·08	41	39	31	43	N.W.	N.W.	6	6	Q p c (2	Qprh (3)
4	M.	30·35	30·33	38	45	31	46	N.	N.W.	5	4	Bc.	Bc.
5	Tu.	30·18	30·06	43	49	29	53	N.W.	S.W.	3	3	O.	Od 3) (4)
6	W.	29·90	29.86	45	49	42	50	S.W.	S.W.	3	3	Or (1) (2)	Bc.
7	Th.	29·36	29·26	44	48	39	51	S.	S.W.	4	3	Or (2)	Phr (3
8	F.	29·02	29·09	45	51	36	52	S.W.	S.	2	2	Or (1) (2	Bc.
9	S.	29·29	29·33	43	47	38	49	N.E.	S.E.	3	3	Or 1) (2)	P (3)
10	Su.	29·55	29·61	48	54	37	55	N.E.	N.E.	4	4	Bcm.	Bcm.
11	M.	29·70	29·74	43	47	39	49	N.W.	N.W.	3	2	O.	Bcm.
12	Tu.	29·77	29·76	48	53	36	56	S.W.	S.W.	3	4	Bcm.	Bcm.
13	W.	29·82	29·75	51	58	42	59	S.W.	S.W.	5	6	O.	O.
14	Th.	30·01	29·99	50	51	40	55	S.W.	S.W.	3	3	O.	Od (3) (4)
15	F.	30·16	30·17	51	57	47	58	N.E.	E.	2	2	Od (1) (2)	B.
16	S.	30·15	30·09	45	57	32	57	S.E.	S.E.	1	1	B.	Bcm.
17	Su.	30·12	30 14	45	48	43	49	S.E.	N.	1	2	Od (2)	Od (3)
18	M.	30·00	29·99	45	51	40	53	S.W.	N.W.	3	3	O.	O.
19	Tu.	30·11	30·10	51	56	43	59	S.W.	S.W.	3	3	Bc.	O.
20	W.	29·98	29·90	54	54	47	57	S.W.	S.W.	5	5	O.	Or 4)
21	Th.	29·92	29·92	49	57	40	58	S.W.	S.W.	3	4	Bc.	Bc.
22	F.	29·82	29·87	54	59	45	60	S.W.	S.W.	5	5	Bcr 1)	Bc.
23	S.	29 89	29·80	52	54	44	55	S.W.	S.W.	5	4	Or 1) (2)	Bcp (3)
24	Su.	29·70	29·72	50	49	43	51	S.E.	E.	2	3	Or 1) (2)	Or (3) (4)
25	M.	30·11	30·12	47	54	38	55	N.E.	N.	4	3	Bc.	B.
26	Tu.	30·10	30·02	48	51	42	53	N.W.	N.W.	4	3	O.	Or 4)
27	W.	29·77	29·79	42	43	35	48	N.	N.	5	5	Bcp (1)	Bcphr (3)
28	Th.	29·91	29·82	44	52	35	52	N.W.	N.W.	3	4	Bcm.	O.
29	F.	29·86	29·83	36	44	33	45	N.W.	N.W.	7	6	Bcps 1)	Bcps 3)
30	S.	29·74	29·72	40	46	28	47	N.W.	N.W.	5	5	Bcm.	Bcm.

APRIL—Mean height of Barometer=29·842 inches; Mean Temperature = 45·1 degrees; Depth of Rain fallen=2·50 inches.

Note. On the 22d, at 10 P.M. the Northern Lights appeared very beautiful.

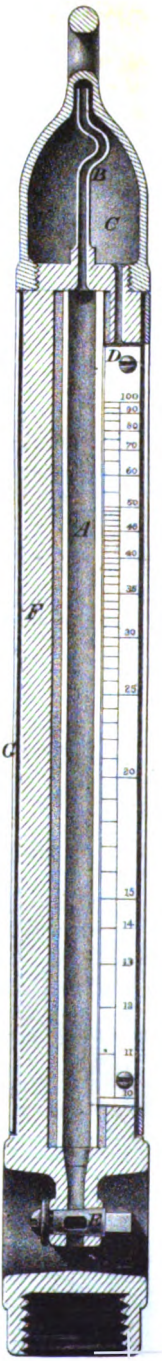
For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

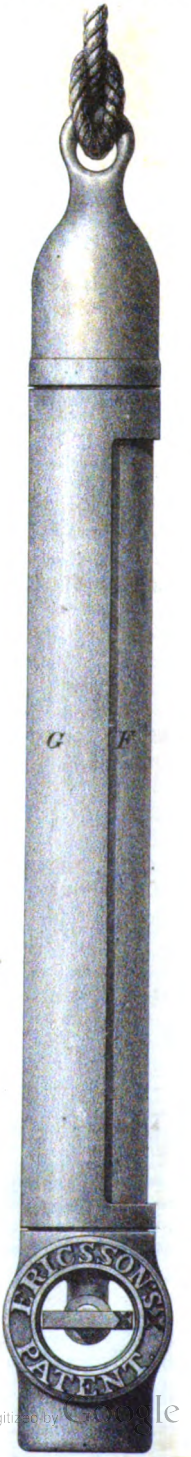
LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

ERICSSON'S LEAD,

OR

PATENT SOUNDING INSTRUMENT.





on Stone by C.E. Overton

ORIGINAL PAPERS.

JULY, 1836.

ADVENTURES ON SHORE AND AFLOAT.—THE ELOQUENT SLAVE.

HOWEVER picturesque and pleasant we at first considered it to dwell in tents, like Bedouins, we soon were glad to quit them. The hollow murmurs of the far-resounding billows were so much too near our quarters, that they often broke the rest of the sick sailors, while hosts of persecuting sand-flies, and a great variety of other noxious insects, so annoyed us, that in about a week we willingly exchanged our canvass dwellings for a range of huts at Black Town, which just then happened to be minus the black tenantry. This residence, however, proving not less uncomfortable than inconvenient, we found it necessary once again to move, and lived in quarters allotted for that purpose by the governor. Our abode was an old fort in the south-east suburbs of Bridgetown, and there we lived in the most Commodore Trunnion-like style imaginable, save and except that our commander was a complete Lieutenant Hatchway, in all things but stumping about on a wooden leg; for he, good gentleman! had a right famous pair of fleshy ones, with calves that surely did not look as if they had been starved for want of milk.

Adjacent to our fort was an extensive piece of ground, chiefly appropriated to the interment of negro slaves. In the course of a few days, we were surprised to hear much clamour in this cemetery; on inquiry, we learned that the Africans were celebrating certain rites upon the graves of their deceased relations, where, at stated periods, it was customary to offer tributes of respect in honour of their mânes. These ceremonies, though barbarous and superstitious, forcibly arrested the attention of the Johnny Newcomes, to whom, indeed, such sights were new. We observed, however, that what these poor blacks designed to be solemn and mournful exhibitions of grief, for the most part excited amongst strangers feelings of disgust or jocularity. What has been said of wit and madness, the sublime and the ridiculous, proved not less applicable here to the grievous and the laughable; for certainly the bounds dividing them were very narrow. Feelings of mirth, amongst the tombs, however, seem quite out of place; therefore epigrammatic epitaphs and humorous inscriptions should never be inscribed on grave-stones. It was necessary to remind some of our waggish comrades, that the most opposite sensations are excited by the same actions in different countries. In some places, white is the colour of mourning; in some, the bride and bridegroom are married in black; in one place,

the host, to shew his breeding, seizing a guest by the collar, *flumps* him "*whop*" into a chair; this, practised on the person of a Spanish grandee, would be held a most unpardonable outrage and insult, the stain of which could only be washed out with blood. Amongst the South Sea islanders, nose crushed to nose is a polite salute. In Europe, to snap your fingers in another's face, passes for insult or defiance; yet, strange to say, in parts of Africa this is esteemed a mark of most profound respect. A knowledge of these contrarieties should certainly dispose a traveller not readily to give way to contempt for foreign manners, a fault of which the English are generally accused, perhaps but often certainly too justly. The scenes we that day witnessed, however, would have excited great mirth in any other place than a church-yard.

Amidst the numerous parties by which we were surrounded, one, from the singularity of the group, especially attracted our attention. It consisted of three men and a female. We were at first unwilling to draw too near, thinking it might interrupt their ceremonies; however, their attention was too much engrossed to notice our approach, and we remained quiet and curious spectators of their singular proceedings. The men were in the prime of life, robust and muscular; but the woman formed a woful contrast to their appearance, being dwarfish, shrivelled, and decrepit from old age; her hair resembled the wool of a white sheep, and her skin was disfigured by many leprous spots; she seemed superlatively wretched. Her meagre frame rendered her at once an emblem of misery, disease, and famine. Yet, notwithstanding her apparent feebleness, she was most energetic in her manner, and seemed to act the chief part in the present ceremony, leading, for the space of nearly half an hour, a sort of dance around the grave, which had to us the effect of magic incantation, such as Canidia herself might have performed at her foul orgies. The men kept tripping in her train, and joined with her in a wild sort of dirge, of which the chorus was incessantly repeated after the manner of an Irish hollogone. Although the words were unintelligible to us, they were of a character so dolorous, that they could not be listened to without exciting pain and sorrow, and the more so that their own affliction seemed both ardent and sincere.

During this wild sort of choral dance, a fifth person joined them, and, standing on the middle of the grave, kept crossing his feet so as to perform a step something like what is called "shuffling over the buckle," after the manner of a Scotch hornpipe, except that the movement of the feet was slower. He was a man of singular appearance, "grim, gaunt, and grizzly," with a style of face differing from that of the ordinary African negro. His hair and beard were shining white, as the rime frost seen at the close of winter, and his whole appearance denoted one more fit to be stretched within, than dancing thus upon, a grave. He seemed to be performing

some priestly function; and, instead of joining in the dirge, muttered a wild low strain of his own. When the others had concluded their dancing, and were silent, the old man closed the ceremonies, by pouring rum from a bottle into a hollow place which he had formed in the mould by the motion of his feet; that done, he went for a shovel, and, taking up the earth which had been scattered about, he spread it smoothly upon the grave: this being completed, he shouldered the shovel, and the party retired.

There were other groups similarly occupied, but having had so good a view of one set, we looked for something that promised more variety; nor was it long ere we were gratified to the extent of our wishes. Observing a considerable crowd, at a more distant part of the ground, we bent our steps that way, and found a dark mulatto woman, of that complexion known in the West Indies by the name of Sambo. She appeared about forty years of age, well-dressed, had an expressive countenance, with features of a melancholy cast, which partook more of the European than the African character. She was somewhat lame, and leaned on a crutch stick; this she extended sometimes, to enforce her oratory, which, notwithstanding the imperfect pronunciation peculiar to West Indians, we found exceedingly pathetic. She was holding a discourse with the spirit of her husband, at the foot of whose grave she stood. After expressing the sorrows arising from the privations of widowhood, and adverting to the happiness of days by-gone, and never to return, she entered into some details of her present situation, her occupations, and her future plans; touched upon the characters and conduct of her children and relations; but the most remarkable part of her oration was that in which she alluded to the persecution of some invidious persons, whose aspersions had occasioned her much grief and trouble. She vindicated her character in a manner so solemn and pathetic, that none who listened to her were unmoved, for there was such a genuine air of truth in her asseverations, that she seemed to leave in every mind a full conviction of her innocence. Perhaps, under other circumstances, we should have been disposed to consider such a specimen of eloquence ridiculous and barbarous: but the place, the occasion, the plaintive looks and energetic manner of the speaker, not less than the profound attention of the auditors, imparted solemnity to the scene, and gave our minds a serious impression: besides, this address to a departed spirit had a somewhat awful effect; so much so, that, during many of her adjurations and emphatic pauses, we were prepared to hear responses muttered from the spirits of the air, or even to behold some grim shade start up from the sepulchre. It was pleasing to hear her pronounce a gloomy encomium upon some white man, who made himself loved and respected by his kindness to the

negroes. He would protect a widow from oppression; relieve the needy; comfort the afflicted; he was not only an indulgent master to his own servants, but always strove to save the slaves of others from the tyranny of unfeeling owners, or the cruelty of overseers. Poor Oliver! He was a just man, and a gay one; for nobody was happier, until, with one blow, dealt by the hand of destiny most unexpectedly, he lost his wife and child. Then his hopes all withered: he fell like a tree that is struck down by thunder in a storm: his soul sickened; his body wasted; and, ere three months were passed, he went to share the grave of her who had been so long the partner of his bed.

There was one thing in her harangue that would have been insufferable, except from the peculiarity of her situation, namely, her excessive egotism, and the favourable light in which she set her own character and conduct. It would, however, have been unfair to have ascribed this to self-conceit, or a boasting disposition, since she ought only to be viewed as pleading her own cause in a high court of conscience, with the view to clear her character from the aspersions of an enemy; and so far from being designed as a public exhibition of oratory, it ought only to be regarded in the light of a private conference between the widow and her husband's spirit, supposed to hold a meeting with her at his grave, where she went for the purpose of rendering an account of all that concerned herself and her family. It is proper to add, that speeches of this nature resemble those entrusted to the priest's ear at confession. The negroes hold the graves of their relations in a sort of holy dread, where they are bound to utter nothing but the truth. On this account, persons suspected, or accused of serious crimes, are often carried to the burying-ground, and there interrogated upon oath. Not many months previous to this period, three men, apprehended on suspicion of a murder, were judiciously examined in this very grave-yard, where, being put to their oaths, they made a full avowal of their guilt; although, until submitted to this test, they had, upon former examinations, sworn to their innocence.

A planter, upon a less serious occasion, practised a simple but ingenious stratagem to detect the perpetrator of some thefts committed on his property. Upon individually interrogating his slaves, they all most solemly affirmed their innocence; however, he was so thoroughly persuaded that all the parties could not have spoken truth, that he immediately announced his determination to find out, by virtue of magic, who was the real offender. Quitting the room for a short space, he locked the door, to prevent any of the slaves from escaping. On returning, he brought in a hat, which he placed upon a table in one corner of the room. This done, he said, "that hat is enchanted, and it will soon let me know which of you tells the truth, or utters falsehood." He

ordered them to go in succession, and laying the right hand on the hat, to make a solemn protestation of their innocence. These orders being obeyed, he made them stand in a line, and hold up their right hands; when, after examining their palms, he pitched upon an individual, who, in an agony of terror, knelt down and confessed the truth. The result anticipated by the planter had taken place; he judged that the guilty person would not have the courage to press his hand upon the hat, and would only appear to touch it, from the force of superstitious dread: on this account he covered the crown of the hat with some paint, a part of which remained upon the hands that had been fearlessly impressed upon it; while he who shrunk from the test, though a foul thief, was able to hold up a clean hand. But this is a digression—let us return to the widow.

When she concluded her oration, she unpacked some small baskets, containing cold fowls, and many other articles of food: after cutting them in pieces, she distributed them about the grave with much formality. Then taking a handful of boiled rice from a dish, she threw it in the air; some of this falling upon our hats, she came to wipe it off, making an apology, and then pressed us to eat some of her provisions, which we declined; but not to give offence, accepted some sorrel-water, a drink of a beautiful scarlet colour; which, in the way they make it, is a beverage as cooling and palatable as lemonade. This good woman, having thus finished her funeral rites, taking up the empty baskets, departed with her servant. Her exit was a signal for the assembled crowd to scramble for the good things she had so liberally provided; those who were lucky enough to pick up any plunder, sitting down upon the grave, began to gobble up the dead man's dinner without so much as waiting to say grace, laughing the while, and joking in the most graceless manner; so that whatever pleasing impressions had been made during the oration, were now effaced by so unworthy a conclusion of the ceremony. Though this widow abstained herself from sharing in the banquet, I found that was not every where the practice; for, many years afterwards, when walking near a burying-ground at Port Royal, Jamaica, I witnessed a most curious scene, acted by a young woman in a state approaching to frenzy; with the air of a Bacchante, starting up from table, she ran off screaming in a piteous manner. In vain her companions sought to tranquillize her; she assailed them with fury; nor was it until they had employed force that they were able to overpower her, and carry her away to a boat. Her hair was dishevelled, and her clothes almost torn from her back during the scuffle, in which she lost one of her shoes. Being surprised at this girl's outrageous conduct, I inquired the cause, when it appeared she had been giving a funeral feast at her sister's grave, where she had drunk a considerable quantity of wine, the effect of which

she had heightened by working herself up into a transport of grief, which terminated in the scene above described. I was much astonished, because this young woman was very well conducted, of reserved manners, and superior to the generality of the mulattoes. It would appear that something like a display of overpowering passion is expected on these occasions, and that strong liquors are resorted to for the purpose of exciting this extacy, which terminates in actions so disgustingly extravagant.

Revolting as I thought this scene, I was less shocked than I have been since, to witness the exaggerated acting of an Irish keener, seated on a bier, howling, and shewing forth such deeds of woe, as never are beheld except when they are paid for; or the brutal behaviour of a profligate, who, at his brother's funeral, staggered up to the grave in a fit of intoxication, leaped upon the coffin, and ordered the sexton to bury him alive. Perhaps to a young woman like her whose pranks I witnessed, the conduct of this fisherman might have called forth sympathy, and have been considered the sublime of grief; whereas we even read of such a scene with shuddering disgust. Mark the different effects produced by national habits, and the influence of education upon the polished European and the daughter of a slave. Nor let their modes of shewing grief excite disdain, or call forth ridicule.

ERICSSON'S LEAD, OR PATENT SOUNDING INSTRUMENT.

SOUNDINGS are taken for one of two objects, namely, that of finding the place of the ship on the chart, or that of marking the depth of water in constructing the chart; the inconvenience and loss of time consequent on rounding a ship to the wind, every time a cast of the deep-sea lead was necessary, led to the introduction of Massey's lead; an instrument too well known to need any further remarks here. In unusually deep soundings, however, especially in laying them down, recourse is had to the deep-sea lead, as the only method in which (under all circumstances) implicit confidence can be placed; but as the line which the lead takes down with it, considerably retards its descent, the ship drifts over it, and by the time the lead has got to the bottom the line is no longer up and down, which is the sole condition on which the depth is measured; and therefore an arbitrary allowance, depending on circumstances, must be made on the depth shewn, which causes all deep soundings, unless taken under the most favourable circumstances, to be liable to great uncertainty; and accordingly all persons who have been employed in laying down deep soundings, know it to be a very laborious and unsatisfactory operation.

The electricity of air, and its buoyancy, have suggested themselves to some persons as principles likely to be employed with

success in the construction of sea-gages; but the difficulties in the way of applying them to practice have been, first, the graduation of the scale, because the air being compressed into half its bulk at twice the depth, the graduations must diminish very rapidly; also, the establishment of a register which could be depended on to certainty to remain at the same point, after the pressure that advanced it was taken away; and, lastly, the enormous pressure at great depths, which proves destructive of hollow instruments. These difficulties have been got over in the instrument we are about to describe, in the simplest and most effectual manner, and by a mode of construction which we believe to be quite new.

A is a glass tube open at both ends, firmly bedded in the cast-iron stem F, by means of plaister-of-paris, or other cement. B is a small tortuous pipe inserted into the top of the glass tube, and in continuation with it; this pipe is open at the top, and communicates therefore freely with the air-chamber C; and this last, with the external air by the small tube, whose orifice is D; E, is a common stop-cock at the bottom of the glass tube; and G is a slide, or guard to the glass tube and the graduated scale of fathoms. The lower end can be loaded with lead when required, and takes the arming as usual. When the instrument is to be used, the stop-cock E is closed, by setting it at X, fig. 2, after turning it to let out any water that may have been suffered to remain in the tube; the guard is drawn round, and the lead is thrown overboard, with the line attached. The pressure of the water at D begins at once to exceed the pressure of the air within the chamber C and tube A, which of course was that indicated by the barometer before the lead was thrown overboard, and the water begins to rise through the small tube D into the chamber, driving the air before it into the upper portion of the chamber and tube A, until it has risen to the top of the tortuous pipe B. At this instant the whole of the air before contained in the chamber and tube is confined in the tube only; the water therefore still entering at D falls over the orifice of B into the glass tube, and rises in it; the division to which it rises always indicating the depth to which the lead at that instant has descended.

It is evident from this description, that the air in the tube being in a high state of compression before the graduation *begins*, the divisions of the scale are more uniform, and therefore indicate greater depths with more accuracy than if the tube alone contained all the air.

Again, the register, being the column of water in the tube, cannot be affected by any shock, nor disturbed, unless the whole be held for a second or two with the upper end downwards, which the tortuous or corkscrew tube B is intended to provide against; and, lastly, the pressure of the air within being always exactly equal to that of the water without, there is no strain upon any part of the

instrument, except the effort everywhere to crush the solid material, which probably would not take place even if the force were infinite, because there is the greater probability that the water would first penetrate the pores, and thereby preserve the equilibrium.

As the lead is hauled up again, the air expanding in the tube, forces the water gradually out of the chamber, and it rises till it arrives at the surface. When it is taken on board, being always held nearly upright, though not necessarily quite so, the guard is drawn back, the soundings read off, and then the arming examined. The water then being let out by the cock, it is set again at X, and the instrument is ready for use.

The divisions on the scale are made not by calculation, or any theoretical process, but by actually subjecting each lead to the hydraulic press.

As this instrument is capable of measuring very great depths, it will probably be made available, in scientific hands, to determining the depth of the ocean, a problem of great interest. On this ground, as well as to examine the effects of the coldness of the water, and its compressibility, on the indications of the scale on ordinary occasions of sounding, we shall enter upon an investigation of the properties of the instrument.

Since at any depth, in consequence of the free communication, the pressure without (p) is in equilibrium with the elastic force within (f), we have the equation $p=f$, both pressures being referred to the unit of surface.

Let a be the depth of the machine in a state of rest, ρ the density of water, β the height of the water-barometer. Also, the elastic force being directly as the whole quantity of air, or solid content (S) of the chamber and tube, and inversely as the space occupied by the air in the instrument, in the part that is free from water, will be equal to $\frac{s}{S}$ multiplied by some constant A; hence the first equation becomes

$$(a+\beta)\rho = A\,\frac{s}{S}$$

To determine A; when the instrument is at the surface, $a=o$, and then S and s are identical;

hence $A=\beta\rho$, hence

$$a+\beta=\beta\,\frac{s}{S}$$

Now S is the reservoir or chamber C, *plus* the glass tube, whose length denote by l, and area by πr^2, neglecting the small tube at

* Captain Ericsson has constructed another form of this instrument, in which the equilibrium is established between the weight of a column of quicksilver and the elastic force of nitrogen gas, but it is the same in principle as that here discussed by Lieut. Raper.—Ed. N. M.

D, and the thickness of the glass in the tortuous tube B, as insensible, and s is that part only of the glass tube which is free from the water, standing at the height h, plus the small tortuous tube B, whose content is $t\pi r'^2$, or $s=(l-h)\pi r^2+t\pi r'^2$, hence

$$a+\beta=\beta\frac{\left((l-h)r^2+tr'^2\right)\pi}{C+l\pi r^2}$$

which is the equation connecting the depth, dimensions of the instrument, and height of the barometer, exclusively of considerations of temperature, in which $tr'^2\pi$ may be neglected.

Taking for granted, to begin with, that the water is colder than the air, the quantity of air actually compressed into the space s is not S, but is S diminished by a quantity due to its condensation by cold. Let θ=the temperature of the air, θ' that of the water at the depth a, in degrees of Fahrenheit, and α the fraction which a given mass of air expands by the addition of 1° of heat, ($\alpha=\frac{1}{480}$ nearly); then S′ being the content, or mass of air, as affected by temperature,

$$S'=S-\alpha(\theta-\theta')S=\Big(\big(1-\alpha(\theta-\theta')\big)S.$$

hence, by reduction, we get

$$h=l-\beta\frac{\big(1-\alpha(\theta-\theta')\big)S}{(a+\beta)\pi r^2}$$

Now $(a+\beta)\pi r^2$ is a column whose base is the area of the glass tube, and height the depth of the instrument under water *plus* the height of the water barometer, let c = such a column; then

$$h=l-\beta\Big(1-\alpha(\theta-\theta')\Big)\frac{S}{c}$$

If there be no difference of temperatures, let h_o be the height in the tube, then

$h_o=l-\beta\frac{S}{c}$; since $\theta-\theta'$ cannot exceed 130°—32° or 98°, $1-\alpha(\theta-\theta')$ is always less than 1, hence $\big(1-\alpha(\theta-\theta')\big)$ is always positive, and $\beta\big(1-\alpha(\theta-\theta')\big)\frac{S}{c}$ is less than $\beta\frac{S}{c}$; hence $h>h_o$, or, the water will always stand *higher* in the tube than if no such difference of temperature existed.

Subtract h_o from h, then $h-h_o=\alpha(\theta-\theta')\beta\frac{S}{c}=\alpha(\theta-\theta')\beta\frac{S}{c}$ nearly, as β is small to great depths; that is, the error of the scale caused by the difference of temperature is as the height of the barometer, and inversely as the depth; hence, as the depth increases it becomes of less consequence.

To find at what depth, with a given instrument, the graduation will begin, making $h=0$, and supposing $\theta=\theta'$ nearly

$0=l-\beta\frac{S}{c}$ nearly; whence a is found.

As doubts were expressed by some persons as to the probable

discrepancy in the two results shown by different instruments, graduated under different temperatures, we will discuss this point in an extreme case.

Suppose one instrument had been graduated in water at 40°, while the air was 80°, and the other in water and air of equal temperatures, what is the difference of soundings shown by the two?

Let $h_{,}$ be the height of the column of water in the tube of the first, then $h_{,}=l-(1-\frac{1}{480}(80°-40°)\beta\frac{S}{c}$; or, $h_{,}=l-\frac{23}{24}\beta\frac{S}{c}$. Hence, $h_{,}-h_{\circ}=\frac{1}{24}\beta\frac{S}{c}$; now, since the water fills every part of the instrument, except the upper portion of the glass tube, whose length is l, it follows that $\beta\frac{S}{c}$ is the upper, or unoccupied part of the tube; hence the difference of the soundings of the two instruments is $\frac{1}{24}$ of the length of the tube above the water, which corresponds in the 100-fathom lead to about *one fathom* in all cases. This is a very curious result, and is quite satisfactory as to the performance of the instrument as regards temperature.

By some experiments made by Captain Ericsson, it appears that water loses $\frac{1}{1000}$ of its bulk in 100 fathoms' depth. This will be quite insensible on common occasions: for scientific purposes a correction may be applied.

St. Thomas's and Tortola compared as Free Ports, and as Rendezvous for the British Packets.

In January last, I received the second volume of Mr. Martin's History of the British Colonies, a book which must be of great value to any one having connections with them; and finding, by many years' local acquaintance and experience, that the *superiority* of the situation of Tortola as a harbour and roadstead, as compared with that of St. Thomas, was misrepresented, I wrote the following in the St. Thomas Times:—

St. Thomas, Jan. 9, 1835.

The writer of these lines had the pleasure to receive a book lately published in London, entitled "History of the British Colonies," by Mr. R. Montgomery Martin. This work has been executed with a great deal of labour and knowledge; but still it is with this, as with all works of such general information—the most able writer cannot have visited personally all the places described, but must often have had recourse to others for information; and it may often happen that those persons or writings consulted for information, may not have had a true and practical knowledge of local circumstances, particularly of foreign colonies. This has been partly the case with the above-mentioned volume. We find,

for example, in vol. 2, appendix O, a comparison between St. Thomas and Tortola as free ports. The author says, "Nothing in the system of restrictive policy has been more palpably injurious to national or colonial prosperity, than the refusal to place Tortola on the same footing as St. Thomas, in regard to free-port privileges; and, what is equally singular, the English packets call at the foreign island of St. Thomas, instead of Tortola; although Tortola *is preferable* in geographical position, in the convenience of the harbour, as a healthy residence, and in every respect which could entitle it to a claim to a fair and honourable commercial competition."

The author can certainly not have visited Tortola and St. Thomas, or examined the chart of the Virgin Islands, which would shew him at once the vast superiority of the situation of St. Thomas's harbour, as a rendezvous harbour or free port. Road harbour in Tortola has dangerous reefs at the entrance, and is surrounded by small islands for several miles, with narrow passages and sunken rocks, between which the vessels bound to Road harbour are obliged to pass, when the current is often setting at the rate of three to four miles an hour in different directions, and the wind between the islands, with light breezes or northerly winds, unsteady. Even the last packet which had to land the mails at Tortola, before coming to St. Thomas, was obliged, with a stiff northerly breeze, although she made several attempts to reach the harbour of Tortola, to bear up for St. Thomas, and from thence send her mails up to Tortola.

St. Thomas's harbour is situated on the south side of the island, has an open entrance, without any dangers but what are visible, and a spacious harbour, able to hold 300 to 400 sail, with a depth of from three to six fathoms water, and good holding-ground. And the batteries and other distinctive marks by the entrance, and the town in front, make it also easy for large ships to enter the harbour, even in a dark night, without assistance of a pilot. In the Careening Hole, are large moorings on shore, in which vessels may be secured, and lie as safe as in any harbour in the West Indies, during the hurricane season. The island and harbour of St. Thomas is found to be as healthy as any in the West Indies.

The author further says, "Such a spot for rivalling St. Thomas (as Tortola) is not possessed by the Government, and that vessels from the Windward Islands would save by it two days' sail at least, by not going so far to leeward to beat up again."

It cannot be possible that it should make more than one day difference, if any, to go to St. Thomas and return to the Windward Islands, as they lie in a south-easterly direction; and of course the distance, with a southerly or northerly wind, is not much more to St. Thomas than to Tortola, which islands lie E.N.E. and W.S.W. from one another.

The author also says, "That by a free port is meant this: that the people of all countries should be at liberty to settle there, to purchase land, to build houses, &c. Further, that Tortola is geographically placed for the purposes of commerce, between the old world and the new, and may be made the link to unite them in trading intercourse, and in the bonds of friendship, just as St. Thomas does now," &c.

To this may be answered, that Tortola is far from being so conveniently situated, and easy for shipping, as its neighbouring island St. Thomas; and it might be supposed that few or none would settle in Tortola; which port could never be expected to get more free privileges than St. Thomas has long been in possession of, and which settlement would be attended with heavy expenses, by building stores, dwellings, long wharfs, &c., all which, in a far superior commercial period, have been erected in St. Thomas. And let us ask, in what trade could Tortola rival St. Thomas? The mercantile transactions with the British Windward Islands, are of little consequence, and may shortly be expected to be of far less. For the trade with these islands, the free-port Gustavia on the island of St. Bartholomew, is much more conveniently situated, and lying nearly north from them, the vessels can in general run with a free wind between St. Bartholomew and the British Windward Islands, the Virgin Islands excepted.

St. Thomas is equally conveniently situated as Tortola, for trade with Europe. The distance between these places is but three hours' run, and European vessels in general make the channel between Guadaloupe and Antigua, which islands can be seen at a great distance, and running in the latitude of the mid-channel, there is a free and open passage, which can with equal security be passed by night or day; and indeed it would be extraordinary that any vessel coming from Europe should steer for any other passage; and the frequent wrecked vessels on Anegada, Barbuda, &c., ought to be a good warning for captains rather to have twelve hours' longer run, and be safe.*

As to the trade with South America, St. Thomas is more conveniently situated than Tortola. Vessels coming from La Guayra, and the ports west thereof, can but seldom fetch the harbour of St. Thomas, and of course Tortola will still give nearly a day's longer voyage, from being to windward of St. Thomas. As to the trade with Porto Rico, St. Domingo, Jamaica, Cuba, and the Bahamas, St. Thomas is of course nearer than Tortola.

Having expressed these sentiments, I was surprised to find in the Nautical Magazine for June last, an article written by

* It may here be observed, that the most of the Windward Islands are situated more easterly than they are laid down in the charts; the island of Barbados being about nine miles more easterly; the island of Nevis, which is frequently passed by night, lies about three miles more southerly than laid down in the charts.

Mr. Schomburgck, the contents of which were meant as a refutation of the above.

Mr. S. says, "As the remarks of the Speaker of the House of Assembly, would have borne at once a contradiction to the leading points in the above-mentioned article, its writer took no notice of them."

The Speaker says in his letter: "Would Great Britain concede to us such a boon, under the protection of the British flag and British laws, it is not too much to say, that every class of merchants now trading to, or residing at St. Thomas, would immediately take advantage of it, as there is no single convenience connected with St. Thomas, which Tortola either does not now, or could enjoy two-fold; in point of healthiness, no comparison can be drawn. At a small expense it might be rendered almost impregnable to attack in time of war, as there is a reef which runs out, on which a water-battery might be constructed, to command both the harbour and roadstead, and be covered by the forts now built on the hills around and over the town. The constant presence of vessels-of-war would not be necessary, either for the protection of the commerce or revenue, as nothing could either enter or depart without permission."

I may really ask what conveniences Tortola has, in preference to St. Thomas? its harbour can certainly not be compared with that of St. Thomas; in point of salubrity, St. Thomas is considered as healthy as Tortola; in St. Thomas the mortality is greater, because the town alone has more inhabitants than Tortola, having above 11,000; and amongst these, a large number of foreigners, besides nearly 100 vessels generally in the harbour. As to fortifications, I believe St. Thomas has as convenient natural defences as Tortola; and furthermore, St. Thomas is belonging to a nation which is not easily or suddenly involved in war, and where all the foreign vessels lie in perfect security, free from all alarms arising from any sudden breaking out of hostilities between the greater European powers; a disadvantage which would constantly attend Tortola, as belonging to a nation which is always early involved in political or warlike disputes. The security of property is therefore much greater at St. Thomas than at Tortola.

Mr. Schomburgck not being a seaman, appears not to be aware that it is not easy for a captain or navigator not locally acquainted to distinguish the different passages, coming from sea, and among a large cluster of small islands, as those surrounding Tortola, and particularly those on the south side.

The Frenchman's Cap, Buck Island, and the batteries on both sides of the entrance, are such excellent and distinctive marks, that a stranger may at any time, night or day, enter the harbour of St. Thomas, and cannot possibly, with a little attention, make

any mistake. Frenchman's Rock to the west, is also a distinctive mark from the passage to the west; and outside the harbour, to a distance of several miles, is good anchoring-ground all over; and within, at three miles' distance, there is not above fifteen fathoms depth of water.

The dangers in the track of vessels approaching the harbour of St. Thomas, are not so dangerous as it pleases Mr. Schomburgck's imagination to make them. The principal danger is the Packet Rock: this shoal has but five feet water on it, between Buck Island and the main land, distant from Buck Island about 6,500 feet, and from the main land about 3,800 feet; of course near two-thirds towards the main land. Buck Island can be approached to nearly a ship's length on all sides, and vessels in general go outside Buck Island, between that and Frenchman's Cap, and from thence they steer for the harbour of St. Thomas, which can never be mistaken, as the batteries on both sides of the entrance, and the town and shipping in front, are visible at a distance.

I do not know of any mail-boats lost on Packet Rock. The reason that the Danish man-of-war ran on this rock was, that the pilot, who wanted to shew an officer on the forecastle the rock under water, took the marks so close, that the ship run directly on it. I am in possession of a chart published in 1718, where the Packet Rock is laid down; and I have seen a number of charts published at different times, and in all of these the rock appears; and therefore vessels not particularly well acquainted with the harbour, go outside of Buck Island; and which track is but little, if at all, out of the way. In 1822 an accurate chart was published of the south side of St. Thomas, from a survey taken by the Captain of the port of St. Thomas, at present a Commodore of the Danish Royal Navy, and Knight of Dannebrage, L. I. Rohde, well known from his excellent Universal Telegraphic System of Signals,* which is lately published in different languages. The chart has been republished in London, and is sold by the Admiralty chart-sellers.

About two years ago, two mail-boats were lost outside St. Thomas harbour; the one, coming from Tortola, was run on shore in the evening inside a small key lying close to the main land, and where there is hardly one foot of water. The vessel was, by assistance from a man-of-war, taken twice off the reef, and the captain, by bad management, run her on again. The other mail-boat was coming from St. Thomas, and ran in the evening on the Frenchman's Cap, with such a velocity that she sunk in about ten fathoms water, alongside the rock. These accidents can never be

* We have noticed the appearance of this volume in its English garb, but we have not yet found that it has made much progress into general use. ED.

any proofs of difficulty in approaching St. Thomas harbour, the dangers being above water.

The Triangles are above water, or in the water's edge towards the eastern shore, and likewise marked in all the charts, so nothing but carelessness can make them dangerous. The rock, with fourteen feet and a half water on it, is inside the eastern battery, and not at all in the way for large vessels steering for the harbour.

Mr. Schomburgck further says, "A shoal lies almost in the middle of the anchorage, with only seventeen feet water on it." This is not the case, and there is no place in the harbour with that depth, unless where the depth gradually decreases towards shore.

Mr. Schomburgck further says, "Vessels from leeward, bound for St. Thomas's, have likewise to avoid various dangers, in the shape of shoals, rocks, &c., which lie to the westward of the harbour; and as it frequently happens that European and American vessels make the Virgin Islands to the northward of them, they prefer to sail round the western end of St. Thomas, and beat up to the harbour; these rocks come more or less in their track, according to the distance they stand in for the shore; and the current being there equally strong as in the passages between the islands to the southward of Tortola, the same objection exists on which the writer of the remarks in the St. Thomas Times lays so much stress."

This I must declare is ridiculous in the extreme. Between St. Thomas and Crab Island is a more open, distinctive, and free entrance into the Caribbean sea, than any where near the Virgin Islands. St. Croix is situated about eleven leagues to the south of St. Thomas, and no vessel but a Drogher would cruize inside small kays, where they have an open and free passage before them, and may, by night or day, beat up to windward, and by the leading marks run into St. Thomas harbour, even in the middle of the night, with safety.

Almost daily I see a number of vessels lying at anchor in the harbour of St. Thomas, which have arrived in the middle of a dark night, and frequently without the navigators having been here before.

Mr. Schomburgck further says, "The harbour of St. Thomas not being protected by a reef or chain of islands, as in Tortola, a southern gale causes always injury, and frequently sets the vessels drifting. Heavy waves raised by the same, find a free entrance into the harbour, and, their force not being broken, the shipping and wharfs are endangered. The correctness of this observation is proved by the southern gales in August, 1830 and 1833, Sept. 1834, &c., when the shipping in the harbour of Tortola did not suffer the slightest injury, while several vessels, and the wharfs in St. Thomas, were severely damaged. In August, 1830, no vessels

were lost in Tortola, but in St. Thomas there were four or five, and several very nearly so, by dragging their anchors."

The harbour between Prince Rupert Rock and Prince Frederick's battery, *which is* the entrance of the harbour, is about 1,000 feet wide; and the harbour inside, across the entrance, is about 7,800 feet; where the vessels in general lie at anchor, about 6,000 feet wide; and of course the most of the vessels may lie entirely land-locked.

I have seen at St. Thomas severe hurricanes from the south, but never found the sea in the harbour worse than that in which a boat could go out, if the strength of the wind would permit.

Mr. Schomburgck also says, that the correctness of his observation is proved by the southern gales in August, 1830 and 1833, September, 1834, &c., when the shipping in the harbour of Tortola did not suffer the slightest injury, while several vessels, and the wharfs in St. Thomas, were severely damaged.

In St Thomas harbour, seldom less than fifty vessels are at anchor, and frequently upwards of a hundred; and in Tortola, in particular in the hurricane season, seldom more than one or two droghers, belonging to the place, and of course extraordinarily secured.

The danger in a hurricane, and the damages done, are in general caused by the sudden shifting of the wind from one quarter to another, whereby the anchors are started from the ground, and thus vessels are sent adrift, and run foul of others near them, producing more damage than is caused by a steady gale; and the most fatal hurricanes in St. Thomas have been those from the north-west quarter, when of course the injury was not caused by any sea in the harbour.

By the present and very convenient establishment of the route of H. B. M. packets, the steamers from Jamaica can hardly arrive at St. Thomas in time for the stipulated period of sailing of the packets, and of course far less at Tortola; and I am surprised at Mr. Schomburgck's reasoning on this subject.

The British packets are a magnificent political and commercial national establishment, to promote her manufacturing views, prosperity, and other purposes; and in this view St. Thomas is an outlet for British goods, so far exceeding Tortola, that a comparison would be ridiculous. I presume more orders for British goods are sent from St. Thomas in one fortnight, than *are sent* from Tortola in one year; besides this, there are a number of British mercantile houses already established in St. Thomas.

That the packets should rendezvous in Tortola, and there lie until the mail-boats and steamer arrive, merely that the crew and passengers should spend a little money in buying supplies from the Tortoleans, is an argument not deserving of notice. What would the crew and passengers say to an act passed in these

words, for such a purpose! Surely it would excite their indignation to be so restricted, more especially as St. Thomas offers the most abundant supplies both of necessaries and luxuries, at astonishly cheap rates, for their homeward passages; and I have heard commanders of packets declare, that they would, if such an arrangement should take place, land the mail at Tortola, and run down to St. Thomas, as they could be in good time back again, in order to receive their mails for England; besides, more than the half of the inhabitants on the British side of the Virgin Islands have their support from St. Thomas, by bringing here their fish, wood, vegetables, &c., for sale, and buy in return other necessaries, which they always get cheaper here than in Tortola.

T. A. KJŒR, F. R. G. S., &c.

St. Thomas, March 15th, 1836.

To the foregoing, we may add the following opinion of a naval officer, extracted from his letter on this subject:—

With respect to Tortola as a packet station, I can see no reasonable objection: the anchorage in the bay is certainly not *good*, the water is too deep; a long ground-swell rolls in with strong trades, and very heavy gusts rush down the valley at the head of the bay, which in a hurricane would, I apprehend, be exceedingly destructive. Still, under the ordinary circumstances of wind and weather in this neighbourhood, I consider the safety of a vessel (well found in anchoring tackle) not to be endangered.

It is far more secure than Carlisle Bay, and perhaps several other of the packet anchorages in the Windward Islands.

At present, there is not very good accommodation for the reception of passengers, who would have to resort hither from all parts of the West Indies, to await the arrival of the packet. But this is a secondary consideration, and indeed would very soon be remedied, if I may judge from the energetic spirit of the principal inhabitants. They appear to be very anxious for the favourable result of their application, which is not to be wondered at, for it would be the means of circulating a considerable sum of money among the various free classes of society constituted in the island, which is now spent in a foreign colony, and somewhat restore the energies of a possession which at present appears to be in any but a flourishing condition.

I understand that in their memorial they have also petitioned for the bay to be made a free port, to rival the neighbouring island; but the obstacles which I have stated, would, I conceive, be quite fatal to it; besides, the confined situation of the town does not admit of sufficient space for the erection of wharfs, warehouses, and other extensive buildings attendant upon such an undertaking.

Lighthouse on the Start Point.

Trinity-House, London, 27th April, 1836.

Notice is hereby given, that a light will be exhibited in the light-house which has been erected on the Start Point, on the coast of Devonshire, on the evening of Friday the 1st of July next, and thenceforth continued every night, from sunset to sunrise, for the benefit of navigation.

The character of this light, which will burn at an elevation of 204 feet above the level of the sea, at high-water spring-tides, will be that of a Powerful Revolving Light, shewing a brilliant flash, at regulated intervals of One Minute, and, in addition thereto, a Stationary Light will also be exhibited in the same lighthouse, in the direction of the Berry Head.

Portland High Light.

And, after Friday the said 1st of July next, the High Light at Portland will cease to be exhibited as a Revolving Light, and will be then and thenceforth continued as a Fixed or Stationary Light, together with the Low Light, both being visible as Fixed Lights, in the same direction seaward as heretofore.

By Order, J. Herbert, Secretary.

The Star Packet—Stability by Weight.

To the Editor of the Nautical Magazine.

Sir,—When Captain Symonds introduced the improvement into our navy of extending the ship's beam, the thought immediately occurred to me, that the unquestionable and evident advantages thereof would be endangered when brought into practice, through the prejudice existing in dock-yards, and among some naval officers, as to the necessity of the quantity of weight which is invariably put into our ships of war, with a view to giving them stability; this weight being likely to be placed in the bottom of the new ship, although the extension of beam given not only rendered all such weight unnecessary, but absolutely injurious, and highly dangerous.

These remarks are the result of reading the dreadful account of what has lately befallen the Star; and, from what I can learn, I cannot but come to the conclusion, that Captain Symonds' ships are "laboursome," that is to say, have too much stability—artificial stability I mean; the truth being, that their construction gives them a degree of natural and proper stability which is wholly lost sight of when they come under dock-yard regulations, as to ballast, water, and stores, and the stowage thereof.

Without professing to know what weight the Star had in her,

or how placed, I will come boldly to this conclusion, that, unless she had a great deal more than she ought to have had, and that improperly placed, she *could not* by any possibility have suffered what she is described to have done; and, drawing similar conclusions from many trifling remarks, I verily believe that the whole of the ships of this construction would make equally bad weather, were they to encounter such weather as the Star did, and that they would all be dismasted, not excepting even the Vernon. For, on looking at the beam of the Vernon and Pique, and judging from the draught of water of the former, and from a view of the latter, as shewn lately in your magazine, these two ships are evidently so immersed by weight, which, from necessity, *must be placed low*, that I don't hesitate to say, that they would inevitably make as bad weather as the Star. And this effect of overloading applies to all other of Captain Symonds' ships.

This is a subject to which I have been led to pay very particular attention, having myself been in a ship, rendered by improper loading so dreadfully laboursome, that scarcely any earthly consideration would induce me to again undergo what I suffered in consequence. Many a sleepless night I lay considering on the causes that produced such a state of discomfort and danger, in a ship otherwise a fine sea-boat. I then perhaps pondered over every thing that could produce the effects I witnessed; and it would lead me into the length of an essay, for which I cannot intrude upon your space, (which I have elsewhere occupied so considerably,) to enter into a detailed and scientific discussion of the manner in which, in various ways, too much weight placed in the bottom of a ship operates to create such danger, and produces such scenes as no one, let him have been at sea all his life, can have any idea of, without having been in a ship under the circumstances I allude to. The most decided conclusion, however, which I came to, may appear somewhat paradoxical, namely, that a ship with an excessive *artificial* stability, rolls deeply and dangerously, because *she has a decided inclination to remain upright.* When a sea comes right a-beam of a ship, yield to it *she must*, and does, be the weight in her bottom what it may; it is this weight which produces the quick and dangerous reaction, when the impulse is passed, and which causes the mischief; and this reaction, or rolling to windward, has laid the Star open to such a subsequent lurch to leeward, from her heel to windward bringing her in contact with some peculiarly awkward sea, which has produced what, to the inexperienced, no doubt, will appear an unaccountable effect, namely, thrown her upon her beam-ends, with her tops in the water. This situation she never would have been placed in, strange as the assertion may appear, if she had not possessed such a decided disposition to the *upright* position!

This is a subject that, I would admit, requires a great deal more

consideration and study than is bestowed upon it; and I think it is capable of being very clearly understood, even to demonstration. I am equally satisfied that it is by no means so at present, which an example or two shall shew:—I once had charge of an excessively sharp vessel, one in which perhaps the relative proportion of beam to depth, was as great as in any craft ever built; she had had some kentledge, merely for trimming her. I took it out, which the pilot seeing when he was about to undock her, actually would not take charge of her, without I replaced it, and he was encouraged in this determination by the shipwright. I laughed at it, but was however obliged to comply; and often afterwards actually lay with this same vessel at anchor in exposed situations, without any thing in her whatever! I once was almost similarly placed with one of the ten-gun brigs; she was in dock, with topgallant yards across; she had not been risen upon, nor altered in any way, and the shipwrights thought I was mad to turn her out into the river with a clean-swept hold; but I did so; and she was "as stiff as a church." This brig was afterwards loaded with a cargo of equal weight throughout; it was not particularly heavy; it filled her completely up to the deck; and she was a little deeper than she would have been in her old service. She was quite stiff, though, from her construction, the greatest part of this cargo must have been placed so high up; that, I will answer for it, the general impression in the navy, and with dock-yard officers, would be, that it would have destroyed her stability altogether.

The object of these remarks is to shew, that a very erroneous impression is afloat, which attributes the accident which has befallen the Star to her construction, instead of, as I believe it should be, placing it to the account of the prejudices which possibly Captain Symonds himself may not be altogether free from, or if he is, that he cannot overcome the deep-rooted ones which exist so generally in the navy—of the necessity of creating stability by weight. It is to be hoped, however, that the truth may be apparent before it is too late, and has the effect of condemning a really good system; and this truth is, that Captain Symonds has produced ships *that of themselves are stable*, and require great attention not to interfere with this, their natural good property. As for throwing the Star upon her beam-ends if she had been properly ballasted, it might as well be expected, that throwing a shilling down upon the table, it should take up a position upon its *edge*, instead of its flat surface.

I shall from time to time, Mr. Editor, take opportunities of offering, through your good work, all the support I can find in argument, in favour of the system of increased beam, the value of which I am so fully convinced of.

MERCATOR.

London, 3d February.

MORGAN'S PADDLE-WHEELS.

To the Editor of the Nautical Magazine.

SIR,—I returned to town a few days ago, after an absence of some months, and have been much amused by an article in your Magazine of last November, headed, "Paddle-wheels—Hiram v. Morgan and others."

In that article; your correspondent Hiram attempts to give an answer to the observations which were made, by myself and others, on his many "inaccuracies." I preserve the word, although inaccuracies persisted in would warrant a stronger expression. But I will endeavour to abstain from imitating Hiram's example, and making your pages a vehicle for unnecessary and inexcusable personalities, such as those he indulges in with regard to almost every person whose name he mentions.

Leaving it, then, to this modern Iago to "stab men i' the dark," I shall proceed at once to tear aside the veil of obscurity in which he has enveloped his "inaccuracies," and so enable your readers, as Hiram says, "to judge between us," with regard to some of the most important of them.

In the article in question, Hiram has the hardihood to assert, that, with the exception of a solitary case, his facts had not been controverted, and expresses his readiness to acknowledge any error or any injustice arising therefrom. I will give him an opportunity.

At page 294 of the 39th number of your magazine, for May, Hiram took on him roundly to assert of Morgan's wheels, that "if one radius rod gives way, the wheel is useless."

By "giving way" I naturally supposed he meant "breaking;" and in my letter, contained in your 42d number, I stated that such a thing had not occurred, in 5½ years' practice. At the same time, I pointed out how such an accident could be remedied, if it should occur. (See page 469.)

But how does Hiram answer this? The passage is so curious an instance of the "beautiful obscure," and happily so short, that I cannot resist the temptation of extracting it verbatim: he says, "In stating, that if one radius rod gave way, the wheel was useless, it should be recollected I was drawing a comparison between the two systems." (See No. 45, page 663.)

I leave your readers to make out this sentence, if they can. I cannot. How a positive assertion is to be established by a comparison, is quite beyond me.

But even supposing he really did mean to say that the wheel was comparatively useless, I am prepared to meet him, and to assert, without fear of contradiction by any respectable engineer, who has ever been to sea with my brother's wheels, that a rod

could be removed, and the floats detached in a few minutes, ay, even at sea.

But Hiram goes on to say, that "in the old wheel, one, two, or three of the arms may be removed; it is effective: not so Morgan's."

Would not any one suppose that he had ascertained as a fact, this "not so Morgan's."

Now it so happens, that Hiram has himself helped me to the means of disproving this "inaccuracy." For it now seems, that by "giving way" Hiram did not mean "breaking," but any thing you please; and he has raked up an occurrence which took place with the Flamer's wheels; narrating it, with much satisfaction, between inverted commas, as a statement made to him by her first commander.

But what were the real facts? Why, that on the return of the Flamer from Corfu and Malta, on either her third or fourth voyage, in July, 1833, when she was off Cape St. Vincent, a rod, which had originally been defective in length, and had also received a slight bend, so impeded the float as to become worse than useless. Instead of the rod and float being at once removed, which ought to have been done, the vessel put into Lagos bay, where the rod was taken off, straightened, and put on again.

The engines were then again started; but before the vessel had cleared the bay, (not proceeded 120 miles, as stated by Hiram,) the rod again "gave way," if Hiram will so have it, and was then altogether removed, and its float detached. The vessel then continued her voyage without the rod and float, and performed a rapid passage to England, against a fresh N. W. breeze, without their absence being felt or sensibly perceived, either in the engine-room or by any one on board.

Thus, sir, I think I have fully met Hiram in the only instance which his zeal and industry have enabled him to ferret out, and I have satisfactorily shewn that Morgan's wheel, with one rod removed, is not even "comparatively useless," and is "effective." My brother has not yet had the good fortune to have two or three "give way."

Here, then, is a favourable opportunity for the exercise of Hiram's candour. Will he avail himself of it?

Another instance, indeed, occurred a very few weeks previously to the period when Hiram wrote his tirade. I will supply him with materials for a future display of his powers.

The Firebrand, whilst being towed through the canal at Helvoetsluys, was driven by a heavy squall, bodily against a dolphin. Besides having one of the paddle arms bent up to the diagonals, and also a stem broken, a rod was severed by the concussion. The float of the broken stem was removed, the stem itself lashed, and the rod was disconnected; and the vessel, having a most

distinguished personage on board, came home without any diminution of the customary speed of the vessel.

The next subject I shall advert to, is one on which inaccuracy is, perhaps, less excusable, and certainly more dangerous, than on any other. I mean that of figures: with these Hiram seems to deal without much scruple.

For instance, at page 663 he states the cost of the Confiance's wheel, in their improved state, to have been £3891! He may well ask, "Will it be believed?" I have no doubt it will not. I dare say he thought that the particularity of the numbers would give an appearance of authenticity to his statement. But I happen to know that the cost of those wheels has not exceeded one-third of the sum he names.

Again; at page 667 he says, that perhaps the cause of the rejection of my brother's wheels, by the owners of the Soho, might have been the enormous price. "I have reason to know," he says, "£1600, or thereabouts."

Now, an anonymous writer may safely say, "I have reason to know," and needed not the protection of an "or thereabouts;" but I, sir, who sign my name to this paper, have reason to know that the price asked was several hundreds less than £1600, and that the reason why my brother's wheels were not applied to the Soho was that which I stated in my former letter; namely, the difficulty of fitting them without sacrificing the berth-place.

I know not what alterations may have been made subsequently, in the internal arrangement of the Soho, but I know the fore paddle-beams did, at that time, come into the after-end of one of the double sleeping-berths, and must have been removed to suit my brother's plan.*

Again; at page 671, the mechanical performances of the old and new wheels, on the Pluto, are stated as 1290 and 1269 respectively. I know not whether Hiram has some mode peculiar to himself, of arriving at these figures. They certainly will not bear the test of the mode ordinarily employed, and apparently pointed out by himself, at page 668, where he speaks of obtaining a comparative performance by means of the "involution of the velocity, area of immersed section, and the power."

Subjected to this test, and assuming, for argument sake, that the power exerted in both cases was equal, which it was not, we should obtain the following results—

Old wheel . . . $V^2(10{\cdot}05^2) \times$ area immersed $(129) = 13029$
Morgan's . . . . . $(9{\cdot}035^2) \times$ do. $(166{\cdot}66) = 13604$

* By the bye, it is not extraordinary, as I observed in my former letter, that although the superiority of the common wheel over my brother's had been so "clearly and incontrovertibly established," as Hiram asserts, by the trials of the Soho and the Flamer, the owners of the Soho should afterwards have entertained for a single moment the idea of applying my brother's wheels to her.

shewing that the result of the experiment with my brother's wheel was not "inferior, or as 1269 to 1290," but, on the contrary, superior, as 1360 to 1303 nearly.

But what will your readers think of Hiram's honesty, when I direct their attention to the circumstance, that the strokes at the experiments were relatively 27 and 22, as stated by Hiram himself, and therefore the power exerted with the new wheels was only 81·48, or about 4-5ths of that exerted with the old.

For, 27 : 22 : : 100 : 81·48.*

Why do I dwell on these inaccuracies? Not so much on account of their actual importance—and yet they are of some—as with a view to put your readers on their guard against Hiram's results in cases where they have no figures to check, nor any means of ascertaining the correctness of his data.

One or two of these cases I will point out, as instances, and I have done with the question of "inaccuracies"—not for want of materials, but lest I should tire your readers.

At page 669 of your number 45, Hiram pretends to give the Columbia's trial, 2d May, 1833. He sates, that at "11 ft. 10½ in. mean immersion, with 101 tons of coals on board, her performance was—

	Miles.	Mile.
Against tide, with wind . .	9·50	= 7·5 mean per hour.
With tide, against wind . .	5·50	

This is Hiram's statement. Now what was the fact? Why, that (if the official account is worthy of Credence) she performed the distance (one measured mile),

		Mile.
Against tide, &c. in	9′ 49″	= 6·1
With the tide in	5 31	= 10·9
		Mile.
	2) 17·	= 8·5 per hour.

only just one mile more than Hiram candidly and accurately describes.

Again, at page 666, we have a variety of figures and data which I can have no means of controverting. There they stand; but, after the glaring inaccuracies I have pointed out, I cannot bring myself to believe that any of your readers will take them for granted, so long as Hiram chooses to preserve his incognito, or withhold his proofs of their correctness— I could, however refute (as far as positive unqualified statements put forth on my own avowed and open responsibility constitute refutation) many of Hiram's statements, if I did not fear to encroach too far on your

* The experiment with the old wheels was made in 1831, when the engines were in an effective state, and the old wheel in its best possible position.

In 1835, when the experiment was made with the new wheels, the engines were in any thing but an effective state, the vessel very much immersed, and very much out of trim, she being 7 inches too much by the head.

pages, on a subject not, perhaps, interesting to the generality of your readers.

For I can take on myself to assert, for instance, and, if necessary, prove, that at the experiment with the old wheels on the Pluto, August 6, 1831, the mean draft was 5 ft. 9 in.—not 6 ft., as stated by Hiram. But I forbear, and content myself with refutations of your correspondent's statements, from the materials he himself furnishes.

His diagrams, of course, I must pass by, or I shall be again accused of being "unfair in taking advantage of a hand sketch;" and yet these things either are diagrams, or they are not. If they are, let any of your readers examine them with their compasses, as I have done, and I leave them in their hands. If they are not, all the reasonings and conclusions drawn from them are a waste of words.

But I cannot refrain from an observation with regard to one of them, which should, more properly, have come under the head of "inaccuracies."

At page 663, Hiram says, "I have spoken of the common wheel; that of Morgan's is a diagram of the Confiance's, in its improved state." Mark this well, sir, and then do me the favour to turn to number 39, page 293, where you will see that the floats are all hung from, and project on one side only, considerably beyond, the spindles.

Now, what is the fact? Why, that the Confiance's wheels, in their improved state, were actually made off the same patterns as the Blazer's, (at present in the basin at Woolwich,) and, like the Pluto's, (see Hiram's diagrams, No. 45, page 671,) have the floats balanced on, and projecting on both sides of, the spindles.

But the most amusing part of all this is that, because I have denied the accuracy of a diagram, which is on the very face of it wholly inaccurate, Hiram says that this only proves, not merely that I do not, but that my brother does not know the performance of his own wheels. (see page 662.)

For the reason which I have already given for not further refuting Hiram's positive statements, I shall forbear answering those which he puts in the safe and cautious form of questions; and it would be an insult to your readers to point out all his false and inconclusive reasoning on even his assumed facts.

I pass over his giving in one letter a false sketch of Buchannan's wheel, under the shelter of his incognito, and then in another telling us it was taken from an old drawing "which he has reason to believe was made by Buchannan himself."

What can be thought of a man who, after exhibiting in that sketch the paddles all parallel to each other, as they must necessarily be, and all vertical, as they also must be, if they are to be of any use at all, winds up his letter by gravely stating, that in Buchannan's wheel "you may combine all the essential properties of the com-

mon wheel;" no two of whose immersed paddles can ever by possibility be either vertical or parallel to each other.

So scientific and so impartial an officer as Capt. Austin, is too well known in the service, and too truly appreciated by those who have the pleasure of his acquaintance to require any defence of his experiments by me. It chances that he and Hiram have come to opposite conclusions. Capt. Austen derives his from experiments made under sail, the old wheel in the Salamander, and of the new wheel in the Medea. But Hiram, who gives no grounds on which the public is to place confidence in his statements, condemns Capt. Austen's inferences, and disposes of the question by "knowing them to be partial and inconclusive," He does not admire Capt. Austen's conclusions. Well let him refer to Capt. Evan's official report grounded on a long experience of the common wheel while under sail, and Hiram will be as little pleased with the facts therein recited and commented on. He will there find that the common radial wheel offers very considerable resistance to the vessel's progress. Can such a person be answered, or reasoned with? I think not.

One word then as to the weight of the Pluto's wheel, and I have done. On this subject, an apparently bona fide question is asked, and I therefore answer it.

At page 664, he professes to give a detailed amount of the weight of the Pluto's old wheels, which he states at 10 tons 5 cwt. 1qr. 10 lb. instead of 14 tons, which I have stated as their weight, and he says "the new wheels are stated at 10 tons 9 cwt., and does the commander include in that weight the large bearing on the ship's sides and the outer end clutch securing the crank, &c.? both of which are not required in the old wheel."

"My answer is, that the 'clutch,' as Hiram terms, was included; but the bearing or carriage on the vessel's side was not, as these same bearings or carriages have often been used in the old wheel. And I leave it to your readers to judge between us, whether I was not justified in denying Hiram's assertion, in his former letter, that my brother's wheels were rendered "very heavy" by the diagonal braces or trussings which have been substituted for the solid shaft. For the Pluto's are the heaviest wheels for that power which my brother has now in use; and even if we were to take Hiram's own figures, the weight of my brother's "very heavy" wheels would only exceed that of the old ones by 4 cwt.—and if your readers will turn to page 470 of your 42nd No. they will find the weight of a pair of my brother's wheels for similar power to those of the Pluto, and fitted to the Lightning, to be 10 tons, 1 cwt. 3 qrs.—or nearly 4 cwt. lighter than his weight of the old wheel. But in stating the weight of the old wheels at 14 tons, I included that of the timber and stays, from which the vessel's sides have been relieved, by the great diminution of the width of the paddle

boxes; and if Hiram will take the trouble to inquire, he will find that I am not very wide of the mark, and that my former statements are substantially correct.

I am, sir, your obedient servant,
RICHARD MORGAN,
Commander, R. N.

London, Junior U. S. Club, 21 *Dec.* 1835.

P.S. Since writing the above, a friend has directed my attention to a passage in Hiram's letter which I had overlooked, as merely containing one of those personalities which are beneath notice, but which it has been suggested may convey an imputation that I meant to mislead your readers.

In a second letter which I addressed to you, dated 23rd June 1835 (see page 478,) I stated the registered tonnage of the Soho to be no more than 353 tons, whereas the Flamer's is 494.—Now, I am quite willing to admit, that, had this second letter stood alone, and not been intended to be read in conjunction with the letter of the 8th of June, to which it was in fact appended, it might have been fairly laid to my charge, that I was seeking to mystify the subject. But Hiram must have perceived that that statement was to be taken in connexion with the questions asked at page 473, as to the displacements of the two vessels.

It suited his purpose, however, to keep these questions out of sight, and to prepare his readers for his "particulars," as he calls them, by first directing their attention to my "inaccuracy," which I freely acknowledge and trust he will follow my example.

For after setting me right by reminding me that H.M. vessels are not registered as others; turn the page—and, lo! we have the register tonnage of this very Flamer actually given as 333—displacement 467 tons; and then we have the register tonnage of Soho 353, displacement 641 tons, though a little lower down in the page it suits his purpose to tell us that, "the Soho was light." Hiram had apparently forgotten that in his former letter (see page 295), he had written these words, "Both vessels had their stores &c. on board, and ready for the voyage." Perhaps he also forgot to consider the "stores, &c." of the Flamer for three months, as well as three months' provisions, 12 tons of water, and 145 tons of coal, which happened to be on board of her at the time, and would form a pretty little addition to her assumed displacement.

The real displacement of the Flamer when drawing 11 feet water (the draft given by Hiram himself), I have ascertained to be 635 tons, instead of 567 as given by Hiram, a difference of only 168 tons!!! I wish I had the same means of ascertaining what the real displacement of the Soho was.

23 *Dec.* 1835.

The Examination of Candidates, for Masters in the Royal Navy.

The board of examiners at the Trinity House, as at present constituted, is an anomaly. The motives and intentions which led to its formation, were, no doubt, excellent and praiseworthy, but certainly mistaken, as experience has shown. To say nothing of the impropriety of subjecting a naval officer to an examination, conducted, not always in the best spirit—by a board of merchant-skippers, not always the wisest or the most refined of men—what can be more ill-judged than the grounds on which a candidate is admitted or rejected by these judges? The candidate must have served in the Channel, and his log must show it. No matter how fitted or deserving to pass in other respects—by length of service, good seamanship, and full acquaintance with his profession—if he does not appear with this requisite, there is (usually) little chance of his passing.

Now, we object to the test, and the judges. The *test* we object to, because it is no test at all of a young candidate's capabilities. How can it be, when up to that moment, perhaps, he has never been in the Channel, or, if he has, still the best part of his time has been spent on a foreign station. The intention of the framers of this regulation, with which, of course, the examiners have nothing more to do than to stand by, was, we presume, to ensure and to insist on a close and practical familiarity with the shores of our native country, marked as they are with every variety of coast; and this was right. What is more desirable than that the men of this sea-girt isle should be intimate with those peculiarities which, next to their own indomitable courage and steadiness, by fostering a spirit of adventure, contribute to her supremacy among nations. But is this all? is it enough that they should be acquainted with this, and rest ignorant of other coasts? is it wise that this particular branch of their study should be magnified into a general test, to the entire exclusion of every other? It is to the absurdity of this narrow and unchangeable nature, against which the great force of our objection is urged.

Yet we would earnestly deprecate the charge, that we undervalue this necessary branch of information. A navigator should possess a competent knowledge of the coasts of his native land; but he is not to be limited to this; and a regulation which enacts, as the present one by implication does, that ignorance of every port but those within the jurisdiction of the Trinity Board, will not be an objection to passing, is, to say the least, injudicious. We put a case, of which there are several at this moment. A young gentleman has served his time, and comes home to pass as master or second master. He attends at Tower Hill, and answers fairly, with an exception here and there, to the numerous questions put to him

in an examination of one or two hours' length. He displays a becoming acquaintance with the working of a ship, and a book-learned one with the positions of various lighthouses along the coast, the bearings of sands and rocks, &c. in the Channel. And he is told, after all—"We cannot pass you, your logs do not show that you have ever been in the Channel," and so forth. Yet he knows as much about it as one who has been there, so far as Messrs., the examiners can discover. Here is a hardship, after the exertions he has made and the expense he has been put to; his acquired experience of ports at the stations he has been on, in this case all foreign, his zeal and industry as witnessed by charts and papers transmitted by him to the Admiralty: these, which, more than any thing else, constitute his professional fitness, are held of no account by the examiners. If a candidate passes, it is, putting the seamanship aside, solely because he has a smattering of the Channel; it must be, as in a majority of instances, mere book-knowledge hastily got up; it may be, which is better, real practical knowledge, and the latter depending on a contingency over which he can have no control.

The drift of our objection is concisely this. The test, in any case, is not calculated to discover a candidate's fitness to pass, as regards his knowledge or capabilities, inasmuch as it is confined to a mere *pro forma* examination, upon details for the most part extracted from guides and directions, to the utter exclusion of all, or nearly all, the treasures of personal experience and observation.

We come next to consider the *judges*. And this, to our mind, appears the most curious part of the matter. That a board for judging of the qualifications of naval officers, should be constituted of a body of superannuated masters of merchantmen, does appear rather extraordinary: indeed, some young men, of superior information and refinement, might look on such a test as *infra dignitate*; for who are his examiners? Are they celebrated in their profession? are they men of superior education and talent? or are they men who enjoy some degree of eminence and reputation on account of their professional services to the country? and if they were, we appeal to our naval readers, whether they would be entitled to sit as umpires to decide on who are fit officers for the naval service of Great Britain. But, who in fact are they? Respectable men, who pride themselves upon their attachment to old forms and usages, and the contempt, they sometimes freely express, of the ways of the new school, who have no idea of any thing being done except in one way, and that way is the one to which they have ever been accustomed; never allowing the possibility or even utility of improvement, or the chance of other persons being as wise as themselves. Men perhaps not of narrow minds but of limited information on most subjects, priding themselves on their fancied superiority, in a small way, over their contemporaries of the navy,

of whom they cannot help showing, now and then, a petty jealousy. One would suppose that the supplying efficient navigators to the navy, was intended to be left to the caprice of such a board, and the object was expected to be accomplished by trusting to the prejudices and party-feelings of members of any other service than that of his majesty.

A word more: it is notorious to all the candidates, that it is the safest plan not to appear to know more than the examiners do, and that he who displays more talent and spirit than usual, or who offers to combat their dictum, has a harder trial to go through, and his trips commented on with less indulgence, than he who acknowledges their fitness for their high calling. The business is altogether a farce, serious enough to the rejected, and the last act of which we trust is approaching.

To remedy this, we think that the Trinity Board should be restricted to the examination of chief mates or masters, in *the merchant service;* for whose efficiency, shipowners and the country have at present a very sligh guarantee.* A board of naval officers, distinguished in some way, certainly for an intimate acquaintance with the practice and theory of the profession, should be appointed by the Admiralty, to sit there, or at the Trinity House, no matter where. They should consist of a suitable number of Lieutenants and Masters, under the Hydrographer, as president for the examination of candidates for Masters and Second Masters in the navy. We do not see why masters also should not be included, instead of sending them to Portsmouth. The inquiry should be conducted with a closer reference to the candidate's actual experience, than heretofore. For this, he should be tried by the stations he has been on, with which, it is to be presumed, one or more of the examiners is acquainted. If he has been in the Channel, he will be examined on it, of course; or, if it is held of such relative importance as to be thought desirable to be made a prominent subject in the examination of every one appearing before them, be it so; there is no harm in that, though, generally speaking, it must be so much of the Channel-guide learnt by heart. All we object to is, the absurdity of making this scrap of task-work the whole and sole test, to the exclusion of that which ought mainly to form the real test.

The candidate should be expected to show, with his logs and usual certificates, a more tangible certification, in the shape of a journal, containing the result of personal observations wherever he has been, with the remarks suggested by them, &c., with as many plans and charts as he can produce. These would furnish means of correcting guides and offer materials for composing new ones; and, in all cases, it would be but justice to attach the name of the informant. J. A. S.

* We have heard that they are not exempted; we should be glad to be assured of this.

THE TIDES.

CAPTAIN KOTZEBUE, in his second voyage of discovery, says, that the ebb and flow of the tide in Matavai bay, Taheiti, differs entirely from the ordinary rules, and appears wholly uninfluenced by the moon, to which it is every where else subject. The rise and fall is very inconsiderable. Every noon the whole year round, at the moment the sun touches the meridian, the water is highest, and falls with the sinking sun till midnight. This phenomenon serves the place of clocks to the inhabitants.

Has this singularity been observed among any of the neighbouring groups?

Don Juan de Castro, the celebrated naval captain of Portugal, has observed, that at Soootro island, on the coast of Arabia, the tides are quite contrary to those of the opposite shore of India, being flood when the moon rises in the horizon, and as she ascends the tide of ebb begins; and it is dead low-water when she comes to the meridian of the island; after which, as she descends, the waters begin to flow, and when set, it is full sea.

At an island in 19° N. in the Arabian Gulf, or Red Sea, near Shaback, the tides follow the same law as stated above, and do not rise more than half a yard. At Swakem (the Aspi of Ptolemy) it is also high-water as the moon rises, and is again high-water when she sets, and low-water when she is on the meridian; its rise does not exceed a quarter of a yard.

Don Juan states, that, about seven or eight leagues northward of Swakem, the tide was found at full two hours after the moon had passed the meridian, and it was low-water at two hours after she set. The rise is stated at *twenty-two cubits*, but the annotator, with reason, supposes *twenty-two inches* are meant.

It appears that at Van Diemen's Land there is but one tide of flood in the twenty-four hours.*

And, what appears still more singular, is, that in the Strait of Euripus, which separates Negropont from the continent, the tides, during the first eight days of the moon, as well as from the fourteenth to the twentieth day, and for the last three days, ebb and flow regularly four times in twenty-four hours; while, during each of the other days, they ebb and flow with great force from eleven to fourteen times, though the difference of elevation never exceeds two feet.†

The effects of the tidal waters from local causes, in different parts of the world, would form an interesting paper, and would be serviceable to the navigator, especially, if, with the descriptions, judicious remarks as to the probable causes be blended; for it is

* Horsburgh. † Tuckey.

extremely curious to observe the irregular effect produced when waters of the ocean are divided by merely a narrow isthmus.

PEDRO.

We have a variation chart, and also a current chart; why not a tide chart?*

REASONS FOR HAULING-UP. *By Lawrence Luff.*

> " Down with the helm, the skipper cried,
> The tide runs like a bore,
> If we don't go about at once,
> We'll run her bump on shore." *Old Song.*

I WAS amus'd, my good friend, at the surprise you manifested, when in lately riding through our village, you espied me in my gardening costume, training a vine along the trellis of a summer-house. Under what different circumstances we had met before! Sometimes, " in war on the ocean;" and, afterwards, carrying on the war briskly on shore, in foreign climates, and our sea-port towns at home. As you had not time to hear, by word of mouth, the motives which determin'd me to rusticate, and made me promise to reveal them, I now sit down to redeem my pledge.

When we had done cruizing on " the deep, deep sea," and at the peace were paid round off, on going to the great town, I enter'd on its pleasures with an ardour proportioned to the privations under which I had laboured, during a course of servitude not only long but hard. With the usual improvidence of a young sailor, I kept boguing away large, at no small rate, so that the outgoing expenditure bore no proportion to my income. In short, my ways were not adapted to my means. I had for months past kept so bad a reckoning, that the bark would have been high and dry ere long, had I not put the helm a lee, and stood upon the other tack. The person who first did me the favour to point out the folly of my goings on, was Mr. Abel Keen, my kinsman; a close shaver, fond of puns; and those were often bitterly ironical. Having found out that he carried far too many guns for such small craft as I, though very much amus'd by his shrewd conversation, I but seldom ventur'd on a tête a tête with the old humourist. One morning that he came up unexpectedly, he found me in the act of drawing at my lodgings. I happened to be trying a pair of compasses for the purpose of striking a circle, but the legs prov'd much too short to give my

* Our correspondent Pedro cannot have seen Professor Whewell's Chart of Co-tidal Lines, which appeared lately in the Philosophical Transactions. We may hereafter draw up a chart of this nature for our readers, when the new features which the learned Professor is adding to it shall have been completed.—ED. N.M.

round the requisite diameter. So, laying them aside, I said I must procure another instrument, for this wont compass my design.

What, are you really aware, man, of that fact?

Could I, Mr. Keen, be otherwise than convinc'd of a truth self-evident?

I am inclin'd to think you might; nay, that you are, friend Lawrence.

How so?

Why, you appear trying to compass an equally impossible design, to that of making yon turnspit-legg'd thing do the work of a greyhound.

What can you possibly be driving at? bar metaphors, good Sir, do pray speak plain.

Well then, I will, for peradventure, speaking without reserve may prove of use to you.

What can you mean?

Why, that with your limited means you are aiming at things beyond your reach; cannot you perceive that the circle in which you are trying to move, requires many thousands of pounds to work the pendulum, and you have only a few hundreds? Young man, you seem infatuated. Say you have something more than bare half-pay; do you on that account suppose yourself as rich as Crœsus the Lydian, or Rothschild the Hebrew, who means to buy Jerusalem for a money change, and Palestine for a cabbage garden?

My dear Sir, this is—

Lawrence, sit quiet till I have had my say, I have not much to add. You have been taught arithmetic, and ought to know something about figures. Well, if you figure away in a cabriolet so much, what a fine figure you will cut anon, my blade! The fact is, you will get into a *fleet*, where I lament to think so good a fellow as a British sailor ever should be found! We men of business, Lawrence, think it is a capital mistake to break in upon a capital, save it can be safely vested in some lucrative adventure. Now, of such matters you appear to take no thought: well, if you are resolv'd to get rid of your capital, you cannot pursue a more capital plan than that of staying in the British capital; dine at the British —— every day, my boy, with all the roaring that you can pick up in your walks in Bond Street: you'll soon boys be then in *bonds* yourself.

Sir, I must interrupt you; I have no wish to dissipate the principal of my fortune, and don't intend to do so.

Good; I am glad to hear it: it follows then, of course, that you will change your present course, clap on a drag, and not keep dragging out your purse so constantly. Though perhaps you think the interest of your capital enough to let you go your

length a little longer. Come, take that slate, and calculate what you can do with your revenue?

No, Mr. Keen, I need not take that trouble; you have fully convinc'd me that I must retrench, and that too in a good-natur'd manner, instead of chastening me with that asperity of which you are so capable.

Well, then, as you are not offended at my interference, promise me to forthwith settle all your debts, and take up your abode in some place distant from this vortex of temptation. Leave London; I'll give you three days, or a week, to fix on your locale; I'll help you to wind up your affairs; then see you safe into, or upon, the vehicle destined to rattle off with you to some cheap country.

When Mr. Keen departed, instead of going in pursuit of gaiety in Regency-street, I took a grave walk along the north bank of the Serpentine, to ruminate on the past conversation. Instead of dining at a tavern where the soup basins of silver foretold that gold would be required to discharge the reckoning, I bore up for a house where officers on half-pay, of the land and naval service, met at a daily ordinary. This was before the institution of our present splendid clubs, where so much luxury can now be had at such small cost. After dinner, having stated my intention to leave London, the idea was completely scouted. Where can a man live cheaper than in town? cried some: Where else is life worth having? added others. Not having cherished such a degree of intimacy with these gentlemen as to authorize my making an exposè of my circumstances, I suffered their remarks to pass unheeded.

The following day I had the case to argue stoutly with a worthy fellow for whom I entertained sentiments of friendship which were reciprocal. He oppos'd my plan, simply, he said, upon a principle of good economy; vowing there was no place in which a bachelor could live so cheaply as in London. Thus it, no doubt, appear'd to Frederick, as well it might; he had a host of rich relations, with plenty of genteel acquaintances, all anxious for his company, and glad to entertain him; he was well read, clever, and accomplish'd, having a handsome person and a pretty income, with the assurance of being soon promoted: no wonder he found London so delightful, and shuddered at the bare idea of residing in the country.

There was still another person who undertook to ridicule my notion of retirement, under the assurance of my finding such a scheme impracticable. He once had tried banishment from all that is cheering, recreative, and delightful, to mope and stagnate in a village, where he remain'd five weeks! and then came back to town, in order not to die of chagrin and ennui. This account by no means shook my resolution, for I knew the character and habits of the man; a dissolute, unintellectual being, who lounged

about all day, or rather afternoon, when he went grinding down his boot-heels through the streets for hours, taking no rest, (save when he took a chair beside the marker at a billiard table,) and who subsequently ran his half-price round at minor theatres; then, as a consummation of his grov'ling joys, and to give the *coup de grace* to murder'd time, finish'd the sacrifice in a cigar divan or a cider cellar! What influence could the 'councils or opinions of an animal like this have to unsettle my now fix'd opinions? I only answer'd his remonstrance with a smile, and, steady to my purpose, took the earliest opportunity to wind up my affairs. Assisted by my man-of-business friend, old Abel Keen, who put my money out to interest advantageously, I was ready to quit town in five days, and went thence furnish'd with a letter to a clergyman, who was requested to find out some private family where I could board, have separate apartments, and permission to amuse myself by working in the garden. The reason why I stipulated for this last condition was the taste I had imbib'd for horticulture from my earliest youth.

The venerable vicar gave me the kindest possible reception; I could not have been consign'd to a more proper person; he was an enthusiastic admirer of sailors, declaring, as an Englishman, that he should ever have a grateful sense of our services, which under providence had not only upheld the glory of the country, but proved its safeguard through a time of trials perilous almost beyond example. The hospitable Doctor would not hear of my returning to the inn, inviting me to be his guest until he found out an eligible family where I might get domesticated. I would have declin'd had I been suffered, but he vanquished my resistance in a manner which I thought peculiarly delicate. If I departed from his roof, he said, I should deprive him of the only opportunity which had occurred of discharging a debt of obligation due to my kinsman, Mr. Keen, who had often play'd the part of a hospitable landlord to a son of his, when business carried him to London. Thus urged, I yielded, and continued some days at the vicarage, during which period I had ample opportunity to appreciate the admirable character not only of my host, but of his lady and her charming family. L. L.

CHANNEL THROUGH LOWESTOFT SOUTH ROADS.

Trinity-House, London, 10th June, 1836.

PURSUANT to the notice of the 13th ult., the Stanford Light Vessel has been removed from her former position, and is now moored at the North end of the Newcome Sand, in a situation to lead vessels up from Yarmouth Roads, and to mark the eastern side of the northern entrance of the channel through Lowestoft South Roads. A *black* Beacon Buoy has been laid at the South

end of the Newcome Sand, the inner, or western edge of which, is further marked by three other *black* Buoys.

All vessels when using this channel in the day-time, are therefore to pass to the westward of the floating light-vessel, and of all the *black* buoys on the Newcome Sand, and to the south-eastward of the two *white* buoys which are on the inner shoal off Lowestoft.

In the night-time, vessels from the northward may steer up from Yarmouth Roads for the light-vessel, and passing near to, and to the north-west of her, steer in S.W. by W. ½ W., which will take them in the fair way between Lowestoft Inner Shoal and the Newcome Sand, until the low light at Lowestoft bears N. E. by N.; from thence steering S.W. by S. till Pakefield light bears N.W., they may run out S.E. to sea between the Barnard and Newcome Shoals. The opposite courses are to be attended to when entering and passing through this channel, from the southward.

All the Buoys in the Stanford Channel have been taken away, and that channel is abandoned *as unsafe* for vessels to navigate therein.

The following are the Marks and Compass Bearings taken at the Floating Light-vessel, and the *black* Buoys before mentioned, viz.:—

Stanford Light-vessel, lying in 3¾ fathoms low-water spring-tides.

Corton Church Tower in line with Lowestoft Ness Point	N. ½ W.
North Inner Shoal Buoy	N.W. ¾ W.
Pakefield Lighthouse	S.W. ¾ W.
North Newcome Buoy	S.W. ¼ W.

Black Buoy, marked N. Newcome, lying in 3¾ fathoms.

Lowestoft Church Spire in line with the N.E. end of Lowestoft Preventive Station House	N.N.W. ¼ W.
North Inner Shoal Buoy	N. by E.
Lowestoft Low Lighthouse	N. by W.
N.W. Newcome Buoy	S.W. ½ W.

Black Buoy, marked N.W. Newcome, lying in 4¼ fathoms.

Lowestoft Church Spire in line with the N.E. end of the Harbour Master's House	N. ¼ W.
Pakefield Lighthouse	S.W. by W. ¾ W.
Lowestoft Low Lighthouse	N. by E. ¼ E.
S.W. Newcome Buoy	S.S.W. ¼ W.

Black Buoy, marked S.W. Newcome, lying in 4 fathoms.

Lowestoft Windmill, in line with the centre of the Harbour Master's House	N. ¼ E.
Pakefield Lighthouse	W. ¾ S.
South Newcome Buoy	S. by E.

Black Buoy, with Staff and Ball, marked S. Newcome, lying in 3¼ fathoms.

Pakefield Windmill, in line with the N.E. end of a Barn on the Cliff	N.W. by N.
Pakefield Lighthouse	W. by N.
S. E. Holm Buoy	N.E. by E. ½ E.
N.E. Barnard	S. by W. ½ W.

And an additional Black Buoy has been placed in 6¼ fathoms on the S.E. part of the Holm Sand, midway between the South Newcome and North-East Holm Buoys, with the following Marks and Compass Bearings, viz.:—

Lowestoft Church Spire, in line with the Low Lighthouse	N.W. by N.
Pakefield Church Tower, its length open South of Pakefield Windmill	W. by N.
N.E. Holm Buoy	N.E. by E.

By Order, J. HERBERT, Secretary.

A "LONG-SHORE" JOB FOR THE CAPSTAN.

"POPE SIXTUS the fifth had a wish to remove, and erect in the place of St. Peter's at Rome, in an entire state, the only obelisk remaining out of 600 which ornamented the antique circus of Nero. Other popes had felt the same inclination; but the difficulty of the enterprise prevented its being carried into execution.

This obelisk or column is composed of a red granite, which the old Romans called Thebaic marble, because it was cut out of a quarry near Thebes in Egypt, from whence it was transported to Rome in the time of Cæsar. Of the many columns now in that city, this is the only one which remains whole; it is without hieroglyphics. Its dimensions are, in height, one hundred and seven spans and a half, twelve spans in breadth, and eight at the summit. One cubic foot of this stone weighs 86lbs, so that the entire of this column must be calculated as being little less than a million of pounds.

How the Ægyptians and Romans managed to move such enormous masses of stone was not to be discovered by any records then remaining; and a similar undertaking not having been attempted for so many ages, the idea of Sixtus was view'd as a novel enterprise.

To carry into effect so vast a project, mathematicians, engineers, and learned men were summon'd from all parts to attend: in consequence of which, there were assembled in one congress, held in the presence of the pope, more than five hundred persons, each

bringing forward his own plan, some in drawings, some in models, some in writing, and some explaining their ideas verbally. After vast consideration and long discussions, the invention of Fontana was preferr'd, and this architect set about the undertaking with the greatest expedition. He caus'd an excavation to be made in the place sixty spans square, and thirty-three in depth, when, finding the soil watery and chalky, he consolidated it by means of strong stakes and solid brick-work. The sole weight of the iron rail-work for this column, amounted to forty thousand pounds, and was manufactur'd partly in Rome, Ronciglione, and Subbiaco.

In the mean time there were brought from the forests of Neptune, logs of wood so enormous, that every one was drawn by seven pair of buffaloes. From Terracina they brought huge elm planks for sheathing, and from Santa Severa Funi D'Elie as halsers for the capstans; also stakes of elm, and other boards. To move the obelisk, Fontana prepared a castle of wood, he widened the place, and cut through the walls of the Sacristy in order there to establish his capstans; and that the ground should not give way, by the immensity of pressure to which it would be subjected, as he found the soil of a loose texture, he, by way of consolidating it, laid down two rows of double beams dispos'd cross wise. The total weight of the obelisk, thus surrounded, amounted to about one million and a half of pounds.

A preparation so novel and extraordinary excited the ready curiosity of the Romans at once, and even that of strangers also, who hurried in from distant countries, anxious to see what effects would be produced by such a forest of beams interwoven with cordage, with all the capstans, blocks, and levers composing such an apparatus. Sixtus, to obviate all confusion, decreed in one of his edicts—that on the day of commencing operations, none except the artificers should presume, under pain of death, to enter the enclosure; that no one should make any noises, or speak, or even cough out loud.

Matters being thus arranged on that day, namely the 30th of April, 1586, the first to enter the palisades was the sheriff with his bailiffs; and the executioner erected there his gallows, not for mere ceremony, but to be all ready for service when required. Fontana went to take the Pope's benediction, who, while blessing, warn'd him to mind what he was about, because, should he commit any mistake so as to miscarry, it would cost him his life. Fontana, alarm'd at this intelligence, secretly gave orders that horses might be kept ready for him at all the gates, that if matters went wrong he might be able to escape from the wrath of the pope. At dawn, two masses of the Holy Spirit were celebrated: all the operatives took the sacrament, and then, having receiv'd a benediction from the pope, before the rising of the sun all entered the enclosure. So immense was the concourse of spectators, that nearly all the

roofs of the houses were cover'd with people; all the streets crowded; all the nobility, prelates, and cardinals were placed between the Swiss guards and the light horse. All were wrapp'd in most profound attention, anxiously watching the operations, while the dread inspir'd by the menacing gallows, constrained all present to observe the strictest silence.

The architect gave orders that at the sound of a trumpet every one should commence working, and suspend their labours when a bell attached to the wooden castle should be rung. The number of operatives exceeded nine hundred, and the horses amounted to seventy-five. The trumpet was sounded, and, in one instant, men, horses, capstans, levers, pulleys, cranes, &c. were all in action. The earth trembled, the castle creaked, all the wood works were compress'd together by the enormousness of the weight and the column, which seem'd inclined two spans towards the chair of St. Peter's, was erected to a perpendicular. The commencemen having so well succeeded, the bell sounded to suspend the labour. After this, in twelve movements, the column was lifted about three spans above the ground, so that there was a sufficiency of space for placing the dray under it. In consequence of an event so prosperous, the castle of St. Angelo saluted with the whole of its artillery, and the joy was universal.

On the 10th of September, after the accustom'd solemnities had been premis'd, the last operation of placing the column on its pedestal was set about, when eight hundred men, and this time one hundred and fifty horses, were made use of. Fifty two-heaves rais'd up the column, and, by sun set, it rested fairly imbedded on its pedestal. The castle fired its guns, and the workmen, intoxicated with delight, took Fontana, elevated him upon their shoulders, and to the sound of drums and trumpets, the din of which was drowned in their triumphant shouts, bore him to his house through a crowd of people, who invoked his name with enthusiasm as he passed along, and saluted him with reiterated bursts of their applause.—"*Memorie degli Architetti Antichi e Moderni di Francesco Milizia*"

M.J.D.

To the Editor of the Nautical Magazine.

East India House, the 15th June, 1836.

Sir,—The Court of Directors of the East India Company having received from the Government of Bengal a notification, dated the 27th October last, of the probable discontinuance of the light at Point Palmyras during the south-west monsoon of the present year, I am commanded to transmit you a copy thereof, for the

purpose of insertion in the Nautical Magazine, for the information of mariners.

I am, Sir, your most obedient humble servant,
JAMES MELVILL.

Notification of the probable Discontinuance of the Light at Point Palmyras, during the South-West Monsoon of 1836.

The encroachment of the sea on the island of Mypurrah (commonly called Point Palmyras) rendering it highly probable that the light cannot be continued during the next south-west monsoon; notice is hereby given, that, should such discontinuance take place, the senior pilot at the station will burn a Blue Light, and immediately after fire a Rocket every half-hour during the night, commencing at 7 P.M. and ending at 5 A.M.

2. The vessel on board of which such senior pilot may be, will be instructed to take up a position, the point bearing W. by N., distant eighteen miles, and in eighteen or twenty fathoms water, and to keep in that position during the night as near as possible.

3. The vessel on board of which the next-turn pilot may be, will be directed to burn a maroon every half-hour, i.e. one quarter of an hour after the burning of the blue light and firing of the rocket; and vessels wanting a pilot are required to make for the vessel so burning the maroon, if they can do so without inconvenience, as referred to in the notification issued from this office, under date 1st July last.

4. The simultaneously firing a rocket with the burning of a blue light, is ordered, to distinguish the pilot's station off the point, from the floating light-vessel at the entrance of the eastern channel. It is intended at the close of the present monsoon to cause a survey to be held on the state of the island, when a definite notice will be issued.

By order of the Marine Board,
(Signed) CHARLES B. GREENLAW, Secretary.

Fort William, the 27th October, 1835.

TEMPORARY RUDDERS.

To the Editor of the Nautical Magazine.

SIR,—Finding in your valuable publication several plans of substitutes for a rudder, on a ship losing her's at sea, and seeing they all are attended with much expense, and a long time must elapse before she can be got under control, I beg leave to submit one that I have constructed.

The ship when in dock is to be fitted with four strong copper hooks, (two being fixed on each counter,) the size of the hook

being only large enough to admit a strong ring. These hooks are placed on the vessel's bottom, on a parallel* line with the keel, and as much under water as the build of the ship will allow. They are to be bolted on the ship's bottom by means of a plate, above and below, in proportion to the size of the vessel. To the outer part of these hooks a chain is fixed, to answer as a conductor, long enough to reach up the vessel's sides to the quarter-deck. The chains below the bends and the hooks are let into sheathing boards, or, in other words, the boards are brought on thick enough to cover the outward part of the hooks; the remaining chain is stopped up the vessel's sides by means of small hooks, and coiled away in small boxes under the main and mizen chains. The vessel is supplied with two pieces of strong elm plank, about nine feet by three and three inches thick; having on one edge two strong plated ring-bolts, about one-fourth from each end, and on the other edge one in the middle. These planks are kept on deck when not wanted, on the booms under the boats. The ship having lost her rudder, the men have nothing more to do than to bring these two pieces of plank on each side the quarter-deck, pass the chains through the ring-bolts, taking care to make them well fast to the vessel's side, and to bend a strong rope to each single ring-bolt, on the edge of the plank, before launcing it overboard, and it will by the velocity of the vessel immediately find its way to the hooks; a small spar run out of each quarter-port, with a snatch-block secured to the end of it, or a block fixed on the after-end of the main chains, will serve for the rope to run through, which, when hauled on, will immediately make the rudder act.

I have no hesitation in saying, that a vessel in the heaviest gale can be got under control in a few minutes, without endangering the life of any one on board; and the expense is but small. There is a model in the Adelaide Gallery, which can be seen at any time. I have been many years at sea, and am confident it will answer every purpose, having made a trial of it myself.

Wishing you every success with your valuable publication,

I am, Sir, your most obedient servant,

THOMAS CAVE.

31, *Rodney Street, Pentonville.*

A reference to the plate of temporary rudders in our number 51, for May, will enable our readers to follow Mr. Cave's description. Taking the figure No. 3, of that plate, we consider that the upper hook would be nearly midway between the letter *f*, and the water in the direction of the guy there shewn, and the lower one in a line at about right angles to the guy, and beneath the water-line. To these Mr. Cave proposes to attach his rudder-boards.

* Mr. Cave surely means that the board should be placed at an angle with the line of the keel, as represented in his drawing.

These appendages to a ship's bottom are somewhat new to us, as they may likewise be to some of our readers; but they appear, as substitutes for a rudder, to be well worth attention. They would no doubt be effective, from their favourable position, and they might stand as little chance of being washed away as any other temporary rudder; but great care would be required in tricing them up close to the ship's side, when she is likely to gather stern-way. The appearance of the hooks in the counter, as described by Mr. Cave, would perhaps be an eyesore to the executive officers of our men-of-war; but when it is considered that one of them would be under water, and that they do away with that great objection to which all the substitutes for rudders that we have laid before our readers are liable, namely, the braces passing along the ship's bottom, either of rope or chain, there is a decided advantage gained in them, where efficiency on the most occasions is wanted.

Nautical Notices. South-West Coast of Mexico.

In former numbers of this work, we have deplored the scantiness of our information for navigators on the southern coast of central America, which however will be remedied by the operations of Captain Beechey before long. In the mean time, the following notes will be useful to navigators, and will in some measure serve to confirm our former remarks:—

Brig Lima bound to Istapa.

In consequence of strong currents setting to the westward, it took us from the 20th June to the 2d July, before we got up to Point Cosiguina. We generally had one heavy squall from the eastward, with tremendous thunder, and lightning, and rain once in twenty-four hours, about sunset. They did not last long; but, in the fury of the first rush, a heavy short sea got up, which rendered the light winds for the rest of the day almost useless.

In this season of the year, from May to the beginning of Nov., a ship ought to make the land about sixty miles to the northward of Cape Blanco, keeping the coast at a moderate distance. I am satisfied that better weather will be found close in, than 90 miles off; besides, the currents run at the rate of from thirty to forty minutes a day, sweeping you away to the westward. Close in with the Balsam Coast, I found the currents variable, with regular soundings. At a distance of twenty miles we had thirty fathoms, which decreased gradually as we approached the shore. From Point Remedios to Point Condodillo the soundings are mud; very strong holding-ground. Off Sapeton the land is high and bluff, down to the sea. A little to the eastward of that, about the

Guaymoca of San Salvador, the coast runs low for a considerable distance in. I would recommend all persons proceeding to the eastward, to anchor in about ten fathoms, on the appearance of a squall rising in the east; if you keep under way, you must stand off, and consequently lose ground. It is very difficult getting inshore again.

In working up the Gulf of Fonseca, (commonly called here Conchagua,) I kept to the westward of all the islands, and all along the western shore found the passage very good, with plenty of water, seldom less than five fathoms. When drawing abreast of Conchagua, you must not stretch off the west shore, as an extensive flat spreads to the north-eastward.

We lay three days at Conchagua, and had only one squall, which was rather heavy, for an hour, with heavy rain, thunder, and terrific lightning.

We left Conchagua on the 5th of July. Whilst rounding Point Condodillo, pretty close, I suddenly got from nine to five fathoms rocky ground; tacked immediately, and had nine fathoms again. Off the pitch of that point I saw deep rollers, extending one mile and a half out.

Proceeding on my passage towards Istapa, and finding the mountains of San Miguel and San Salvador* laid down perfectly correct in the chart, I placed the utmost confidence in it, and boldly pushed to the westward, until the high mountain Guatemala "Single-peak" bore N.E. ½ N., as it does in the chart from the port of Istapa, giving the latitude of the place 14° 3′ N., and longitude 91° 10′ W. This I found quite incorrect.

Istapa roads or anchorage bears S. by E. ½ E. from the single-peaked mountain of Guatemala; the entrance of the river lies three miles to the westward of the anchorage. The difficulty and danger which is met with in passing the bar, has caused the landing of goods to be effected upon the open beach, near the lagoon which formed the old entrance. A flag, blue, white and blue, horizontal, is hoisted when a vessel makes her appearance, and a gun is fired. Some English negroes are residing at this place. We found a commandant, a collector of customs, and about half a dozen soldiers; a large boats' shed, and eight huts—all these miserably furnished, and the place a most wretched one.

Ships proceeding from England upon a voyage to the western coast of central America, would do well to lay in a good supply of salt pork, flour, and pease, fish-hooks, &c. and be well stored with canvass and rope, for the whole trip. A nine-inch tow-line of 140 fathoms, with a kedge-anchor of 2 cwt., is actually requisite to lay down outside the surf, which at low-water breaks some distance off; the other end is made fast to a post on shore. A good tackle likewise is wanted, to secure the boat to the beach,

* San Vincente.

immediately she takes the ground, or the back-water will throw her off, and she would soon fill. The boat which we took out was much too heavy and low at each end. It is no use coppering boats for this part of the coast. Vessels proceeding to Conchagua, or San Salvador, should have their boats coppered.

We lay at anchor from the 13th July to the 20th August, 1835, in fifteen fathoms water, the flagstaff bearing N.N.W., without experiencing any bad weather, except some few heavy squalls of thunder, lightning, and rain. A heavy swell was rolling generally on the beach, but the brig lay perfectly easy at her moorings. The low land extends a considerable distance into the country; and as you ascend it, the climate suddenly alters, and you pass a country capable of any thing.

Those who are fond of contemplating the bold scenery which nature has left for man to improve, would do well to visit so rich a country. The view of Guatemala is worth the journey. One hundred English agriculturists, with a small supply, would make the plains of Guatemala laugh and sing.* Sheep are wanted; turkeys, ducks, and fowls, are in abundance; but the expense is so great of exporting any thing to the ship, that it is a rare occurrence to see them on board. Bullocks are twenty-five dollars each at Istapa, and you must wait four days ere they can be got. The natives of the place do not even wish to put themselves out of the way, to procure you any articles for money!

The foregoing remarks are in a measure confined to the coast, but as ships are not every day rounding the promontory of Cape Horn from Europe, I shall give a short outline of my passage.

Leaving Scilly Islands on the 2d of February, we proceeded quietly down to the southward, and, as I always here passed inside of the Cape de Verde Islands at all seasons, I think it right to protest against the bugbear of that space being consigned to perpetual calms. I never experienced any thing like a calm for six passages, running in the meridian of 21° 30′ to 21° west; keeping a good look-out, the passage appears to me quite clear. Should the Bonetta Rocks, or any danger, exist, I humbly think our Government are much to blame; so many of our ships-of-war being on foreign stations, and officers of the navy would jump at the employment. This passage would become generally used, and save nearly two days down to the equator. We had a very light south-east trade-wind; did not get off the Rio Plata before the 2d of April; passed inside of the Falkland Islands on the 14th; made Staten Land on the evening of the 15th; passed to the eastward of it at 20′ distance. Had strong eddies, but not much affected by them. Had some snow squalls on the 16th. On the 19th made Diego Ramirez Island. Then stood to the southward, with westerly winds. This is strongly recommended; but if I

* So says the worthy captain of the Lima. We would not vouch for it as fact.

commanded a ship that was adapted for beating, and well manned, it is not the route which I should take again. Inshore a strong current sets to the W.N.W., and although it is attended with great trouble, tacking and veering in a stormy night, yet you are almost sure of keeping clear of ice, which keeps you in a state of the greatest excitement. When to the southward of 60°, or even in the parallel, I experienced a strong current to the eastward for three days in 59° south. We arrived in the latitude of Valparaiso on the 19th May, and were mostly about 200′ off the coast, on both sides of south America, in the passage.

On the eastern coast the winds spring up strong from the south; got to the east, and then north, moderating all the time; and on the coast of Chiloe we found the first onset was from the north, drawing to the westward, with squally weather. We saw no ice off the Horn; had not much thick weather, and only one heavy sudden gale from the south-eastward, in lat. 60° 30′ S., 79° W. Our wheel-ropes broke in the height of it, occasioned by a tremendous sea rolling up on the larboard quarter. We thank God! got well over it. I recommend the latter part of April, and the beginning of May, as the best time to round this point of land. Off the Horn I found the barometer of great use; just previous to the hard gale from the south-eastward on the 4th May, it fell to 28·55′, and kept rising during the whole of it. The same occurred on the 1st of May, but the storm was not so severe. Wind westerly; barometer 28·60; rose, and fell again to 28·29. 3d May it blew hard S.S.E. and S.S.W. We never experienced any of those long seas so much boasted of, but short, high, agitated ones: wind always upon the shift.

I place the Cocos Island in lat. 5° 21′ N. and long. 86° 58′ W. Experienced strong currents to the south-eastward on the 11th, 12th, and 13th June, whilst passing and in sight of the island. The port of Istapa I lay down in lat. 13° 56′ 30″ north, long. 90° 37′ 30″ west; variation of compass, 8° 40′ east. Guatemala single-peaked mountain N. by W. ½ W.; high-water, full and change, 2 o'clock, and rise of tide ten feet. The depth of water is fifteen fathoms at one mile and a half from this part of the coast. The thermometer generally ranges at 86° during the day; cool mornings and evenings. Land and sea breezes have prevailed; latterly the sea breeze has blown more from south-westward, and the currents within the last two days begin to bend more towards the east.

THOMAS FEWSON,
Master, Brig Lima, of London.

Istapa Roads, 20th Aug. 1835.

[While on this subject, it may not be amiss to add to the foregoing, the remarks of that experienced navigator and officer, Captain Basil Hall, R.N, on the winds and weather, and navigation of the south-west coast of Mexico:—]

On the south-west coast of Mexico, the fair season, or what is called the summer, though the latitude be north, is from December to May inclusive. During this interval alone it is advisable to navigate the coast, for, in the winter, from June to November inclusive, every part of it is liable to hard gales, tornadoes, or heavy squalls, to calms, to constant deluges of rain, and the most dangerous lightning, added to which, almost all parts of the coast are, at this time, so unhealthy as to be abandoned by the inhabitants. At the eastern end of this range of coast, about Panama, the winter sets in earlier than at San Blas, which lies at the western end. Rains and sickness are looked for early in March at Panama; but at San Blas rain seldom falls before the 15th of June; sometimes, however, it begins on the 1st of June, as we experienced. Of the intermediate coast I have no exact information, except that December, January, and February are fine months everywhere; and that, with respect to the range between Acapulco to Panama, the months of March, April, and half of May, are also fine; at all other times the coast navigation may be generally described as dangerous, and on every account to be avoided.

From December to May inclusive, the prevalent winds between Panama and Cape Blanco de Nicoya are N.W. and northerly. From thence to Realejo and Sonsonate, N.E. and easterly. At this season, off the Gulfs of Papagayo and Tecoantepec there blow hard gales, the first being generally N.E., and the latter north. These, if not too strong, as they sometimes are, greatly accelerate the passages to the westward; they last for several days together, with a clear sky overhead, and a dense red haze near the horizon. We experienced both in the Conway in February, 1822. The first, which was off Papagayo on the 12th, carried us two hundred and thirty miles to the W.N.W.; but the gale we met on crossing the Gulf of Tecoantepec on the 24th, 25th, and 26th, was so hard that we could shew no sail, and were drifted off to the S.S.W. more than a hundred miles. A ship ought to be well prepared on these occasions, for the gale is not only severe, but the sea, which rises quickly, is uncommonly high and short, so as to strain a ship exceedingly.

From Acapulco to San Blas, what are called land and sea breezes blow; but as far as my experience goes, during the whole of March, they scarcely deserve that name. They are described as blowing from N.W. and W. during the day, and from N.E. at night; whence it might be inferred, that a shift of wind, amounting to eight points, takes place between the day and night breezes. But, during the whole distance between Acapulco and San Blas, together with about a hundred miles east of Acapulco, which we worked along, hank for hank, we never found, or very rarely, that a greater shift could be reckoned on than four points. With this,

however, and the greatest diligence, a daily progress of from thirty to fifty miles may be made.

Such being the general state of the winds on this coast, it is necessary to attend to the following directions for making a passage from the eastward.

On leaving Panama for Realejo or Sonsonate, come out direct to the north-westward of the Isla del Rey; keep from twenty to thirty leagues off the shore as far as Cape Blanco de Nicoya; and on this passage advantage must be taken of every shift of wind to get to the north-westward. From Cape Blanco hug the shore, in order to take advantage of the north-easterly winds which prevail close in. If a papagayo (as the strong breeze out of that gulf is called) be met with, the passage to Sonsonate becomes very short.

From Sonsonate to Acapulco, keep at the distance of twenty, or at most thirty leagues from the coast. We met with very strong currents running to the eastward at this part of the passage; but whether by keeping farther in or farther out we should have avoided them, I am unable to say. The above direction is that usually held to be the best by the old coasters.

If, when off the Gulf of Tecoantepec, any of the hard breezes which go by that name should come off, it is advisable, if sail can be carried, to ease the sheets off, and run well to the westward, without seeking to make northing; westing being, at all stages of that passage, by far the most difficult to accomplish. On approaching Acapulco, the shore should be got hold of, and the land and sea breezes turned to account.

This passage in summer is to be made by taking advantage of the difference in direction between the winds in the night and the winds in the day. During some months, the land winds, it is said, come more off the land than at others, and that the sea breezes blow more directly on shore; but in March we seldom found a greater difference than four points; and, to profit essentially by this small change, constant vigilance and activity are indispensable. The sea-breeze sets in, with very little variation as to time, about noon, or a little before, and blows with more or less strength till the evening. It was usually freshest at two o'clock; gradually fell after four; and died away as the sun went down. The land breeze was by no means so regular as to its periods or its force. Sometimes it came off in the first watch, but rarely before midnight, and often not till the morning, and was then generally light and uncertain. The principal point to be attended to in this navigation is, to have the ship so placed at the setting in of the sea breeze, that she shall be able to make use of the whole of it on the larboard tack, before closing too much with the land. If this be accomplished, which a little experience of the periods renders easy, the ship will be near the shore just as the sea breeze has ended, and there she will remain in the best situation to profit by

the land wind when it comes; for it not only comes off earlier to a ship near the coast, but is stronger, and may always be taken advantage of to carry the ship off to the sea breeze station before noon of the next day.*

These are the best directions for navigating on this coast which I have been able to procure: they are drawn from various sources, and, whenever it was possible, modified by personal experience. I am chiefly indebted to Don Manuel Luzurragui, master attendant of Guayaquil, for the information they contain. In his opinion, were it required to make a passage from Panama to San Blas, without touching at any intermediate port, the best way would be to stretch well out, pass to the southward of Cocos Island, and then run with the southerly winds as far west as 96° before hauling up for San Blas, so as to make a fair wind of the westerly breezes which belong to the coast. An experienced old pilot, however, whom I met at Panama, disapproved of this, and said, the best distance was fifteen or twenty leagues all the way. In the winter months these passages are very unpleasant, and it is indispensable that the whole navigation be much further off shore, excepting only between Acapulco and San Blas, when a distance of ten to twelve leagues will be sufficient.

The return passages from the west are always much easier. In the period called here the summer, from December to May, a distance of thirty to fifty leagues ensures a fair wind all the way. In winter, it is advisable to keep still further off, say a hundred leagues, to avoid the calms, and the incessant rains, squalls, and lightnings, which everywhere prevail on the coast at this season. Don Manuel Luzurragui advises, during winter, that all ports on this coast should be made to the southward and eastward, as the currents in this time of the year set from that quarter.

If it were required to return direct from San Blas to Lima, a course must be shaped so as to pass between the Island of Cocos and the Galapagos, and to the south-eastward, till the land be made a little to the southward of the equator, between Cape Lorenzo and Cape St. Helena. From thence work alongshore as far as Point Aguja, in latitude 6° south, after which work due south, on the meridian of that point, as far as 11½° south, and then stretch inshore. If the outer passage were to be attempted from San Blas, it would be necessary to run to 25° or 30° south across the trade, which would be a needless waste of distance and time.

Such general observations as the foregoing, on a navigation still imperfectly known, are perhaps better calculated to be useful to a stranger, than detailed accounts of passages made at particular seasons. For, although the success of a passage will principally depend on the navigator's own vigilance in watching for exceptions to the common rules, and on his skill and activity in profiting by

* See Dampier's account of land and sea breezes.

them, yet he must always be materially aided by a knowledge of the prevalent winds and weather. As many persons, however, attach a certain degree of value to actual observations made on coasts little frequented, although the period in which they may have been made be limited, I have given in the two following notices, a brief abstract of the Conway's passages from Panama to Acapulco, and from Acapulco to San Blas. The original notes from whence they are taken are too minute to interest any person not actually proceeding to that quarter of the world.

(To be concluded.)

NOTICE OF A RECENT DISCOVERY RESPECTING THE TIDES.

By the Rev. W. Whewell, M. A., F. R. S.

The following account is given by Captain Cook in the Philosophical Transactions for 1776, page 447. It refers to the east coast of New Holland in latitude 15° 26′ S.

"About 11 o'clock in the evening of the 10th of June 1770, as we were standing off shore, the ship suddenly struck, and stuck fast on a reef of coral rocks, about six leagues from the land. At this time I judged it was about high-water, and that the tides were taking off, or decreasing, as it was three days past the full moon; two circumstances by no means in our favour. As our efforts to heave her off before the tide fell proved ineffectual, we began to lighten her by throwing overboard our guns, ballast, &c. in hopes of floating her off the next high-water; but, to our great surprise, the tide did not rise high enough to accomplish this by near *two feet*. We had now no hopes but from the tide at midnight, and these only founded on a notion, very general indeed among seamen, but not confirmed by any thing which had yet fallen under my observation, that the night-tide rises higher than the day-tide. We prepared, however, for the event, which exceeded our most sanguine expectations; for about 20 minutes after 10 o'clock, in the evening, which was a full hour before high-water, the ship floated. At this time the heads of rocks, which on the preceding tide were, at least, a foot above water, were wholly covered."—He then proceeds to say, that on getting into Endeavour river, where he stayed, repairing the damage the ship had received, during the recurrences of the spring tides, he satisfied himself that this excess of the evening above the morning tides was a circumstance which uniformly occurred.

The experience of almost every naval man will supply him with similar examples of cases, in which the safety of a ship has depended upon attention to the different height of the two tides of the same day; and in many instances the difference may be much greater than in the one just quoted. It is strange, therefore, that the study of this circumstance in the tides has been neglected, so that at present neither sailors nor men of science know any

more about it than was known in the time of Cook. Indeed, all the statements which are made about this difference are either erroneous, or only accidentally and locally true; as, for example, when it is said that the morning tide is greater than the evening tide at one season, and at another the evening greater than the morning tide.

Recently the laws of this difference have been investigated for Liverpool by Mr. Lubbock, and also by Mr. Bywater; and Mr. Bunt is employed in determining them for Bristol; so that the tide-tables for these places will be improved by its insertion, for the future. The connection of the difference as it appears in remote parts of the world, has hitherto been entirely unknown; but it is in some degree disclosed by the extensive series of tide-observations made for 20 days in June 1835, by the maritime nations of Europe and the United States of America. These observations were made at a chain of stations, extending from the mouths of the Mississippi to Nova Scotia, and from the straits of Gibraltar to the North Cape of Norway; and amounting in number to 130 in foreign countries, besides above 500 on the shores of the British Isles. The observations thus made have since been undergoing examination and comparison in the Hydrographer's Office at the Admiralty; and among much very curious and important knowledge which they convey, they give a new and unexpected view of the progress of the *diurnal inequality*, that is, of that difference of the two tides in the same day, which we have already spoken of.

It appears that this inequality does not take place on the same days on the west and on the east side of the Atlantic. On the shores of the United States it was very considerable from the 9th to the 16th of June, 1835; vanished on the 18th or 19th; and then increased again to the 26th or 27th. But on the coasts of Spain and Portugal it increased from the 9th, (when it was very small,) to the 15th or 16th, when it was greatest; it then decreased and vanished on the 22d, and afterwards again increased.

Now these facts, compared with what we know of the cause of the *diurnal inequality*, give rise to some curious inferences. The difference of the two tides on the same day arises from the moon not being in the equator. The tides which belong to the point exactly under the moon, and to the point exactly opposite to this on the earth's surface, are equal; but when the moon is north of the equator, a place which is in north latitude will receive nearly the central effect of the former of these two tides, while only the skirts of the latter reach it. Thus the *diurnal inequality* depends upon the moon's north or south declination, and ought, upon the theory of equilibrium-tides, to vanish when the moon's declination vanishes.

The moon's declination was 0 on the 19th of June, 1835. It appears therefore that on the coast of North America, the tides

agree with the equilibrium-tides of the very day on which they happen, but that on the western coasts of Europe, the equilibrium-tide of about three days previous best represents the actual tide, so far as the diurnal inequality is concerned; or, stating it otherwise, the diurnal changes of the tidal force of the moon are felt *immediately* on the west coast of the Atlantic, but require *three days* to propagate their effect to the eastern shore of that ocean.

I may add, that so far as researches upon this subject have hitherto enabled us to see, the *gradual* propagation of the effect of the diurnal changes from place to place may be traced further. At Plymouth the time occupied by this propagation is about four days from the corresponding equilibrium-tide; at Bristol and Liverpool, five or six. The investigations which are now in progress, will give further light and greater exactness on this matter.

In the mean time, it is obvious that the subject is one both of great practical importance, and of extensive theoretical bearings. The sailor ought not to be satisfied till the general rules which this inequality follows in every part of the world are known to him; and the mathematician, when these empirical rules are well established, may hope to obtain a complete explanation and calculation of this, as well as of the many other remarkable phenomena of the tides, which have recently been brought to light.

MISCELLANEOUS INTELLIGENCE.

The Arctic Expedition.

Of the various expeditions which have departed from our shores, for the purpose of extending discovery into the arctic regions, none have appeared more likely to achieve the grand object in view, than that which has just sailed under the orders of Captain Back, nor is it possible to contemplate the various acquisitions made to geography, by the several modern voyages of discovery in the vicinity of Baffin's Bay, without feeling more than ordinary interest in the result of that which is now going forward. It is not with respect to the actual possibility of the passage to Bhering's Strait north of America, that our interest is now excited—that is a question which we have considered as settled since the first memorable expedition conducted by Sir Edward Parry; and whenever the north-west passage to China shall be performed by any ship, it may be considered a fortuitous event which the energy and intrepidity of British seamen have shewn to be practicable, under circumstances of weather, &c. favourable to navigation. The object of the present expedition may literally be considered to lie, in defining the north-east extreme of the American continent. Until

the arrival of Captain Back in England, from his land journey in search of Sir John Ross, we were to consider the western boundary of Prince Regent's Inlet as this north-eastern extreme; but no sooner does Captain Back appear, than "the wide, the open sea," is reported some hundreds of miles to the southward and westward of that part of the arctic regions, and also that a tide was running into it from the westward. At page 623 of our last volume, the reader will find some account of the last discovery of Back; and it is for the purpose of tracing the shore of this "open sea," from the mouth of the river Back, to the eastward as far as Melville peninsula, and to the westward as far as Cape Turnagain, that the Terror has departed from England. Were we to hazard an opinion, we should say, that it appears likely that the land called North Somerset by Parry will be found to consist of a series of islands.

The Terror sailed from the Nore on the 16th of June, accompanied by the Rhadamanthus steam-vessel (for the purpose of towing her as far as wind and weather would permit,) and on clearing the Pentland Frith, Captain Back would shape his course for Cape Farewell, and, passing up Hudson Strait, would enter Wager River or Repulse bay as most convenient, and, having secured the ship there, would then proceed to cross the isthmus which separates them from the bottom of Prince Regent's Inlet. Two light boats will be conveyed across this Isthmus, one of which will proceed to explore the coast to the north-east, as far as the Strait of the Fury and Hecla, while the other will go west towards the mouth of the river Back. Thus the southern shore of the Boothian Gulf will be defined, and thereby also the breadth of the Isthmus connected with Melville Peninsula, which separates it from the Atlantic waters.

In the immediate neighbourhood of their proceedings, is the position of the magnetic pole; and the magnetic observations which will be obtained by Captain Back and his officers, will give additional interest to the results of this voyage. The time it may require to be performed in must remain uncertain, as it is more than probable that such discoveries may be made, either of a geographical or other nature, as will induce Captain Back to avail himself of the discretionary power invested in him of wintering in Wager river, in which case his return would be looked for by the end of next summer. He is accompanied by officers who are well qualified to assist him in his arduous enterprise. Lieutenants Smyth and Owen Stanley are officers already well known; the former from his late journey from Lima to Para, and the latter from his surveys in the Mediterranean; and the services of Mr. Saunders, the master, will no doubt be turned to a good account in the numerous scientific pursuits which will occupy the whole party during their interesting voyage.

A court martial was held at Bermuda, the latter end of April, to try Lieut. Arthur Brooking, for the loss of the Pike schooner, on her passage from Kingston to the north part of Jamaica. The court was composed of Captain Sir Thomas Ussher, K.C.H. (President,) Captains Bennett and James Scott, and Commanders Sweeny and Fair, with Thos. Woodman, Esq. Deputy Judge Advocate. It appearing that great neglect in the reckoning of the vessel was the cause of her loss, Lieut. Brooking was sentenced to be dismissed the service; and, in consequence of a leaf or leaves being torn out of the log-book, and great prevarication being evinced in their evidence before the Court, Mr. Mitchell, a mate, was sentenced to be dismissed the service, and to be confined three months in the Marshalsea, and Mr. Stokes, a master's assistant, to be dismissed the service.—*Hants Telegraph.*

A court martial was held at Malta, on the 19th April, to try Lieut. Puddicombe, R.M. and Mr. T. Hancock, midshipman of H.M.S. Portland, for conduct unbecoming the character of an officer and a gentleman. The court sat five hours, and the charges being proved, Lieut. Puddicombe was sentenced to lose one year's time in the service, and Mr. Hancock two.—*Plymouth Journal.*

Sir Humphry Davy's Protectors.—H.M.S. Bellerophon, alias Captivity, once the most renowned ship in the British fleet, for being in every brush and "scrimmage;" the ship in which the great Napoleon first felt the loss of liberty and of power. She had been employed as a convict ship for many years, and was lately sold out of the service, and is now being taken to pieces at Plymouth. This ship was coppered at Sheerness, in April, 1826, and was fitted with Sir Humphry Davy's protectors; she was removed to Plymouth, and was moored alongside the Dock-yard, exposed to a strong stream of tide. Some gentlemen, desirous of ascertaining the result of Sir H. Davy's application, had several sheets of copper taken off the bottom, carefully cleaned and weighed, from which it appears, that very little oxidation has gone on for the last ten years. We subjoin the following weights for the information of our scientific readers.

Sheet.	inches.	per super. ft.	No. 1.	No. 2.
1st . .	48 by 14	at 32oz.,	9lb. 5¼oz.	10lb. 0oz.
2nd . .	48 by 14	at ditto,	9 5½	8 15
3rd . .	48 by 14	at 28oz.,	8 2½	8 5
			26 13¼	27 4

N.B.—The weights per super. foot are "as stamped:" in column 1 are the computed original weights; in column 2 are the weights of the sheets when taken off. The above sheets were taken from the starboard bow, a little below the late water-line, and the

immediate neighbourhood of a cast-iron protector. The copper has since been rendered bright and clear from weeds or alkaline deposits, and we are warranted in saying, that little or no corrosion had taken place. It even appears that two of the sheets have actually acquired additional weight, but this may have arisen from these sheets being drawn out a little above the thickness assigned to copper weighing 32 or 28oz, to the superficial foot.—*Plymouth Paper.*

Capt. Sir John Franklin R.N. who has been recently appointed governor of Van Diemen's Land, is to embark at Portsmouth early in August, with his lady and suite; he will also be accompanied by the Archdeacon of that colony, and several other highly respectable persons. The East-India-built ship, Farlie, of 755 tons register, Capt. Ager. (late H.C.S.) now in the London docks, has been engaged for their conveyance, and will proceed from thence direct to Hobart Town and Sydney, touching at the Cape of Good Hope for refreshments. This fine vessel is fitting up in a very superior manner, for the comfort of those who are to proceed by her; they will be accommodated, according to their respective circumstances, as cabin, intermediate, or steerage passengers.—*Hants. Telegraph.*

SURVEYOR OF THE NAVY.—We have the satisfaction of announcing to our readers that His Majesty has been graciously pleased to confer the dignity of knighthood on Captain Symonds, the present Surveyor of the Navy. It would indeed have been marvellous if the valuable services of this officer, in his important and arduous station, had remained unnoticed by the King, as all former Surveyors of the Navy had received a similar honour. But the manner in which it was conferred on Sir William Symonds must make this distinction most gratifying to his feelings, and most satisfactory to the nation. We understand that His Majesty commanded the presence of the Surveyor at his last levee, through the Lords Commissioners of the Admiralty, stating his gracious intention of knighting him for the unrivalled advantages which the naval service had derived from his talents; as the ships he has constructed have proved themselves superior to all others; and, at the same time, expressing his determination to support and uphold him in his office.

It has often afforded us pleasure to lay before our readers statements of the superiority of Sir William's ships; and we may now add, that accounts of a most satisfactory nature have been received from the Rover and Cleopatra on the South American station. The Rover being ordered to the Pacific from Rio, was brought so deep in the water by the stowage of provisions and stores on her decks, that it was a question with some whether she would make a safe passage. But, in the very bad weather she experienced, and for

which Cape Horn is so celebrated, she shipped but one " bit of a sea" during the passage; and notwithstanding these ill omens, the crew walked the weather gangway the whole time as dry as if she had been in Portsmouth harbour: indeed, her behaviour appears to have been the admiration of all on board. The Cleopatra, likewise a six-and-twenty-gun ship, has sailed round the Dublin, a fine fifty-gun frigate, sparing her half her canvass. The Dublin, however, being a reputed bad sailer, more worthy laurels were left for the Cleopatra to gain, in competition with an American ship famed for " going ahead," as Jonathan has it. They accordingly started, and the manner in which the Cleopatra not only weathered on the American, but also left him astern, was sufficient to excite even the Yankee skipper's astonishment; and, lastly, in a fair trial with the celebrated fast-sailing French corvette, L'Ariane, both " bye and large," she left her so far astern, that there seemed to be no farther laurels for her to win.

The Vanguard, a two-decker, is still to be tried; but we may mention one singular and striking circumstance respecting her, which will show that these ships are not built on loose " rule of thumb" data. In taking in her ballast, stores, provisions, and guns, sundry anxious representations were made to Sir William, urging his consent to certain alterations in their stowage, in order to bring the ship to the line of flotation recommended by himself. He persisted, however, in the plans he had originally laid down; and, when all was completed, the draught forward and aft were at the very inches which he had predicted.

The Dutch squadron now collected in Niewe Diep, under Admiral Ziervogel, consists of the Maas 50, Bellona 50, Hippomenes 36, Castor 36, Valk 18, Snelheid 14, Windhond 14, Pellikaan 10, Frederick Kendrik 10, and Curaçoa steam vessel carrying 6 guns. This squadron will sail on a cruise in the North Sea in the middle of June, and will return there in August, and afterwards each vessel sail for different destinations.

Royal Naval School.

The second general meeting, for the present year, of the friends and supporters of this most useful institution, was recently held at the school (Alfred-house, Camberwell,) and was numerously attended.

The objects of the meeting were twofold—first, to confirm the report of the council of administration received at the meeting of the 31st of May last; and, secondly, to distribute among the scholars the prizes (including a gold and a silver medal) to which many of them, at the examination which took place some few days previously, had proved themselves entitled. Before the second, which was the principal object of the meeting, was proceeded with, Admiral Sir Robert Stopford was called to the chair, and a resolution confirmatory of the report above alluded to was unanimously agreed to. A short discussion then took place relative to the appropriation of a fund wherewith to build a school for the institution, for which purpose His Majesty has been so muni-

ficent as to grant a piece of ground at the south-east end of Greenwich Park, a situation considered particularly adapted to render the school conspicuous, as it is in the immediate neighbourhood of the Great Dover-road, and commands a fine view of the river Thames and the shipping—a circumstance which cannot fail to be of service to an establishment where the sons of naval men, in addition to receiving a general education, may have every opportunity of being brought into juxtaposition with objects of interest to those among them who may be destined for a maritime life and profession. The building which is to form the school of the establishment is to be erected through the means of a fund raised by public subscription, and we cannot recommend to the munificence of the public any object more worthy of it than an institution with which the welfare of naval men, and the general interests of the naval profession, are inseparably connected. Among the names of those who are already to be found in the list of subscribers are those of Admiral Sir E. Codrington, 10l.; Captain Herbert, 25l.; Sir George Seymour, Sir Courtney Boyle, &c.; Mr. Gillot, the navy tailor, has subscribed 50l., in addition to two donations of 10l. each, a fact to which too much praise cannot be ascribed. The first object of the meeting having been disposed of, those gentlemen who were engaged upon it then adjourned to the school-room, which was tastefully fitted up for the occasion. Several flags, including the Union Jack, were displayed, and the room was decorated with flowers and evergreens; but these were far from being the only ornamental objects present, for a large number of the parents and friends of the scholars had assembled, chiefly of the gentler sex, to witness the distribution of the prizes.

Sir E. Codrington was selected to present to each scholar the prize to which his examination had entitled him, and proceeded to do so in a manner which called forth the applause of every one present. Masters G. Jennings and G. Christian were the two boys who had been named as deservedly claimants of the gold and silver medals. Those prizes were given to them, as were also several others, consisting of popular books to others of the scholars, among whom Masters Domville, Hopley, Andrews, Birch, Harper, Tomson, Morgan, Payne, Scott, Barker, and many others were conspicuous. Nothing could surpass the extraordinary proficiency in various branches of classical and mathematical knowledge, and in different modern languages, which these boys exhibited. But we feel called upon to lay more particular stress upon the attainments of the two young gentlemen, neither of whom was beyond fifteen years of age, who gained the medals. The former of the two was the first boy in the school, as far as general knowledge went; and the second was, in addition, the author of an English poem upon Columbus, which he read to the meeting amidst the most hearty applause. Several prizes were also awarded to different boys for their proficiency in drawing, &c.

After the prizes were distributed, the Rev. T. Myers, the master of the school, read the report of the examination of the scholars, which had lately taken place before the Rev. J. E. Dalton, M.A. of Cambridge, and M. Brassier, professor of the French language in King's College, London. Both those gentlemen had reported that the proficiency of the scholars exceeded what they had generally met with in schools of a similar description, and were highly commendatory of the general acquirements of the scholars of the Naval School. Mr. Myers afterwards read a very elaborate and admirable statement of his system of education, which was founded upon Dr. Bell's, who was a munificent patron of this institution.

After speeches from Sir E. Codrington, and Sir R. Stopford, upon the general utility and success of the establishment, the meeting separated, delighted with what they had witnessed. *Times.*

NEW BOOKS.

REPORT on the Commerce of the ports of New Russia, Moldavia, and Wallachia, made to the Russian Government in 1835, by Julius de Hagemeister. Effingham Wilson, London.

This is a translation of the original report, made by order of Count Woronzow, to which is added the author's own observations on the various northern ports of the Black Sea. Having been collected from official sources, the mass of important information in it is entitled to confidence. It opens to view the immense trade which the shores of the Black Sea are capable of; and the various tables of returns in it, will prove to the merchant a source of that kind of information which to him is absolutely necessary, while navigators may consult with advantage the various hints it contains; in fact, no ship trading to the Black Sea should be without it.

A CONCISE SYSTEM OF MATHEMATICS in Theory and Practice. By Alexander Ingram. Third Edition. Oliver and Boyd, Edinburgh.

A system of mathematics must be concise indeed to be contained in 460 small octavo pages; yet the author of this edition, Mr. James Trotter, has succeeded in preserving together, not only the principles but the most important practical applications, of the various branches of mathematics; to which he has added tables of logarithms, as well as sines and tangents, and square and cube roots, so as to render it one of the most desirable little books of its kind, for practical men, that we have yet met with, and as such we can safely recommend it to our readers.

A CODE OF UNIVERSAL SIGNALS adapted to the use of all nations &c. By H. Cranmer Phillipps, N.N. Longman and Co. London.

We are glad to find Mr. Phillipps's signals in a second edition, although we have not yet heard of them in their foreign garb. Indeed, this is a consummation, the object of which no system of signals, notwithstanding Captain Rohde's attempt, will, we apprehend, ever enjoy. We have already given our opinion of this code, and consider it as having peculiar claims in point of economy to general adoption.

HISTORICAL AND DESCRIPTIVE ACCOUNT OF CHINA.—By Hugh Murray &c. 3 volumes. Oliver and Boyd, Edinburgh.

These volumes form a portion of the Edinburgh Cabinet Library, a work which enjoys a high and well-merited reputation. The account of China is condensed in the same masterly style which distinguishes other histories of this work; and as we find it contains every branch of information, not excepting navigation, we have ample reasons for recommending it to our naval readers about to visit that interesting part of the world.

Naval Register.

The Royal Navy in Commission—June 21st, 1836.

PORTSMOUTH.—Admiral, Sir Philip-Charles-Henderson Durham, G.C.B.—*Flag-Ship*, Britannia, 120.

PLYMOUTH.—Admiral, Right Hon. Lord Amelius Beauclerk, G.C.B., G.C.H.—*Flag-Ship*, Royal Adelaide, 104.

NORE.—Vice-Admiral, Hon. C. E. Fleeming.—*Flag-Ship*, Howe, 120.

Asia, 84—Capt. W. Fisher, 16th June arrived at Spithead.

Astrea—Capt. J. Clavell, Falmouth.

Bellerophon, 80—Capt. S. Jackson, C.B., 28th May at Spithead.

Bonetta, 10—Lieut. Com. P. Bisson, 18th June arrived at Portsmouth from Plymouth.

Britannia, 120—Capt. E.R.Williams, Portsmouth.

Buffalo—Capt. J. Hindmarsh, Portsmouth, fitting.

Columbine, 18 — Com. Henderson, Plymouth, fitting.

Cornwallis, 74 — Capt. R. W. G. Festing, Plymouth Sound.

Cove—Capt. James Ross, 15th Feb. sailed, having refitted at Stromness.

Excellent—Capt.T. Hastings, Portsmouth, for practice of naval gunnery.

Hercules,74--Capt.M.F.F.Berkeley, Sheerness.

Howe, 120 — Capt. A. Ellice, Sheerness.

Imogene, 28—Capt. H.W.Bruce, Plymouth, fitting.

Madagascar, 46—Capt. SirJ.Peyton, Portsmouth, fitting.

Minden, 74—Capt. A.R. Sharpe, C.B. Plymouth, fitting.

Pembroke, 74—Capt. Sir T. Fellowes, 1st June at Spithead.

Portsmouth, *Yacht* — Lieut. W. M'Ilwaine, Portsmouth.

Prince Regent, *Yacht* — Capt. G. Tobin, C.B. Deptford.

Royal George *Yacht*—Capt.Rt.Hon. Lord A. Fitz Clarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht* — Capt. Sir Charles Bullen, Kt., K.C.H., Pembroke.

Royal Adelaide, 104 — Captain J. Sykes, Plymouth.

Seaflower,*Cutter*, 4—Lieut.J.Roche, Portsmouth station.

Speedy, *Cutter*—Lieut. J. Douglas, Sheerness station.

Vanguard, 80 — Capt. Hon. D. P. Bouverie, 25th May at Spithead.

William & Mary, *Yacht*—Capt. Sir S. Warren, Kt. K.C.H., Woolwich.

LISBON STATION.

Rear-Admiral, W. H. Gage.—*Flag-Ship*, Hastings, 74.

Cameleon, 10—Lieut. Com. J. Bradley, 19th Jan. in the Tagus.

Castor, 36—Capt. Rt. Hon. Lord J. Hay, 26th May at St. Andero.

Hastings, 74 — Capt. H. Shiffner, in the Tagus; 3d April off Oporto.

Magicienne, 24—Capt. G. W. S. J. Mildmay, 30th April, at Cadiz.

Pearl, 20—Com. H.Nurse, 19th April in the Tagus.

Phœnix, St.V.—Com. W. Henderson, Plymouth.

Ringdove, 16—Com. W. F. Lapidge, north coast of Spain.

Royalist, 10—Lieut. Com. C.A. Barlow, north coast of Spain.

Russell, 74—Capt. Sir W. H. Dillon, K.C.H., April at Vigo.

Saracen, 10—Lieut. T. P. Le Hardy, north coast of Spain.

Talavera, 74—Capt. T. B. Sullivan, 12th June sailed for the north coast of Spain.

Tweed, 20—Com. T. Maitland, 26th May at St. Sebastian.

Viper, 6—Lieut. Com. L. A. Robinson, May north coast of Spain.

MEDITERRANEAN STATION.

Vice-Admiral, Sir Josias Rowley, Bart., G.C.B.—*Flag-Ship*, CALEDONIA, 120.

BARHAM, 50 — Capt. A. L. Corry, 2d June at Malta.

CALEDONIA, 120—Capt. G. B. Martin, C.B., 2d June at Malta.

CANOPUS, 84 — Capt. Hon. J. Percy, 2d June at Malta.

CEYLON, 2—Malta.

CHILDERS, 16—Com. Hon. H. Keppel, 22d March at Gibraltar.

CLIO, 16—Com. W. Richardson (*a*), 3d Jan. at Gibraltar.

EDINBURGH, 74—Capt. J. R. Dacres, 2d June at Malta.

ENDYMION, 50—Capt. Sir S. Roberts, 12th Feb. at Corunna.

FAVORITE, 18—Com. G. R. Mundy, 2d June at Tripoli.

JASEUR, 18—Com. J. Hackett, 22d March at Gibraltar.

MALABAR, 74—Capt. Sir W. A. Montague, 19th Jan. at Cadiz.

MEDEA, 6—20th April at Ancona.

ORESTES, 18—Capt. H. J. Codrington, 22d March at Gibraltar; 13th May sailed for Barcelona.

PORTLAND, 52 — In attendance on the King of Bavaria.

REVENGE, 78—Capt. W. Elliott, C.B., K.C.H., 2d June at Malta.

RODNEY, 92 — Capt. H. Parker, 7th March at Barcelona.

SAPPHIRE, 28—Capt. R. F. Rowley, 9th April at Corfu.

THUNDERER, 84—Capt. W. F. Wise, C.B., 2d June at Malta.

TRIBUNE, 24—Capt. J. Tomkinson, 2d June at Smyrna.

TYNE, 28—Capt. Viscount Ingestrie, 13th May left Gibraltar for Minorca.

VERNON, 50 — Capt. J. M'Kerlie, 2d June at Malta.

VOLAGE, 28 — Captain P. Richards, 4th May Dardanelles.

CAPE AND AFRICAN STATION.

Rear-Admiral, P. Campbell, C.B.—*Flag-Ship*, THALIA, 46.

BRITOMART, 10—Lieut. W. H. Quin, 19th Dec. at Ascension.

BUZZARD, 10—Lieutenant Com. S. Mercer, June, Bight of Benin.

CHARYBDIS, 3 — August, Bight of Benin. Captured Argo, with 428 slaves.

CURLEW—Lieut. Com. E. Norcott, Dec. off Sierra Leone.

FAIR ROSAMOND, *Schooner* — Lieut. Com. G. Rose, June in Bight of Benin.

FORESTER—Lieut. Com. G. G. Miall, 21st June off Prince's Island.

GRIFFON, 3—Lieutenant Com. J. E. Parlby, 24th Nov. at Sierra Leone.

LEVERET — Lieut. Com. C. Bosanquet, 2d March at Sierra Leone.

LYNX, 10—Lieut. Com. H.V. Huntley, 12th Dec. left Ascension.

PANTALOON, 10—Lieut. Com. ...., 8th May left Portsmouth.

PELICAN — Commander B. Popham, 4th July arrived at Cape from Ascension.

PYLADES, 18—Com. W. L. Castle, Prince's Island; 13th Feb. at Sierra Leone.

ROLLA, 10—Lieut. Com. T. H. H. Glasse, 24th Nov. at Ascension.

THALIA, 46—Captain R. Wauchope, 13th Dec. left Ascension for Gambia.

WATERWITCH—Lieutenant Com. J. Adams (*b*), 24th Feb. at Fernando Po.

EAST INDIA STATION.

Rear-Admiral, Hon. Sir T. B. Capel. *Flag-Ship*, WINCHESTER, 52.

ANDROMACHE, 28—Capt. H.D. Chads, 14th Jan. left Madras.

HYACINTH, 18—Com. F. P. Blackwood, 28th Dec. at Madras.

RALEIGH, 16—Lieut. Com. M. Quin, 4th Nov. at Manilla; 2d Feb. at Calcutta.

RATTLESNAKE, 28—Capt. W. Hobson, 30th Dec. arrived at Bombay.

ROSE, 18—Com. W. Barrow, 20th June arr. at Trincomalee.

SCOUT—Com. R. Craigie, 10th March at Madeira.

VICTOR, 18 — Com. R. Crozier, 22d Sept. left Calcutta for Penang.

WINCHESTER, 52—Captain E. Sparshott, R. M., 21st April sailed for Bombay.

WOLF, 18—Com. E. Stanley, 1st Nov. left Mauritius for Madras.

ZEBRA, 16—Com. R. M'Crea, 21st May left Madras for Colombo.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral, Sir Peter Halkett, Knt., G.C.H. *Flag-Ship*, MELVILLE, 74.

BELVIDERA, 42—Capt. C. B. Strong, May at Barbados.

CHAMPION, 18—Com. R. Fair, April on her way to Halifax and Newfoundland.

COLUMBIA, St. V.—Master Com. J. Henderson, 11th November at Barbados.

COMUS, 18—Com. W. P. Hamilton, 23d April left Jamaica for England, *via* Vera Cruz.

CRUIZER, 18—Com. W. A. Willis, April, off Cuba.

DEE, St. V. 4—Com. W. Ramsay, 5th May at Jamaica.

DROMEDARY—Bermuda.

FLAMER, St. V.—Lieut. Com. J. M. Potbury, running with mails between Jamaica and Barbados.

FORTE, 44—Captain W. O. Pell, 7th March sailed from Jamaica.

GANNET, 18—Com. J. B. Maxwell, 5th May at Barbados.

HARPY, 10—Lieut. Com. Hon. G.R.A. Clements, 19th March sailed for West Indies.

MAGNIFICENT, 4—Lieutenant Com. J. Paget, Port Royal.

MELVILLE, 74—Flag of Vice-Admiral Sir P. Halkett, G. C. H., Capt. P. J. Douglas, arrived at Madeira 8th April; 1st May at Bermuda.

METEOR, St. V.—Lieut. Com. G. W. Smith, 4th Oct. arrived at Barbados.

NIMROD, 20 — Com. J. Fraser, 23d May at Jamaica.

PICKLE, 5—Lieut. Com. A. G. Bulman, off Cuba.

PIKE, 12—Lieut. Com. A. Brooking, 26th Nov. arrived at Jamaica from Maracaybo.

PINCHER, 5—Tender to flag-ship, 20th Sept. left Jamaica for Nassau.

RACER, 16 — Com. J. Hope, April at Carthagena.

RACEHORSE, 18 — Com. Sir J. E. Home, 5th May at Barbados.

RAINBOW, 28 — Capt. T. Bennet, 6th March in Carlisle Bay; April, on way to Halifax and Newfoundland.

SAVAGE, 10—Lieut. Com. R. Loney, 6th May arrived at Jamaica.

SCYLLA, 18—Com. E. J. Carpenter, 11th Jan. left Jamaica for Chagres.

SKIPJACK, 5—Lieutenant Com. J. J. Robinson, off Cuba.

SNAKE—Com. R. L. Warren, 5th May at Bermuda.

VESTAL, 26—Captain W. Jones, 21st April at Barbados.

WANDERER, 16—Com. T. Dilke, April on way to Halifax and Newfoundland, from New York.

WASP, 18—Com. J. S. Foreman, 7th March at Vera Cruz.

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hamond, K.C.B. *Flag-Ship*, DUBLIN, 50. 2d June.

ACTÆON, 28—Capt. Rt. Hon. Lord E. Russell, 20th Jan. left Rio for R. Plate.

BASILISK—Lieut. Com. G. G. M'Donald, coast of Peru.

BLONDE, 46—Captain T. Mason, C.B., 29th Feb. at Coquimbo.

CLEOPATRA, 26—Capt. Hon. George Grey, 2d March left Rio for St. Catherine's.

DUBLIN, 50 — Capt. G. W. Willes, at Rio Janeiro.

HARRIER—Com. W. H. H. Carew, 12th March arrived at Pernambuco.

HORNET, 6—Lieutenant Com. T. R. Coghlan, running between Monte Video and Rio Janeiro.

NORTH STAR, 28—Capt. O. V. Harcourt, Dec. off coast of Mexico.

RAPID, 10—Lieut. Com. F. Patten, Falkland Islands.

ROVER, 16—Com. C. Eden, 16th Dec. at Valparaiso.

SPARROWHAWK, 18—Com. C. Pearson, coast of Peru.

TALBOT, 28—Captain F. W. Pennel, 21st Jan. at Buenos Ayres.

TROOP SHIPS.

ATHOL, *Troop Ship*—Master Com. A. Harley, Woolwich.

JUPITER, *Troop Ship*—Captain Hon. F. W. Grey, 2d Feb. arr. at Calcutta.

STEAM VESSELS.

AFRICAN—Lieut. Com. J. West, Packet Station.
ALBAN—Blackwall, refitting.
BLAZER—Woolwich, refitting.
COLUMBIA—See West Indies.
CARRON—Southern coast.
COMET — Lieut. Otway, 28th April sailed for north coast of Spain.
CONFIANCE—Woolwich, refitting.
DEE, 4—See North American Station.
ECHO—City Canal, fitting.
FIREBRAND—Woolwich.
FIREFLY—City Canal, refitting.
FLAMER, 6—See West India Station.
HERMES—Packet.
LIGHTNING—March, accompanied the King of Portugal to Lisbon. Woolwich basin.
MEDEA, 6—See Mediterranean Station.
MESSENGER, 1—Woolwich basin, refitting.
METEOR—See West India Station.
PHŒNIX—See Lisbon Station.
PLUTO—Woolwich.
RHADAMANTHUS — 16th June sailed with Terror from the Nore.
SALAMANDER — 28th May sailed for St. Sebastian.
SPITFIRE, 6—Woolwich basin.
TARTARUS—Packet.

SURVEYING VESSELS AT HOME AND ABROAD.

ÆTNA, 6—Capt. A. T. E. Vidal, surveying the Gold Coast.
BEACON — Com. R. Copeland, Portsmouth, fitting.
BEAGLE, 10—Capt. R. Fitz Roy, on her way home.
FAIRY, 10 — Com. W. Hewett, surveying the North Sea.
GULNARE—Capt. H. W. Bayfield, surveying the Gulf of St. Lawrence.
LARK—Lieut. Com. E. Barnett, West Indies.
MAGPIE—Lieut. T. S. Brock, Plymouth, fitting.
MASTIFF, 6—Mr. G. Thomas, surveying the Orkneys.
RAVEN — Lieut. Com. G. A. Bedford, surveying the Gold Coast.
SULPHUR—Capt. F. W. Beechey, surveying in the Pacific.
STARLING — Lieut. Com. H. Kellett, surveying in the Pacific.
THUNDER—Com. R. Owen, surveying in the West Indies.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; Assistants, Lieuts. J. Harding, G. A. Frazer.—Coast of Ireland.
Com. E. Belcher—Coast of Lancashire.
Lieutenants, M. A. Slater; H. C. Otter. —East Coast of Scotland.
Lieutenants, W. L. Sheringham; A. Kortright.—Coast of Wales.
Lieutenant C. G. Robinson—Solway Frith.
Lieutenants, J. Wolfe; R. B. Beechey. —Lakes of Ireland.

COMMISSIONED.

BEACON—Portsmouth.
BELLEROPHON, 80—Portsmouth.
BONETTA, 10—Sheerness.
BUFFALO—Portsmouth.
IMOGENE, 28—Plymouth.
MADAGASCAR, 46—Portsmouth.
MAGPIE, 4—Plymouth.

PAID OFF.

BEACON—Portsmouth.
COCKATRICE, 6—Woolwich.
LARNE, 18—Portsmouth.
PRESIDENT, 52—Portsmouth.
QUAIL—Plymouth.
SCYLLA, 16—Sheerness.
TRINCULO, 16—Plymouth.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS: CAPTAIN—R. Russell.—COMMANDERS—W. Allen, James Maitland.—LIEUTENANTS—W. Reed, P. Campbell, J. B. Baskerville, J. Morshead, W. Harvey, G. Ayscough.—MASTER—J. Webb.—SURGEONS—R. L. Bertwhistle, J. Kirk, M.D.

APPOINTMENTS.

ASCENSION I.: *Surg.* D. Deas.—ASIA, 84: *Mid.* A. Selwin.—BEACON, Surv. Ves.: *Assist. Surv.* Lieut. T. Graves; *Surg.* H. D. Henning; *Master* (act.) R. Hoskyn; *Purser*, W. Brydon; *Mates*, F. R. C. Helpman, A. B. Spratt, G. Smith, A. L. Maunsell; *Mids.* D. Aird, G. M. Aldridge; *Clerk*, R. J. Little.—BELLEROPHON, 80: *Chaplain*, G. Happer; *Assist. Surg.* J. Stewart; *Mates*, E. W. Sanders, R. S. Hewlett; *Mids.* C. Isaacson, J. A. Dunbar.—BRITANNIA, 120—*Surg.* G. Johnstone; *Mate*, R. Ripon; *Assist. Surg.* W. F. Carter.—BUZZARD, 10: *Lieut.* P. Campbell.—CALEDONIA, 120: *Lieut.* J. Cheere.—CORNWALLIS, 74: *Mates*, T. Lewis, W. Kendall, J. H. Cooke; *Assist. Surg.* A. J. Little.—CONFIANCE, 2: *Assist. Surg.* W. Pateson.—COAST GUARD: *Inspect. Com.* W.C. Browne, R.S.Hay, J. Oake, A.S. Pearson, E.Richards, J.T.Warren; *Lieuts.* J.Drew, •• Mulliore, St. W. Coyde.—EXCELLENT: *Mates*, R. Jenner, R. Lowe, R. D. Dalton; *Mid.* R. A. Powell.—EDINBURGH, 74: *Lieut.* E. Codd.—GREENWICH HOSPITAL: Out pension, *Lieut.* D. Keys.—HERCULES, 74: *Mate*, H. E. Crout; *Master, Assist.* J. Imrie.—IMOGENE, 28: *Capt.* W. H. Bruce; *Lieuts.* J. Hathorn, C. E. Tennant; *Mast.* R. Thompson; *Surg.* J. W. Johnstone, M.D.; *Assist. Surg.* R.M. Isbell.—MADAGASCAR, 46: *Capt.* Sir J. Peyton, K.C.H.; *Com.* W. H. Pierson; *Lieuts.* E. Bevan, W. Houston, J. R. Otway; *Mast.* H. J. Strutt; *Surg.* A. M'Kechnie, M.D.; *Purser*, J. Howard; *Sec. Mast.* R. Knox; *Mates*, G. H. Clark, R. E. Atkinson, L.W. Peyton; *Mast. Assist.* J. R. Duncan; *Vol.* A. Durell; *Mids.* D. Sinclair, J. Hawkins, P. J. Maitland, J. S. Durell; *Lieut.Mar.* A. Jarvis; *Clerk*, W. B. Scott.—MAGPIE, 4: *Lieut.* T. S. Brock; *Clerk*, M. A. Feeley.—MALABAR, 74: *Surg.* C. Carter.—MELVILLE, 74: *Lieuts.* T. Stevens, P. Baskerville, W. Harvey.—MINDEN, 74: *Mate*, J. Adams; *Mast. Assist.* J. Hungerfold; *Chaplain*, W. G. Tucker; *Vol.* J. C. B. Hay.—ORDINARY: *Capt.* T. Searle, C.B., Portsmouth; *Lieuts.* G. Simmonds, Chatham; J. Jeays, F. Wolley, Portsmouth; C. Hall, Plymouth; *Surg.* J. Osborne, Chatham; *Chaplain*, T. Ferris, Portsmouth.—PEMBROKE, 74: *Lieut.* J.C. Prevost; *Mates*, J.T. Caroll, M. Kerr, C.J. Hoffmeister, W. Crawford.—PYLADES, 18: *Lieut.* T. S. Hill.—RACEHORSE, 18: *Sec. Mast.* J. S. Reid.—ROYAL ADELAIDE, 104: *Chaplain*, Rev. A. H. Small; *Mates*, D. Reid, E. Little.—RINGDOVE, 16: *Purser*, A. H. Gilbert.—SEAGULL, 6: *Master*, W. White.—SEAFLOWER, 4: *Mast. Assist.* H. B. Yule; *Mate*, R. T. Davis.—TALAVERA, 74: *Lieut.* J. A. Bambridge; *Chaplain*, E. S. Philps; *Mates*, G. Alston, A. Tower.—VANGUARD, 80: *Lieut.* T. L. Maisie; *Mate*, F. W. P. Bouverie; *Vol.* W. Wilbraham; *Clerk*, J. Mitchell.

Births.

On the 12th of April, at Government house, St. Vincent, the lady of his Excellency Captain Tyler, R.N., K.H., of a son.

At the Ray, Maidenhead, Lady Philimore, of a daughter.

At Falmouth, on the 5th of June, the lady of Lieut. James, of H. M. steamer Tartarus, of a daughter.

At Boulogne-sur-Mer, on the 10th of June, the lady of Admiral Mackellar, of a son, her tenth child.

On the 16th of June, at Woodcote Cottage, near Chichester, the lady of Captain G. F. Dixon, R.N., of a son.

Marriages.

On the 20th of May, by the Archbishop of Armagh, at his Grace's house, Vice-Admiral Sir John Beresford, Bart. to Amelia, widow of the late Samuel Peach, Esq.

At St. George's, Hanover-square, Captain Swinburne, R.N., second son of Sir John E. Swinburne, Bart., to the Lady Jane Ashburnham, daughter of the late and sister to the present Earl of Ashburnham.

On the 28th of May, Mr. Joseph Till, to Miss Wolf, daughter of Mr. Thomas Wolf, R.N., both of Einsworth.

At Budock, Lieut. Riley, of H.M. brig Espoire, to Miss Gibbon, daughter of the late Captain Gibbon, of H.M. packet Lady Louisa.

At St. Thomas's Church, Ryde, Lieut. Henry Rd. Glynn, R.N., eldest son of Rear-Admiral Glynn, to Ann Margaret, eldest daughter of the late John Kearney, Esq. of the County of Kilkenny.

On June 9, at Plympton, the Rev. William Coppard, A.M. incumbent of Plympton St. Mary, to Charlotte Sarah, only daughter of Rear-Admiral Forster, of Plympton.

At Chickerell, near Weymouth, the Rev. William H. Gorton, rector of Chickerell and vicar of Sherborne, to Susan, only child of Captain William Payne, R.N. of Chickerell.

Deaths.

On the 14th of May, in the 74th year of his age, Captain James Horsburgh, Hydrographer to the East India Company; well known to our readers as the venerable patron of Oriental Hydrography.

On the 24th ult., at Ulley Cottage, Gloucestershire, in the 27th year of his age, Harcourt, only son of Capt. Slade, R.N.

On the 18th, in St. John's Wood Road, Emma, youngest daughter of Lieut. D. Henderson, R.N.

On June 10, at his residence in H.M. Dockyard, Portsmouth, after a few hours' illness, in his 69th year, deeply lamented, Thomas Atkinson, Esq. First Master Attendant—he served as Master of the Victory, at Trafalgar, and of the Theseus; at the Nile, under, and was a personal favourite with, the immortal Nelson, and for more than half a century was a brave, zealous, and experienced officer, and in society a kind-hearted honest man.

Lately, Captain John Smith, (1822), of the Royal Navy.

On the 11th of June, of consumption, at No. 7, Marlborough Row, Portsea, Mr. James Cooper, Master, R.N., aged 44 years.

Lately, Commander Richard Stephen Tomkins, aged 43. This officer was lieutenant of the Philomel in the Navarino action, and his loss is regretted by an aged mother, to whose support he mainly contributed.

On May 14, at Hunstanton, Norfolk, Lieut. Richard Napper, R.N.

On the 25th of May, at Plymouth, after a protracted illness, George Rowe, Esq. surgeon, R.N., aged 60, (brother to Mr. A. Rowe, Apothecary, Landport,) which rank he held for upwards of 40 years, and was highly respected by all who knew him.

Lately, of erysipelas in the head Mr. Barry O'Meara, formerly a surgeon R.N., better known as Napoleon's confidential medical attendant at St. Helena.

At Gillingham, near Chatham, Mr. George Austen, R.N., aged 27.

Lately, on board the Caledonia, (flag-ship) in the Mediterranean, in consequence of an accident whilst shooting at Syracuse, Mr. Charles Paul Irby, aged 18, son of Captain the Honorable Fred. Paul Irby, R.N.

At Brixham, Devon, the 15th May, in her 78th year, Susanna, widow of the late Captain David Pryce Cumby, R.N., mother of Captain Wm. Pryce Cumby, C.B., and Commander Charles Cumby, late of his Majesty's Ordinary at Portsmouth.

At the Island of St. Lucia, William John, Esq., R.N., son of George John, Esq., of Penzance. He went to St. Lucia as a magistrate.

On June 13th, at his house in Clowance-street, Plymouth, in the 84th year of his age, Mr. Samuel Paramore, formerly a quarterman in H.M. Dock Yard, Plymouth.

At Old Buckenham, Norfolk, on the 20th of May, Captain Eyles Mounsher, R.N., of 1813, aged 65.

About the 26th of March last, Mrs. Kitson, widow of Captain Kitson, Royal Engineers, together with her four children. This lady, a native of Portsmouth, was returning from Nassau in the ship James Laurie, which was unfortunately wrecked in coming through Providence North-East Channel, on the Island of Abaco, and a box of her clothes was found within a few yards of a spot where her lamented husband was about to erect a lighthouse. It is presumed that Chief Justice Manning and his family are lost in the same ship, together with all on board.

On the 9th of June, at Waterloo Road, Chatham, Lieut. Henry Fryer, R.N., (1801).

On the 16th of June, at Southsea, Lieut. Thomas Robert Pye, on the half pay of the Royal Marines, (1808,) aged 47.

On June 6, at Fratton Path, Landport, aged 29, Mr. Jas. Sheridan, R.N.

On May 17, at Andover, in his 25th year, James Peter Butt, Esq., youngest son of Captain Butt, R.N.

On the 13th of June, after a few hours' illness. Thomas Clifton Wheate, Esq. R.N., aged 50 years.

At Croydon Rectory, Arrington, Cambridgeshire, beloved and respected by all who had the pleasure of his acquaintance, the Rev. Wm. Love, of Downing Col. youngest son of Cpt. Love, R.N. of Yarmouth, in the Isle of Wight.

On the 17th of June, at Gosport, Retired Commander Thomas Lowton Robins, R.N. aged 76.

On Jan. 19, at Jamaica, Charles Howis Lee, third son of the late Lieut. Lee, R.N.

At her residence, at Fareham, on the 23d of May, Harriet, daughter of the late Vice-Admiral Sir W. Parker, Bart.

Lately at sea, on his voyage from the Persian Gulf, Mr. John Williams Dunsterville, chief officer of the "Velocity" of London, and eldest son of the late Mr. Peter Dunsterville of Plymouth, aged 31.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

MAY, 1836.

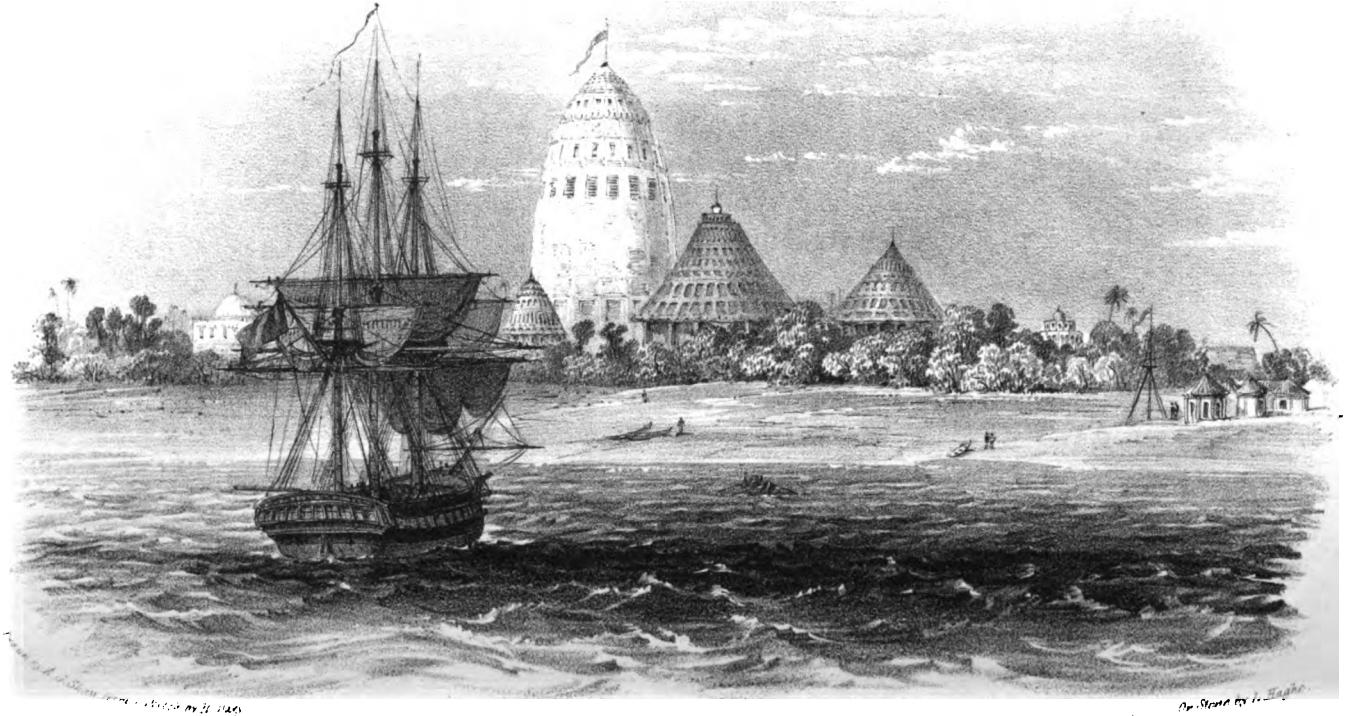
Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind.				Weather.	
								Quarter.		Strength.			
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
				°	°	°	°						
1	Su.	29·80	29·84	45	51	33	52	N.	N.	4	6	Bc.	Bcqphr (3)
2	M.	29·82	29·92	48	52	38	54	N.	N.	8	9	Or (1)	Qor 3) (4)
3	Tu.	29 92	29·88	45	51	39	53	N.	N.	7	8	Qo.	Qor (4)
4	W.	29·68	29·66	49	53	43	55	N.E.	N.E.	5	5	Or 1) (2	Or (3)
5	Th.	29·70	29·78	46	53	41	54	N.E.	E.	3	3	Or 1) (2)	Bcp (3)
6	F.	30·07	30·13	51	59	41	60	N.E.	E.	3	3	O.	B'c.
7	S.	30·28	30·27	52	56	40	58	N.	N.	5	7	B.	Bc.
8	Su.	30·28	30·24	48	57	43	58	N.	N.	4	5	Bc.	B.
9	M.	30·24	30·23	50	56	42	59	N.	N.	5	5	B.	Bc.
10	Tu.	30·19	30·19	52	57	42	60	N.	N.E.	4	4	Bc.	B.
11	W.	30·17	30·16	53	62	36	65	S.W.	S.W.	1	1	Bm.	Bm.
12	Th.	30·20	30·22	59	66	45	70	S.W.	S.W.	2	3	B.	B.
13	F.	30·34	30·37	58	68	45	69	S.W.	S.W.	2	2	Bm.	Bm.
14	S.	30·55	30·56	61	67	48	68	N.E.	N.E.	2	4	B.	B.
15	Su.	30 60	30·54	57	64	44	68	E.	E.	1	2	Bf.	B.
16	M.	30 57	30·51	59	69	47	70	S.E.	N.	1	2	B.	B.
17	Tu.	30·53	30·52	60	68	45	70	N.E.	E.	2	2	B.	B.
18	W.	30·36	30·32	60	65	48	66	N.E.	E.	2	3	B.	B.
19	Th.	30·30	30·23	52	59	49	61	N.E.	E.	4	5	Bc.	B.
20	F.	30 07	30·02	56	66	42	70	N.E.	N.E.	2	2	Bc.	B.
21	S.	30·00	30·03	58	63	49	64	N.E.	E.	2	2	Bcr 1)	B.
22	Su.	30·00	29·92	52	56	40	56	E.	N.E.	3	6	B.	B.
23	M.	29·82	29·84	50	60	43	60	N.E.	N.E.	5	5	Or 1) (2	Bc.
24	Tu.	30·10	30·13	54	60	44	61	N.E.	N.E.	5	5	O.	Bc.
25	W.	30 25	30·25	52	58	41	60	N.E.	N.E.	5	5	O.	Bc.
26	Th.	30·32	30·33	54	56	43	61	N.E.	N.E.	5	5	Bc.	Bc.
27	F.	30·39	30·40	56	60	38	62	N.E.	E.	4	3	B.	B.
28	S.	30·36	30·32	55	63	37	65	N.E.	E.	2	2	Bc.	O.
29	Su.	30·34	30·33	54	67	46	68	N.E.	N.E.	3	4	B.	Bc.
30	M.	30·27	30·23	55	67	42	68	N.E.	N.E.	3	3	Bc.	Bc.
31	Tu.	30·09	30·01	58	67	45	69	N.	E.	2	3	Bm.	B c.

MAY—Mean height of Barometer = 30·177 inches; Mean Temperature = 52·5 degrees; Depth of Rain fallen = 1·20 inches.

N.B. The 15th being clear, was favourable for observing the great Solar Eclipse: the thermometer in the shade at 2 o'clock, or soon after the beginning of the eclipse, stood at 68°; but at the time of the greatest obscuration it was at 63°. On the 19th day, from half-past nine till an hour after midnight, the northern lights appeared very splendid; the streamers sometimes ascended nearly to the zenith.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.



VIEW OF THE JUGGERNAUT PAGODA, COAST OF ORIXA. N.N.W.3.

ORIGINAL PAPERS.

AUGUST, 1836.

THE JUGGERNAUT PAGODA, AND ADJACENT COAST.

HAVING landed specie for the use of our Burmese possessions, we took advantage of an ebb tide, and left Amherst for the Juggernaut Pagoda, on the evening of the 7th January, 1835. Steering from S. W. to W. by S. until on the meridian of the Rangoon river, in 30 and 31 fathoms, we hauled to the N. E. monsoon, and on the evening of the 9th passed to the northward of Preparis, at the distance of from six to seven leagues. I may here remark, that in the head of the bay, and more particularly at the Sand Heads and at Calcutta, the general direction of the N. E. monsoon is to the westward of north; the most fixed point being N. by W. and varying from N. W. by N. to N. N. E.; but on the coast of Orixa, and the Gulf of Martaban, it is inclined more easterly. These are interrupted by occasional calms, light variable airs, and southerly winds. The total of southerly winds amount to seven months of the year; and during the S. W. monsoon, which is steady for five months, it blows strongly up the bay, attended with a good deal of sea, haze, and, at times, very disagreeable weather. On the Coromandel coast are experienced the hot winds, which, passing over a large tract of highly heated country, resemble blasts from a furnace; the thermometer in the shade ranging 85° to above 100°. It is advisable, at this time, for vessels lying at anchor *not* to hoist their wind-sails, and to spread their awnings with curtains, so as to admit the hot winds as little as possible. If it should be found necessary to hoist wind-sails, let them be occasionally wetted, they will then throw out a cool, grateful breeze. The month of May is conspicuous as being the most intolerable at this period. Indeed it is difficult to imagine the parching and exhausting heat of the wind during this month, the thermometer in the open air is frequently from 120° to 130°. The tatties are invaluable at this season, and cool down the atmosphere to an agreeable temperature; indeed, but for these artificial resorts, it would be difficult to exist. The sea breeze is often a delightful relief; it generally sets in past noon, and blows during the greater part of the night.

The N. E. monsoon is the fair-weather season of India; the temperature becomes pleasant, the wind generally moderate, with fine clear weather and smooth water; and in no part of the world can there be finer cruising than in the Bay of Bengal, and other parts of India, during this monsoon. In December, January, and February, the thermometer at Calcutta ranged from 50° to 76°;

and for a great part of January from 40° to 66°; this period is called the cold season, and the old residents make preparations similar to those for withstanding a British winter!

The changing of the monsoon is a period of great anxiety, particularly at new and full moon, and great caution is necessary in approaching the Sand Heads, where some hurricanes have occurred probably more desolating than any on record. The barometer is most valuable at these changes.

Having passed through the Preparis channel, we stood across the bay, mostly on a wind; and when within 150 miles of the coast were becalmed, and had light southerly airs for twenty-four hours. During this time we observed several snakes round the ship. They appeared from eight to twelve feet in length, of most beautiful colours, some a bright red, others yellow with black stripes, and some spotted; they are very common in India, more particularly near the Maldive and Laccadive islands.

On the night of the 14th, we sounded in thirty-two fathoms, between Point Palmyra and False Point, and until daylight ran along in twenty to eighteen fathoms; the wind being fresh from the N. E. and chilly, the thermometer 62°.

That part of the coast of Orixa, between False Point and Manikpatam, presents a long line of low coast of most dreary and uninviting aspect, being an extent of sand with a few patches of verdure, running nearly W. S. W. about 80 miles. In this range there is not a single hill or remarkable object, save the Black Pagoda and the Juggernaut; and these are as the oases in the desert, and are excellent landmarks. The surf breaking sullenly on the beach, is in keeping with this monotonous scenery, and its force is such as to preclude landing, except in masulah boats. These are of the same construction as the Madras boats, but, I think, lighter, and are thrown up and dragged clear of the surf with greater ease.

We ran down the coast in eleven fathoms, at the distance of two to three miles; but during the night, from fifteen to twenty fathoms is the best depth. A vessel running for the land by night should be cautious in picking up the soundings, and run under easy sail, or the probability is, that the noise of the surf may be the first intimation of danger. Many vessels have been precipitated on this coast from want of proper attention, and from being too confident of making the land in time. In the clearest day the coast will not be visible a greater distance than twelve miles, and the Juggernaut from eighteen to twenty. We sighted the temple just after passing the Black Pagoda, and it made as if rising out of the sea, and very white, it having been recently chunam'd. It is of nearly a conical shape, the top terminating with a sort of dome and vane; there is also a conspicuous pendant flying from it, which gives it a strange appearance. The trees and buldings in its vicinity soon lift above

the horizon; and on nearing the anchorage, it has the appearance of a large place.

The bearing of the temple on which to anchor, nearest the flagstaff, is N. N. W. in eight to eleven fathoms. The first is on sand, and can only be taken in the finest weather; whereas from ten to eleven fathoms is mud bottom. We anchored in ten fathoms, distant from the beach two miles.

The bustle of anchoring over, I turned to take a leisurely view of the shore; but there was too much glare: the time was noon, with a cloudless sky, and the Juggernaut seemed melting from the sight, and losing itself in a lurid atmosphere, that gave to the whole land a faintness and uncertainty peculiar to sandy countries. The whitening of the temple is much to be regretted, and its former time-worn and dark sombre appearance, must have been much more in accordance with such an ancient and extraordinary edifice. On first beholding it, we are led to inquire why such a spot was chosen whereon to build a temple, certainly the most singular in its form, perhaps, in the world, and the building of which is said to have taken twelve years' revenue of the province? True it is, that time seems to have dealt leniently with it, as, after the lapse of ages, and the frequent sweeping of hurricanes, it remains to this day the Mecca of Hindostan. Its ignoble site and contiguous scenery tending but to give greater effect to its imposing solemnity. Its idolatrous associations are more impressively felt when viewed at a distance; and it may well be imagined with what emotion the worn-out and longing pilgrim, after his toilsome journey, catches its first glimpse, mixed, as it were, with the heavens, and rising in proud, solitary magnificence over a long vista of low, uninteresting country. Having reached this goal of their wishes, thousands of deluded wretches are content to render up their being in perfect confidence of participating in all the enjoyments held out by their cunning priests as the reward of their faith. At the time of their grand festival, the roads leading to this great Moloch of the East, can be traced to the distance of two to three days' journey by worn-out bodies of the dead and dying.

A party from on board landed, and were received by the resident, who kindly conducted them to his bungalow, which, together with several others belonging to the officers of the establishment, stands about a quarter of a mile up the beach on one of those patches of verdure which are scattered at intervals over the country. The bungalows face the sea, and are somewhat shaded by trees. They have also small compounds, or enclosures, and there is a flagstaff, with the jack flying; this residence is considered more cool and healthy than the town. The resident, Mr. Wilkinson, informed us he had been eighteen years there, and that we were the only man-of-war which had anchored in the roads, since the Carron was wrecked near the Black Pagoda in 1820. The station is

included in the district of Cuttack, being due south near fifty miles from that place. It must indeed be a dreary place, and subject to great privation: surrounded as it is by sand, no sort of vehicle can be used, and even to a horse it is any thing but agreeable. The elephants seem to walk rather briskly, but were evidently delighted to get on firm ground, and, at a word from the mahout, walked through the town with great spirit. Our course from the residence lay over a sandy plain, interrupted by occasional tufts of trees; some of these spots might cover an acre of ground, and it was singular to observe how each had been made to protect and nestle a little village; the children half hid among the trees, the jealous dog, and two or three cows, completed a very interesting group.

A ride of half a mile brought us on terra firma, and we proceeded through the town towards the temple, made the circuit of its walls, and viewed it from every point of the compass. None but its votaries being permitted to pass the gates, we ascended a high flat-roofed house, commanding a view of the interior of the courts, base of the temples, &c.

The town of Pooree, in which the Juggernaut Pagoda stands, is situated about a mile from the sea, and is enclosed by jungle; the general feature of the immediate country being extensive sandy plains. It is a most perfect Hindoo town, considered very holy, and at present contains about 10,000 inhabitants. These are mostly connected with the services of the temple; and at the arrival of the pilgrims are fully occupied in affording lodging, &c. The houses are just a remove from huts, except a few belonging to the priests or rich farmers. The fronts are mostly daubed with rude outlines of their gods, all monsters, some with five arms, and others without any; some with elephants' heads; and these are intermixed with peacocks and Hindostanee characters. Then there are numerous pagodas and hospitals for sick pilgrims, which, together with the temple, and other curious buildings within its surrounding walls, truly present a most singular mass; a jumble of squalid superstition, and vague idolatrous grandeur.

The whole population, men, women, and children, elephants and favourite cows, are all marked on the forehead with various coloured paint; the painting seems to be arbitrary, and to depend on the caprice of the priest. The colours employed are red, yellow, and mud; and they are placed in dots, lines, and curves. This general daubing, which is common all over Hindostan, takes place on mornings and evenings; and thus secured from evil, the people go forth to their labours with confidence and alacrity. I witnessed a mahout, or driver, with his elephant, in the act of being marked. The man had first dots and lines placed on his forehead, and a stripe down his nose; then the elephant, kneeling down, received his portion, being similar to the mahout's, a yellow stripe, running

the whole length of his trunk; his tusks were capped with brass, and certainly when he walked towards a piece of water close by, he looked a most noble animal. On reaching the margin of the tank, he set up a loud shout, and commenced spouting the water up, seeming highly delighted.

The town roads are very deep and filthy, being several feet lower than the houses, the ascent to which are by steps cut out of the sides or walls of the road, and a family may at times be seen walking up the steps, followed into the house by their favourite cow. These Bramanee cows are mostly white and delicately formed, having deer-like legs. Their owners take delight in having their bodies fancifully tattooed, and their horns brass-tipped. They are indeed highly favoured throughout Hindoo India.

The temple of Juggernaut, or of "The lord of the universe," stands immediately without the town on its N. W. side. It is in latitude 19° 48′ 40″ N. longitude 85° 53′ 36″ E. and lies nearly S. W. from Calcutta, about 250 miles, allowing for the windings of the Hooghly. Its entire height is 220ft. and the hill on which it is built has a considerable elevation. This with other minor temples and shrines form the inner court; the walls being 12 feet high. Outside these walls are numerous other buildings, viz. temples, cook-houses, &c. and the whole stands within a square enclosure, with walls 20 feet high, and half a mile in extent. In the centre of each side of the square is a large gate; the principal one, facing the east, has a lion couchant on either side; hence it is called the Gate of the Lions. They are very rudely formed, and in point of sculpture are fit associates for the great idol god, Sri Jeo, and his companions. The greater part of the exterior walls of the Temple are covered with representations of numerous Hindoo gods, and other objects of idolatry; the walls of the courts and gates are also similarly ornamented.

In front of the Gate of the Lions is an open space, in the centre of which is a handsome basaltic pillar, and here the bazaar is held; from this there is a good road to the westward, over a fine level piece of ground bordered with numerous shrines, two large tanks or lakes, and a pleasant country. It is along this road that the procession of the cars pass. There are several festivals held during the year; but the Rutt Jattra, or feast of the cars, is the most celebrated, and attracts multitudes from the remotest parts of Hindostan. The idol at this festival is brought to the Gate of the Lions, and placed on a stupendous car, from 40 to 50 feet high, supported on cumbrous wheels. The car has all the tinsel and gaudiness, flags, and other decorations, befitting barbaric grandeur. The idol, a misshapen block of wood, being placed in the car, is also duly clothed and decorated, and the whole being rendered as imposing as possible, crowded with priests and their

satellites, and preceded by richly-caparisoned elephants, bearing flags and tinkling bells, is dragged forward by hundreds of men, women, and children, amid the shouts and yells of a countless multitude, the horrid din of the noisiest and rudest description of music, and forms altogether such a scene of excitement and confusion as is beyond description. In this manner the car rolls heavily over the road above-mentioned, leaving deep indents in its track, and wooing any excited victim to be crushed beneath its wheels: the car proceeds to a distance of a mile and a half, when it stops in front of a pagoda, with enclosures, &c., similar, on a smaller scale, to the one it left. At this pagoda the idol is feasted, and remains some time.

Self-immolation, I was informed, is now of very rare occurrence, and that only three had taken place during the last two years; it was supposed one of these was an accident.

The Car, or Rath, I examined, had sixteen heavy solid wheels, the axletrees of the extreme wheels being the shortest, and gradually increasing in length to the centre axle; the two front and hind wheels were the nearest, and the centre one the farthest apart.

The tax levied by government (Company's) on the pilgrims at this festival is very considerable, being from five to three rupees each, according as they come from the northward or southward, and two rupees eight anas for every week they remain. The priests and their agents are also paid several rupees; the expense of which, with that of purchasing holy food and lodging, is felt as a heavy exaction on the greater number of these poor people, thousands of whom struggle onwards, with only the necessary tax, secreted on some part of their persons, depending for subsistence during their long and weary pilgrimage on the precarious charity of the country through which they have to pass. Hundreds who are unable to raise the required sum, are, by permission of the proper authorities, admitted gratis. Several Hindoo princes maintain hospitals for sick pilgrims, and otherwise contribute to the support of Juggernaut.

The great loss of life attending this festival, which takes place during the sickly season, either in May or June, is sufficiently manifest, the surrounding sands being thickly strewed with human bones. The great scavengers of India, the vulture, adjutant, and crow, the jackal and Parian dog, here feast to satiety. Hence, during the greatest mortality, which, when cholera steps in, is awfully great, the atmosphere is scarcely tainted. A few hours are sufficient to strip a body; ants and other insects, with a scorching sun, quickly complete the skeleton; and the sand, moved by every breeze, in a short time covers the whole; and this home of death exhibits not a trace of the extraordinary scenes so lately enacted.

The Juggernaut festival is also celebrated, but on a very minor scale, at Trincomalee, Madras, near Calcutta, and other parts of India; and it is to be feared that there is very little, if any, abatement, in the enthusiasm connected with this popular superstition, than which a more unintellectual or profligate system, perhaps, never debased the human race. Pooree being the fountain-head of this idolatry, offers a noble field for missionary labours; and a station being established there, may be of incalculable benefit.

Fifteen miles to the eastward of the temple, and at about its distance from the sea, are the ruins of the Kunnareccor, or Black Pagoda. This was formerly a place in much estimation, but having been struck with lightning, was in consequence desecrated. It may be known from seaward by its resemblance to a black building, having a high spiral chimney, such as we often see in our manufacturing towns. On the coast to the westward of the temple, and at the distance of six miles, is the Narsingapatam Pagoda; it is very small, and its white top is just visible above a cluster of trees. Still farther to the westward is the Manikpatam Pagoda.

On leaving this anchorage, we embarked the government proceeds, 4½ lacs of rupees, or £45,000, and sailed for Calcutta.

This coast, although frequently approached by vessels making Calcutta, has not often been minutely described. I have therefore submitted these few remarks, trusting that they may in some cases be found useful.

To anchor nearest Calingapatam River.

The river is to the S.W. of Juggernaut, in lat. 18° 18′ N., and the best anchorage is in 10 fathoms; but if it should be necessary to anchor nearer the shore, bring the south end of the high land to bear N.W. by W.; the flagstaff will then be on with it. With this bearing, a vessel may run into 6 fathoms, 1½ miles from the shore, the sandy point bearing south, and a remarkable detached small hill, W. ½ S., in front of this hill is a village and seven palmyra trees, four in a cluster, and three separate. The point is rocky towards the town, and dangerous under seven fathoms.

H. Davy,
Late Master of H.M.S. Curaçoa.

Notes on Tucacas, in the Gulf of Triste.

From Puerto Cabello to Point Tucacas, the course is N.W. by N.: distance twenty-five miles. Within this space is the Gulf of Triste, the shores of which are low, and generally formed by a sandy beach covered with mangroves; the interior country is formed of ranges of mountains thickly wooded, following the direction of the coast round the Gulf.

The Spaniards, in their survey of the coast, appear to have

neglected this gulf, as no directions are given for its navigation, and ships are cautioned that it should be altogether avoided. The country in its immediate vicinity, to the westward of Puerto Cabello, was, at the time of the Spanish survey, inhabited only by a few Indians, and it did not then, perhaps, appear probable that it would ever become a place of commerce; but the subsequent discovery and working of the Bolivar copper-mines, to which it is the nearest part of the coast, has occasioned its being frequented by many British ships; and the increasing value of the mines renders a correct knowledge of its hydrography an object of great importance.

The Bolivar mines are about sixty miles from the coast: the copper is brought down part of the way by mules, and the remainder by the river Aroa, the depth of water in which varying with the season, regulates the length of the land-carriage. From Aroa it is conveyed to Isla Brava, near Tucacas (a distance of six miles) in a small sloop, and there placed in a building called the Ore-house, until it is shipped for England. The ore thus embarked in the year 1835 amounted to nearly five thousand tons, furnishing cargoes for thirty-three vessels.

There are three cays in the Gulf of Triste, laid down in the Admiralty charts; of these, the situation of the North Cay only is correct, the Middle and South Cays being both placed too far to the southward.

The *North Cay*, which lies N. E. and S. W., is rather less than half a mile in length, and is steep to upon all sides except the north, whence a reef runs out N. E. three-quarters of a mile, and on some parts of which are only two fathoms. It bears N. W. by N. twenty miles from Puerto Cabello, and S. three-quarters E. distant six miles from Point Tucacas. About two miles to the northward of this cay, we discovered a bank suddenly shoaling from 24 to 17, 9, and 6 fathoms, coral bottom; it appeared to be of considerable extent, running N.W. by N. towards Point Tucacas, but we had not time to investigate it sufficiently to determine its shoalest part.

The *Middle Cay* lies N. E. and S.W., rather more than one-third of a mile in length, and is steep to on all sides except the north, whence a reef extends N. E. a quarter of a mile, and which is the only danger to be avoided between it and the North Cay, from which it bears S.W. ½ S. dist. two and a half miles. In the mid-channel, between the Middle and North Cay, there is a depth of 51 fathoms, shoaling gradually to 15 fathoms, within a quarter of a mile of the North Cay, and to 12 and 14 within the same distance of the reef of the Middle Cay.

The *South Cay* is about one-fifth of a mile in length, but has some rocks above water, lying off its north and south points. Those off the south point are steep to, having seven fathoms

within half a cable's length of them, and 12 and 14 fathoms within a quarter of a mile. Its north end bears S. W. ½ S. distant nearly three-quarters of a mile from the Middle Cay, towards which, from this point, a reef extends one-fifth of a mile, having on its outer part two and three-quarters fathoms. About a quarter of a mile N.E. from this reef there is another, two cables' length in extent, and having only three fathoms on its shoalest part, though between it and the South Cay reef there are 12 and 13; there is also a channel between it and the Middle Cay, about a cable and a half in breadth, having 12 and 10 fathoms in its centre. There are 7 fathoms within a ship's length of the south part of Middle Cay.

Isla Brava, off which the ships lie, and embark the copper ore, is the southernmost of a series of low swampy cays, which, covered with mangroves and with rocky points and coral reefs towards the sea, form the north-west coast of the Gulf of Triste. They are separated from the main land by extensive lagoons, which are navigable only by boats. Behind these is a range of mountains of moderate height; which attaining their greatest elevation near the parallel of Isla Brava, slope gradually down towards Point Tucacas. A deep notch in this range bearing N.W. ½ W. from Puerto Cabello, W.N.W. from the North Cay, and N.W. ½ N. from the South Cay, forms an excellent mark for the anchorage, whence it bears N.W.½W.; and some white cliffs, a little to the southward of this notch, in the same range of mountains, when bearing N.W. b W. ½ W. are right over the village of Tucacas.

Punta Brava is the south-east point of Isla Brava, and has a reef above water extending from it to the eastward about a quarter of a mile, which is steep to upon its south side, having four fathoms close to the rocks; but on its eastern side it should not be approached within a quarter of a mile, as a bank runs out from it two cables' length in that direction.

The Ore-house is a white building on the south side of Isla Brava, bearing W. five and three quarter miles from the North Cay, N.W. b N. four and quarter miles from the Middle Cay, and N.W. ½ W. four and a half miles from the South Cay; near this house is a wharf, which having sixteen feet water at its outer end, admits of a vessel lying alongside and loading.

The harbour is formed by an elbow-shaped reef, which extending from Punta Brava in a westerly direction, encloses sufficient space for one ship to moor alongside the wharf in safety. On the elbow of the reef is a staff and vane buoy, in five and a half fathoms; and on the west end a black buoy in three and a half fathoms. From the latter buoy the Ore-house wharf bears north distant sixty fathoms; the depths between them being 20, 22, 24, and 18 feet. From the west side of the wharf a reef extends along the south side of Isla Brava, having six feet on

its outer edge, about half a cable's length from the shore. There is also a rocky coral shoal of nine feet, with the Ore-house bearing N.E. b E. distant a quarter of a mile; the staff and vane buoy E. b N. one-third of a mile. There are five fathoms within half a cable's length to the southward of the reef.

In proceeding towards the anchorage of Isla Brava from the eastward, pass between the North and Middle Cays, and a W. b N. course will lead towards the *Staff and Vane Buoy*, which steer for as soon as it is seen, passing close to the *southward* of it, and then steer so as to pass close to the southward of the black buoy. If no other ship is alongside the wharf, you may let go the anchor when about twenty fathoms to the westward of it, and warp in. The best anchorage in the roads is with the Ore-house bearing north in seven fathoms.

From Boca Aroa to Tucacas, the soundings decrease regularly towards the shore, having three fathoms about three quarters of a mile from the beach. But to the northward of Punta Brava the soundings are very irregular, there being in many places twelve fathoms close to the reefs, and again spots of five and six fathoms at upwards of a mile from the shore. When a ship is coming in, a flag is hoisted on the Ore-house by day, and a light by night.

The village of Tucacas is one mile and a quarter from the Ore-house. It is built on a sandy plain, which was formerly covered with mangroves, and is nearly surrounded by swamps and lagoons. The inhabitants obtain their supplies from Boca Aroa. The village consists chiefly of Indian huts, but there are a few wooden houses belonging to the officers of the Mining Association. Vessels of eight feet water can go close up to the wharf; but even these require a pilot, as the channel is impeded by several shoals.

Boca Aroa, off which place ships formerly anchored and took in their cargoes, was found to be very inconvenient on account of the heavy swell that frequently prevails there. There is a bar across the mouth of the river, on which there is a considerable surf. The ore is embarked in iron flat-bottomed boats, drawing only fourteen inches water when loaded, put into a sloop, and taken into Isla Brava.

In the Gulf of Triste there is no fresh water to be obtained to the northward of the river Aroa; Tucacas is supplied from it, and the river Piclass of the charts is merely an open into a salt-water lagoon.

The winds that prevail in the gulf are alternate land and sea breezes, the sea breeze being the trade-wind, prevailing from N. to S.E., which, when it dies away, is, after a short interval of calm, succeeded by the land wind from S. to W.S.W. But the times when this change takes place vary daily, and cannot be depended on; the general rule is, that the sea breeze commences at 10 in the forenoon, and lasts till sunset; and the land wind from 10 p.m.

till eight in the morning; but it frequently happens that the sea breeze blows all night, and in that case there will be calms and light (land) winds till the afternoon of the next day.

The current, when setting to the westward in the offing, is, by the natural formation of the Gulf, forced out to the northward between the cays and the main: therefore, if from the strength of the sea breeze, or from any other reason, it is suspected that the current is setting in that direction, it would be advisable for a ship bound to Puerto Cabello to work up to the south point of the North Cay before stretching across.

The Ore-house on Isla Brava is in lat. 10° 46′ 15″ N. and lon. 68° 22′ W.; its meridian distance from Puerto Cabello being 0h. 1m. 8s.; the variation is 5° 40′ E.; rise of tide, three feet.

As it appeared probable that we should frequently have to visit this port, and as no plan of it previously existed, an eye-sketch was made, in which the soundings in the track of the ship were laid down. Upon our second visit, the harbour where the ships lie was surveyed, and the soundings put in to the southward of Isla Brava. On our third visit, the reefs adjoining the Cays were sounded, and the bearings of the latter from each other, and from the principal points, were obtained. Our stay on each visit was very uncertain, and we had hitherto been anxious only to acquire such information as would enable us, with the knowledge we already possessed, to navigate the Gulf in safety. But now having taken a great number of cross-bearings and soundings, it was necessary to measure a base, to render the plan complete. And at first it appeared that the beach connecting Aroa with Tucacas would be the most proper for that purpose; but on examination it was found so rocky, and so much impeded by trunks of trees, brushwood, &c., as to present insurmountable obstacles to our limited time and means. The difference of latitude between the Ore-house and a part of the beach near Aroa, due south of it, would have answered very well; but it is always difficult, and frequently impossible, to land at Aroa, and we could not convey the instruments round by land. The south point of the South Cay was therefore adopted, and its latitude determined by observations with the artificial horizon, on both sides of the meridian, to be 10° 42′ 56″ N., and its bearing from the Ore-house S. 47° E., the variation of the compass at the same time being found to be 5° 40′ E. Both this bearing and variation being verified by observations made at the Ore-house, they were assumed to be very nearly correct: the latitude of the Ore-house, by the same sextant and observer, being found to be 10° 46′ 15″; a difference of latitude between it and the South Cay of 3′.316 was obtained, and from these data the plan was constructed.

The harbour of Tucacas was regularly surveyed from Punta Brava to the south-west point of Isla Brava, but to the northward

of Punta Brava, a mere outline of the land is put in, the principal points being laid down from intersected bearings of that point and the North Cay. The Six-fathom bank to the northward of the North Cay, laid down in the plan, was discovered when working in with a land wind, but there was not time to ascertain its extent, or shoalest part. On questioning the master of a vessel who had been trading between this port and Curaçoa many years, he declared he knew of no danger in that direction, though he had frequently beat out between the North Cay and the main; but it would be advisable for ships to give it a berth, as all the reefs in the Gulf are of coral, and appear to be rapidly on the increase.

Some time after the plan was finished, it was found that, according to the engineer employed by the Mining Association, the distance from Aroa to the Ore-house was 5½ miles; and as this agrees with our observations, it is to be hoped that no error of consequence remains.

HENRY J. ENNIS, Act. Mast. H.M.S. Larne.

TIME SIGNALS FOR CHRONOMETERS.

To the Editor of the Nautical Magazine.

H.M.S. Thalia, Simon's Bay, 2d April, 1836.

SIR,—Having seen an account of the time-ball at St. Helena in your number for November, 1835, containing also some allusions to myself, I have taken the liberty of enclosing to you my correspondence with my Lords Commissioners of the Admiralty upon the subject.

I had pointed out the advantages to be derived from the plan for communicating time by means of telegraphs so far back as 1818, in my remark-book transmitted to the Admiralty when in command of the Eurydice, at that time on the Cape and St. Helena station. Sir Jahl. Brenton was then naval commissioner at the Cape, and an extract from a letter of his, dated 15th November, 1833, to Mrs. Wauchope, will, I think, establish my prior claim to the invention, before the Rev. Mr. Fallows, (who, it appears, was astronomer at the Cape in 1820,) or Captain William Owen, R.N. In reference to the chronometer signal, Sir Jahl. Brenton says, "I regret very much that it has not been called by an appropriate name. I feel quite convinced, at the same time, that the originator is well known, and will become more and more so, as the utility of the measure is fully understood and appreciated. I beg that Captain Wauchope will not hesitate to use my name whenever he thinks it may be of use; he can state *positively*, that he did mention the idea of such a signal to me at the Cape many years before its adoption; and I believe he can also say, that it was adopted in consequence of an interview with

Sir Edward Owen, when a lord of the Admiralty, to whom, I think, I mentioned him by letter as the originator of the plan in question."

I not only mentioned my views at that time to Sir Jahl. Brenton, but spoke freely upon the subject to all my brother officers, pointing out the advantage which shipping in general would derive from the chronometer signal being generally adopted; but I had no conception at that time how many difficulties I should have to contend with, before I could obtain a public trial of the plan in question. The Eurydice was paid off in 1819, and many things after this occurring to occupy me, it was not till 1824, when, finding that nothing had been done by any one that I knew of upon the subject, I again turned my mind to the importance of getting the chronometer signal generally established. You will find enclosed my letter to the Admiralty, and their lordships' letter of thanks to me, signed by Mr. Barrow, in which he says, "I am commanded by my Lords Commissioners of the Admiralty to convey to you their lordships' thanks for your communication."

With regard to the mode of displaying the ball, much must depend upon the situation in which it may be placed; and as to the various kinds of machinery which may be employed for hoisting and dropping it, this may be varied *ad infinitum*. What I contend for is, having originated the system of giving the time by means of a signal for ascertaining the rates of chronometers; and having perseveringly (from conviction of its utility) urged it forward, ever since 1818 to its general adoption.

In 1830, as soon as the experiment had been satisfactorily made at Portsmouth, I laid the plan before the French and American ambassadors in London, and urged its adoption by their respective governments. I have by me the American ambassador's letter in reply, which is highly satisfactory. In Edinburgh and Liverpool I have also done my best to get it established, both for the use of shipping, and also for regulating the time in the towns, which is often of so much consequence in mercantile concerns, particularly as to the starting of coaches, &c. You will observe by the printed correspondence I enclose, that it was my letter to their lordships which was laid before the astronomer royal, that induced the Admiralty to cause the time-ball to be placed at Greenwich Observatory.

Having now made you acquainted with my claims, may I beg that you will in justice do me the favour to publish them in the next number of your valuable magazine, as the article in No. 45 makes it appear that I only took up the plan at third hand.

I am, Sir,
Your obedient servant,
W. Wauchope, Capt. R. N.

Correspondence referred to in the foregoing.

Admiralty Office, 24th December, 1824.

SIR,—With reference to your letter of the 20th instant, submitting a plan for regulating the rates of chronometers, I am commanded by my Lords Commissioners of the Admiralty to convey to you their lordships' thanks for your communication. I am, Sir, &c.

To Captain Wauchope, R.N. J. BARROW.

Easter Duddingstone, 22d June, 1830.

SIR,—May I request that you will be pleased to lay before their lordships the anxiety I feel to ascertain whether the plan for finding the rates of chronometers, which I had the honour of laying before their lordships, and which is at present on trial at Portsmouth, has met with their lordships' approbation; and if so, whether I may be permitted to endeavour to get the signal established upon the coasts of France and America, as the chief utility of the plan must depend upon its being generally adopted.

Should their lordships favour me with their approbation, I can desire no higher honour for myself than the expression of that approbation.

I have the honour to be, &c.

To J. W. Croker, Esq. R. WAUCHOPE, Captain.
Secretary to the Admiralty.

Admiralty Office, 6th July, 1830.

SIR,—In return to your letter of the 22d ultimo, I am commanded by my Lords Commissioners of the Admiralty to acquaint you, that the plan adopted at Portsmouth for finding the rates of chronometers, after your suggestion, appears, by a report which their lordships have received, to have succeeded; but with regard to your proposal of establishing signal stations on the continents of France and America, their lordships cannot interfere. I am, Sir, &c.

To Captain Wauchope, R.N. J. BARROW.

Copy of a Letter from Admiral Adam.

Charlotte-Square, 13th February, 1830.

MY DEAR WAUCHOPE,—I am much obliged to you for sending me your plan for instantaneous signals.

It appears to me that the scheme you have suggested is admirably adapted for the purpose, and that so correct and public a method of making known to ships the *exact Greenwich time* would be attended with the greatest advantage to navigation in general. I hope, therefore, that it will be adopted on the most extensive scale. Yours, &c.

To Captain Wauchope. R.N. CHAS. ADAM.

Copy of a Letter to the Admiralty.

London, 17th June, 1833.

SIR,—Their lordships having been pleased to approve of, and to adopt, my plan for finding the rates of chronometers by instantaneous signal; a copy of their lordships' letter to me on the subject I have the honour to enclose. The importance of having a similar signal established at Greenwich Observatory having been suggested to me by Sir Jahl. Brenton, I beg to state, that I have examined, for this purpose, the East and West India Exportation Docks and Canal, when nearly low water; in all of which situations the signal could be most distinctly seen; in many of the ships it could be seen from the cabin windows. There were last week nearly fifty sail of shipping in the East India

Dock fitting for sea, and at least four hundred sail in the West India Docks and Canal. * * * *

I have visited Greenwich Observatory, and find from Mr. Taylor, that a signal-post could be erected with very little trouble, and the expense, I should conceive, would not exceed £10, exclusive of the flagstaff.

If their lordships still approve of my plan for ascertaining the rates of chronometers by signal, I need not further insist upon the importance of Greenwich Observatory as a signal station, from the immense number of shipping that will be benefited, as well as the facilities which will attend its erection there. I have to request you will be pleased to lay the above before their lordships, for their consideration. I am, Sir, &c.

R. WAUCHOPE, Captain, R.N.

To Capt. the Hon. George Elliot, &c. &c. &c.
Secretary to the Admiralty.

Copy of a Letter from the Admiralty.

Admiralty, 20th June, 1833.

SIR,—Having laid before my Lords Commissioners of the Admiralty your letter of the 17th instant, I am commanded by their lordships to acquaint you, that *your plan* for the ascertaining the rates of chronometers by an instantaneous signal has been referred to the astronomer royal. I am, Sir, &c.

To Captain Wauchope, J. BARROW.
16, St. George-street, Westminster.

With the above letters we have received the following certificate:—

Greenwich Hospital, 18th June, 1836.

SIR,—I beg leave to certify, that the statement in Captain Wauchope's letter of the 2d April, 1836, respecting his being the originator of the instantaneous signal for the regulation of the chronometers, is perfectly correct; that he did communicate his plan to me at the Cape of Good Hope in 1818, which I believe to be the first suggestion of the kind.

I am, Sir, your obedient servant,
JAHLEEL BRENTON,
Rear Admiral and Lieut.-Governor.

We have a great horror of detracting from the merits of any one; and having laid the foregoing documents before our readers, we need scarcely add, that we find the proposal alluded to by Captain Wauchope in his remarks for the Eurydice. The plan there proposed of giving the instant of time, is by the observer with the sextant and artificial horizon on shore, causing at the instant of observation the dropping of a shutter on its hinges, the instant of its fall being noted on board as shewn by the time-keeper. We need not stay to offer any remarks on this method, our purpose now is with regard to priority of invention. On this point, sufficient has been advanced by Captain Wauchope, not only to establish the fact of his plan having been proposed at the time he states, but to be the same in principle as the system adopted at Portsmouth and Greenwich, although at the latter place the means of carrying the method into effect are most superior, and, as we have before remarked, "combine elegance

with durability, on truly scientific principles." The very ingenious contrivance at Greenwich, described in our last volume, p. 584, is the work of other hands; but Captain Wauchope's claim appears to be, the right of being considered the originator of the system at present adopted,—a claim to which he is no doubt entitled, and, in addition thereto, the credit due to the perseverance with which he pursued his method until it was established; although we would not be supposed to assert, that the communication of an instant of time by signal, for a similar purpose, was never before adopted.—ED. N. M.

NAUTICAL PATENTS AND PATENTEES. THEIR BANE AND ANTIDOTE.

SIR.—In addressing you on the subject of inventions, I shall have to allude to some of great merit; and as none of the parties interested in them can form the most distant idea of the author of this letter, more need not be said to shew that I have no interested motive in writing it. I shall confine myself to such inventions only as have reference to our naval service, and the reception which the propositions of ingenious men formerly met with from their "affectionate friends."*

I shall begin with the most important part of a ship's equipment—her ground tackle; and before I proceed further, it may be necessary here to say, that I have the information upon which I found the following statements from sources so unquestionable, as to defy contradiction.

As respects the ground tackle of H.M. ships, I would beg first to refer to a statement in your 3d volume, page 330, containing a detail of occurrences on board the Success frigate, on the occasion of her getting on shore at Swan River. It does not appear to have been very bad weather when these occurrences took place,—in fact, it was not so. The Success, it will appear, on that occasion broke *all* her anchors and cables! Either the one or the other (that is, either the anchors or cables) gave way in every direction! Her two bower-chains appear to have parted almost instantly, a strain came on them, and, from the account as it reads, no excuse can be seen for it. If when she swung off the rocks upon which she first touched, her bowers had held her, and as *one alone ought to have done*, I think there appears every reason to conclude that the subsequent disasters which befell this ship, and the enormous expenses occasioned thereby, would have been avoided. About three years ago, in the Downs, I saw *two British men of war adrift*, both said to have broken their cables, (either anchor or cable certainly broke;) neither the French men-of-war, (the combined North Sea squadron were then lying in the

* A term formerly used, but now obsolete in official correspondence.

Downs,) nor the merchant ships suffered any thing on this occasion!—this *peculiarity did not formerly belong* to British men-of war. I have been much on board our ships of war on foreign stations, and I never, for many years past, recollect an instance, when in conversation it was not plainly stated that the breaking of anchors and cables were common occurrences. I will venture upon an opinion—it is only opinion—but I will put it in such a way that it may be contradicted, if it can be so; it is an opinion that will startle the public, and perhaps the naval administration; and well it may, especially after reading the subsequent part of this letter, which shews that such things need not have been; and it is this, that if a reference be made to all the masters employed in the navy for the last ten years, they will (probably every one of them, but assuredly nearly so) answer in the affirmative these questions:—Have you witnessed the breaking of an iron cable?—How many anchors have been broken in the ships you have served in?—Do you think, from what you have seen, that in the instances in which iron cables have given way, new hempen ones would have stood? Is it your opinion, that, upon the whole, more iron cables are broken than was formerly the case with new hempen ones? It is my perfect conviction that the result of these inquiries would astound the nautical world; and no wonder, for the means of avoiding all this was proposed to the Navy Board:—and what steps did our "affectionate friends" take? None whatever, but to shut their eyes to the truth on this occasion, as on a variety of others. Was not the result an enormous loss of public money, besides endangering the safety of ships and the lives of seamen?

I will now detail the progress of some few improvements in the principal articles of naval equipment, (especially ground tackle,) through this board, and shew how all the advantages that they offered were either rendered useless, or altogether rejected, or, what is worse, adopted so as to endanger the public service.

Many years have now elapsed since an improvement in iron cables was proposed to the navy board. The attention of the Board was particularly drawn to a species of iron Cable, *then patronized* by the same board; upon which, the proposed one was said to be a manifest improvement, and which it was offered to prove. Observe, that *subsequently* to this offer, and *before* the improvement was adopted, a sum perhaps little short of *one hundred thousand pounds* of the public money was paid for the supply of the *patronized* but *defective* iron cable—a cable which the commissioners ought to have known was of the very worst and most absurd description. The proposed improvement was, however, at length looked into; and the consequence was, (what one moment's honest consideration might have convinced any body it could not but be,) that it was adopted, and the vast sums paid

for the old one next to thrown away, it being determined *unfit for use at sea.*

That the new cable proposed had transcendent merits, may readily be credited: and any of your readers who may be inclined to investigate this affair throughout, are referred to a *scientific demonstration*, that such was in fact the truth, contained in the Philosophical Magazine at the period alluded to, more than 20 years ago. No one can read the article on this subject without being convinced that the invention described is *perfection*, and defies all *improvement.*

Will it be credited, however, in the face of the mathematical deductions, the absolute and positive proof of the merits of this proposed cable, that the navy office no sooner took the adoption of it in hand, than *an alteration in its form* was ordered from the perfect form described in the Philosophical Magazine, to that of the old-fashioned round-ended, or oval link, and which form of link has continued in use to the *present time.* Let a really unprejudiced and scientific man look at this, and then say, whether, or not, there can be any wonder that such cables are breaking *every day.*

Coupled with this proceeding was another yet more extraordinary, namely, the adoption of a scale as to size, which is at variance with the results of experiments made upon hempen cables and iron, *of the very best form of link.* A scale was adopted, and continues in use, of iron for rope, which is not sufficient even with the very best form of link. How, then, can it be a matter of surprise, that with their form very considerably deteriorated, (and that being too small, even if of the best form,) iron cables should be constantly breaking? To me the only surprise is, that these accidents have not been attended with some disastrous loss of ships and lives, such as would have drawn public attention to the subject in a way that could not be misunderstood.

I might say much more on this subject, but let us pass to another.

The next important article of a ship's equipment is, her Anchor: that article, which, of all others, is esteemed by a sailor as the only *perfect* thing belonging to a ship! Alas, how deceptive appearances are! An anchor, certainly, to a mere sailor, does look very perfect—nothing can be more difficult than to find fault with it upon mere inspection. It is, however, *notoriously, a piece of deception*—and there perhaps is nothing whatever about a ship so uniformly defective. No question can be entertained, that, except in very small anchors, the work, in joining the arms to the shank, is not only defective in itself, but that is not the worst, for the process of putting on these arms, invariably burns and destroys the tenacity of the arms themselves, as well as the

shank, for a certain distance from the crown; and this to such a degree, that, bad as the part intended to be joined is, the usual place where anchors break may be stated to be found at those parts so injured.

The same parties, I believe, who proposed the perfect cable, bethought themselves of a remedy for this, of so simple a nature, that no sophistry could possibly find fault with it; and they made a number of anchors, for the merchant service, on their plan—why discontinued, I don't know; but I suppose from being undersold by an inferior anchor. The method was, simply, by riveting the shank to the arms, which were made in one piece, and the shank introduced through and clinched. This, as far as the mere joining of the parts together, (and in which, according to the present plan, consists all the mischief,) was quite perfect. What reception did this meet with from the "affectionate friends" of improvement at the navy office? It was rejected altogether. The fact is, they had adopted another plan of anchor-making, a plan of one of their own officers. This *adopted and patronized* plan was one of Mr. Perring's (then of Plymouth Yard)—it is one attended with great expense; and that it does not effect the end in view, the continual breaking of anchors in the service sufficiently proves.*

Now there can be no doubt, that the two inventions, above referred to, contained the means of effectually holding a ship, as far as strength is concerned; and, that they have been, the one perverted, and the other rejected, is equally clear.

I may here refer to a further improvement in anchors, which does not embrace improved manufacture, (at least, it is not in this view that I am now noticing them,) but a proposition of doing away the palm, either altogether, or much so. The less palm an anchor has, the better; and this part of the anchor is only retained by the patentee in a very small form, for the difficulty of otherwise fishing it. This small-palmed anchor, though adopted in some hundreds of merchant-ships, and bearing the most full testimonials of its merits, has not yet found its way into use on board H. M. ships, though I think the merits of it very clear, and that in holding-properties it is a very important improvement: the old navy board, however, did not seem to think so.

New Pumps have also been proposed to "their honors." More than one, I will venture to state, so simple, so efficacious, so superior to any thing previously in use as a substitute for the old-fashioned

* In reflecting upon Mr. Perring's anchors, let me do him the justice to notice the great merit that I think is due to him for his pamphlet, circulated a good many years back (three or four and twenty, I think) recommending the building ships under cover; *he accelerated this practice, I have no doubt.* I consider it much to be regretted that the other subject, treated of in the same pamphlet, had not the like good effects. I allude to the substitution of copper bolts for treenails.

chain-pump, that the rejection of them is hard to be accounted for. It is really astonishing, in these days, that such a remnant of antiquity as the chain-pump should be found on board our ships-of-war; it is a clumsy imitation of the water-wheels of Egypt—not half so efficacious, and continually breaking. They appear to have broken on board H. M. Ship Pique when she was lately in distress, and are worked with a degree of labour *truly frightful.* I believe that the pumps to which I allude will deliver more water than a chain-pump, and with the labour that would be required to turn round the machinery of the latter, without lifting any water at all!! and it strikes me that the saving in cost would be very great.

There has lately been an improved Nail offered for the use of the navy—a fluted nail, spike, and bolt; if there be any demerit in this invention, it consists in the nail, or bolt, not being *easily got out* of the wood into which it is driven; a quality, when it is considered what a nail or bolt is intended to effect, that would be difficult to convert into an objection. I have heard that this improvement has been lately rejected; upon which I will simply state my belief that Captain Symonds has never seen the nail in question. In my last I alluded to the progress of Mr. Lang's invaluable plans; also to the "purifying of sea-water," the progress of which remains to be seen.

Surely something has been grossly wrong in the management of our naval affairs on shore, that admitted the possibility of such misapplication of proffered advantages as I have described; and it almost seems that yet something requires to be done, to avoid a recurrence of such abuses; abuses which are causing enormous and incalculable losses to the public, even at this present day; abuses, which render inefficient our ships of war, and which, great as is the loss occasioned thereby in mere money, that loss sinks into insignificance when compared to what *the consequences may be* in the loss of lives. As these abuses may equally be supposed to extend to the fighting department of a ship, it is evident that an abuse, similar to what I have detailed in respect to the ground tackle, may exist in the great guns, or other material articles of warfare; by which means we may one day see the national honour tarnished.

The formation of a board, to investigate the merits of inventions, has often been talked of; and I believe something of the kind has lately been tried without success. Something, however, of this kind is absolutely due to the talents and ingenuity of those who devote their attention to subjects which, however visionary, it must be confessed, the very great bulk of them are, yet some are good, and all have a tendency to good; for there is perhaps hardly any invention, however practically useless, that does not contain something in it that tends to ultimate utility—few from which some

knowledge may not be gained. Moreover, there are no persons so quick-sighted as those inventors, *in pointing out the defects of existing articles*, upon which they fancy they are improving; the noting of which would form no trifling advantage to be gained by an efficient suprintendence of these matters.

There are many hundreds of ingenious men always existing, (many of them hardly existing, many starving,) who have their heads full of schemes, the end of which is their country's good, and the certain making of their own fortunes. These, of all men in the world, I am inclined to think, are of that class the most to be commiserated. All advice or remonstrance is vain, I am well aware, with them; they beg or borrow enough to take out their patent, which done, no state can be conceived more pitiable than that in which they are cast. No doubt that, out of one hundred, ninety and nine ought never to have gone the length of incurring the expense of the patent. For all purposes of profit, or public use, their notions are mere abortions; and perhaps out of the ten in a thousand, which I have supposed may have merit, there is not more than *one* that will ever benefit the inventor, the rest bringing him only disappointment, sorrow, and ruin.*

It is to prevent, as much as possible, the dreadful effects that attend the pursuit of visions such as these, as well as to aid the public service, that I think some means should be devised to cure the evil as much as possible. Few perhaps have thought of the wretched state of the *many hundreds* of families lingering for years, and starving upon the hopes of benefit ultimately arising from an invention, which the possessor of might as well have been told in the first instance by an efficient officer, "was not of sufficient public utility to be adopted." Without the exertion of much labour of intellect, this person might easily dispose of *a score per day* of applications, which must of necessity be rejected ultimately; and which, therefore, ought to be so at once; affording the poor disappointed applicant a broad hint to attend to something more useful. I am, of course, quite aware that nothing will satisfy these ingenious people, short of going the whole length of their schemes; but a plan that would give a speedy and prompt answer to all this class of aspiring improvers would be an act of great humanity and consideration to them, and the families depending upon them. Should this not satisfy *them*, it would be enough for the public, who would not fail to see

* Mrs. Trollope, in her amusing observations on "the Domestic Manners of the Americans," tells us, that in the United States is a museum, or repertory, wherein are collected all the models, or plans, of inventions of that country; and, on inquiry, she was told that about *one* in a thousand was found useful. Now, Jonathan is every jot as much a *practical* man as his relatives in England, and, therefore, we have no great right to suppose that a much greater proportion of our schemes are useful than his.

in such an arrangement an act of great justice to a class of men, who, however visionary, are, generally speaking, men of great sensibility, and considerable, though perhaps misapplied, talent. Many of these persons would, by such means, be saved from ruin and desperation, and, probably, live to benefit mankind by more mature productions of their talents.

What has hitherto been the course which the affairs of these unfortunates have taken? They have applied to the navy board, sometimes to the admiralty, or to both. At neither of these places was it the special business of any one to take the least notice of such applications. No answer has been given, though the admiralty has more frequently shewn the courtesy of returning one. After months of expectation, the same course was repeated, and this, probably, many times. At length interest is made, either with principals themselves, or oftener with secretaries or clerks, and perhaps after twelve or eighteen months (often more) of this sort of delay, if the exertions of the projector were, through dint of the means I have hinted at, so far successful as to get his proposals considered, he would most probably be told that his invention was referred to the "dock-yard officers," to report on.

Now comes another set of gentry, to propitiate and flatter: here there are a thousand interests to reconcile; the ordeal to undergo here is, indeed, tremendous; a host of "scientific men," of all departments, for be it observed, that the "heads" of all the mechanical arts, with the addition even of the "storekeepers," have to report upon the matter. Perhaps it may be one of such a nature, that nobody but experienced seamen *can know* any thing about; and, therefore, as the only person amongst them, who must of necessity have been at sea, is the master attendant, he is the only one who knows any thing about the subject to be reported on. Now, do not let it be supposed that I would depreciate the abilities of the "dock-yard officers." In their several spheres, they are excellent, useful, and clever men. On subjects of the mechanical arts, their opinion should have the greatest weight; and when from the ship-building department, such men as Sir Robert Seppings and many former surveyors of the navy, have been produced, whose talents have been acknowledged and rewarded by the public; it would be folly to say that amongst "dock-yard officers" there are not a great many able men. But the old practice of the navy board submitting to the "principal officers" every proposition for improvements, to report on, has given to them such a seeming pretension to science, such universal knowledge on almost every possible subject, that they are considered, to a man, scientific; and the consequence is, that every one of them either is a very ingenious man himself, and has plans of his own upon, perhaps, every possible subject connected with the navy, or, if his talents do not lie in producing valuable inventions himself, he has in all probability

undertaken the patronising of the plans of some friend or acquaintance.

When it is considered that these gentlemen are always (the master attendant being excepted when speaking *en masse*) confined from their youth to a certain routine of dock-yard duty; men, generally, of limited education, and full of all sorts of professional prejudices, and without knowing any thing practically beyond the precincts of the yard; and when it is considered that to these officers are (or were) continually referred subjects for judgment, requiring a degree of learning they can have no pretensions to, or practice of which they are also deficient; it is no wonder that they assume that high tone which they are well known to do; and it will still be less matter of surprise if "my poor ingenious inventor" falls to the ground when his proposition gets into the hands of "the principal officers." The report, however, is at length returned to the navy board, most probably with suggestions for alterations, if not, more probably still, condemned altogether. In the first case, the whole process has to be gone over again!! Taking, however, the most favourable view, the new or improved article may be recommended *for trial*. (I apprehend these principal officers never had sufficient confidence in their own judgment, to decide upon any thing in so unqualified a manner as to recommend it for adoption.) The poor inventor thus perhaps gets his invention ordered for trial, and he is required to furnish a trifling number of articles of whatever his invention may consist. The article is issued to some of H. M. ships, and, in about three years after, my poor friend *may* expect to know whether or not his dear cherished vision is acknowledged to be of use.

(To be concluded in our next.)

THE VOYAGE OF COLUMBUS.

[The following Poem, on the Discovery of America by Columbus, being the production of a youth fourteen years of age, may be considered to possess considerable merit. We understand that the young gentleman is the son of Captain H. H. Christian, lately commander-in-chief on the African station. It was recited at the second annual meeting of the Royal Naval School for 1836, with deserved applause, and gained a prize from the Head Master.]

No transient ripple plays along the deep,
Whose every wave is now entranced in sleep.
The last pale glimmering of the waning light,
Shines now but faintly thro' the shades of night;
Tinges with streaks of gold the liquid plain,
And paints the surface of the placid main.

A bark is seen—but not where mortal eye
Hath traced before the brightness of yon sky.
Far, far from every shore—no track to guide;
No path to lead her o'er the boundless tide;
Alone she lies—no rising tempest's blast
Swells her white sails and bends her pliant mast:
Her gorgeous standard droops its sinking head,
Its folds no longer in the breezes spread.
While o'er the bark a death-like silence reigns,
Th' adventurous chieftain on her deck remains.

High on the stern, beside the helm he stood,
His lowering brow proclaimed a thoughtful mood.
His pallid features bore the marks of care,
And hope, lit up by anguish, settled there.
His eyes upraised the azure sky surveyed,
Where the bright stars their silver light displayed.
So fair a scene calmed not his anxious heart,
To him its beauty could no joy impart.
His crew might rise—might homeward turn the prow,
And tear the laurel from their chieftain's brow.
Hope painted to his thoughts to colours bright,
The unknown regions rising in his sight.
The Queen of night now graced the cloudless sky,
And shone resplendent in the vaults on high.
Around her orb the stars their splendour threw,
And tinged the waters with a silver hue.
The waves beneath with borrowed brightness shone,
While proud Columbus paced his deck alone.
He paus'd awhile—and 'gainst the bulwarks leant,
His inward thoughts on distant regions bent.
He mused—he hoped—no fear his spirit swayed,
His lofty mien no coward heart betrayed.
His manly spirit unsubdued by care,
Thus from his bosom breathed its silent prayer:—
" Our Father! God! to whom all wants are known,
" Who rul'st all nature from thy heavenly throne:
" Let thy far-ruling hand my toil befriend,
" And let thy mercy on my cares attend.
" Ah! guide my vessel o'er this raging main,
" Where nought but storms and angry tempests reign;
" Where waves on waves in wild confusion rise,
" And dash their spray against the cloudy skies.
" These have I dared, and sought upon the wave
" A seaman's glory or a seaman's grave.
" Then let success my toilsome labours crown,
" And gild my efforts with a just renown."

In silence thus the chief his prayer preferred :
Indulgent heaven his noble wishes heard.
Long had her arm his gallant vessel led,
And guardian saints still hovered o'er his head.

(Chorus.)

Spirits hail thee, chieftain bold !
Hie thee o'er the western wave ;
Thou hast heard from legends old,
Of shores which trackless waters lave.

(First Sea Nymph.)

Trackless no more—
For the breeze shall waft,
To the paynim shore,
Thy well-built craft :
And a sprite shall attend thee,
And guard thee, and send thee
Where the mien and the skill of the seamen of Spain
Shall awe the dark tribes who roam and who reign
Monarchs of woods and islets green,
Which white man's eye ne'er yet hath seen :
And armadas shall ride
In their might and their pride,
Majestic and free, on the bosom of the main.

(Second Sea Nymph.)

Armada ! thy name calls me forth from the deep,—
Armada ! thy name wakes a giant from sleep ;
For the spirit of Britain approaches to cheer,
This lord of the waves, in his gallant career.
" Columbus, all hail !—for thy far-seeing mind
" Reads the page of the future—thou art destined to find
" A treasure, whose value ere long shall surprise,
" By its wealth and its beauty, both the ancient and wise :
" Where Spain hath led,
" The Briton shall tread ;
" This day, O Columbus, a WORLD is thy prize !"

But now the glimmerings of approaching morn
The curling billows of the sea adorn.
The sun arises proudly in the sky,
And bursts majestic on the seaman's eye.
The wished-for breezes sweep along the main,
Which now no more presents a level plain.
The joyous crew unfurl the swelling sails,
And eager haste to catch the coming gales.
The sails are spread upon the pliant mast,
Which yielding, bends before the rising blast.

Swift as the hound, when first the stag he views,
With eager steps his destin'd prey pursues;
So through the wave the gallant vessel flies,
And cleaves the billows which around her rise.
Within the bark, in groups, the sailors stand,
Their eyes still seek the wish'd-for signs of land.
But ah! no sign now meets their ardent sight,
Save where some land-bird wheels its treacherous flight.
The raging billows, as beneath they flow,
No floating shrub, no passing sea-weeds show.
Despair now rules their hearts—they curse the hour,
When first they trusted in their chieftain's power.
" Shall we, brave comrades, thus our chief obey,
" And bend submissive to a tyrant's sway?
" Where are the foreign lands—the promis'd spoil,
" Which first allured us from our native soil.
" All these are gone—then why consent to brave,
" The unseen dangers of the stormy wave?
" Why chase a phantom, which delusive flies,
" And seek for lands, which ne'er will meet our eyes?
" No more deluded, o'er the billows roam,
" But seek, once more, the sweet delights of home."

They said no more—the chief in silence stands,
He hears, and thus confronts his dastard bands.
" Think on the glories which success will send,
" To crown our labours with a joyful end.
" For soon the winds, which o'er the waters sweep,
" And curl the billows of the angry deep,
" Will waft this vessel to some friendly isle,
" Where heav'n, once more, will on our fortunes smile.
" Then rise! Be men! still onward persevere,
" And just success will soon your labours cheer."

The sun now sinks apace,—the night appears,
But yet no land their sinking spirits cheers.
The rugged seaman heaves a mournful sigh,
When still his eyes behold a shoreless sky.
The sun had set, and all around was dark,
But on, still on, they urged the gallant bark.
The gale increased, the billows round her raged,
And winds with waves an awful contest waged.
No moon appeared; for many a misty cloud
Conceal'd its brightness with a murky shroud.
Oft from on high the rolling thunders clashed,
And forked lightnings in the darkness flashed.
Scarce could the ropes the swelling sails restrain,
Which urged the vessel swiftly o'er the main.

Still with the watch their generous chieftain stayed,
Seldom had sleep his wakeful eyelids swayed.
Unmoved he viewed the vivid lightnings roll,
While their bright flashes spread from pole to pole.
While o'er the waves he cast his anxious eyes,
And strove to pierce the gloom which wrapped the skies.
Th' astonished chief beheld a distant light,
Which faintly twinkled through the shades of night.
This sight Columbus hastened to explore,
And fondly hoped he neared some friendly shore.
The storm is hushed—the clouds are past away,
Still o'er the waves the vessel holds her way.
A cry is heard—a thrilling joyous cry.
That LAND—the long-sought Western LAND is nigh.

No rugged cliffs uprear their heads on high,
No barren rocks, whose summits mate the sky;
But all was green—there nature seemed to smile,
Her fairest beauties deck'd the verdant isle.
Here summer's foliage covers all the hills,
And murmuring cascades swell the flowing rills.
The canvass furl'd, with haste the sailors lower,
And man the boats to bear them to the shore.
The well-plied oars asunder cleave the tide,
And through the waves the vessels gently glide.
They reach the LAND—on shore they quickly bound,
And all the hills with lengthen'd cheers resound.

Columbia! No—another robb'd thy fame,
And to *thy* land, Columbus, gave *his* name.
Henceforth, America, thy star shall rise,
Thy radiant splendour light the Western skies.
Thy realms no more a foreign yoke obey,—
No longer bend beneath an iron sway.
Spain now no more upon thine offspring wars,
Nor from thy mines its golden treasure draws.
But freedom there her banner has unfurled,
And reigns triumphant o'er the Western world.
Thy regions still continued treasures pour,
Their riches rival India's boasted store.
Thy fleets unnumbered o'er the ocean sweep,
Thy freighted argosies oppress the deep.
Thy people, glorious in distinction grown,
Not Spain, but BRITAIN, as their mother own.

June, 1836. G. CHRISTIAN—R. N. S.

MARINE INSURANCE,—REPLY OF MR. BALLINGALL.

To the Editor of the Nautical Magazine.

Kirkcaldy, April, 1826.

SIR,—I am happy to find your correspondent Φ, on merchant shipping, in last month's Nautical, inasmuch as it proves that, notwithstanding the determined efforts of interested parties, to *tabu*, or suppress, a knowledge of the fatal effects of sea insurance as now conducted, being made known to the public, they cannot, with all their efforts, conceal them. Φ sets out with a promise to give the real facts of the case, and yet does not give a single fact, but gives abundance of assertions without proof, and endeavours to protect them, under a "deprecation of all contradiction of Mr. Ballingall, or his adherents." Under cover of this battery, he opens his fire on Captain Symonds, surveyor of the royal navy, (for having improved the construction of ships of war,) whom he demolishes to his own satisfaction. As Captain Symonds can annihilate Φ and his battery together, I shall take no further notice on this head, than to give the Captain's own words, which are directly applicable to the case in point.

"To those persons whose partiality in favour of what is at present the system, and what has been formerly the case, blinds them to improvement, even where it is as evident as noon-day; and to those whose interest it is to adhere to the present erroneous system, whose vessels are already constructed preposterously for the very purpose of evading the tonnage duty, these observations are not addressed."—*Observations upon Naval Architecture, or Construction, by W. Symonds, Capt. R. N.*

Φ's next position is, that ship-owners never think of the tonnage duties and light-house dues; and he gives an imaginary case, to prove his assertion. Instead of his hypothetical case, I shall give a real one, to shew that it is at least of some moment, whether it ever received consideration or not. Tonnage and light-house dues on the Smack Enterprise, of Kirkcaldy, James Mann, master:—

	£.	s.	d.
Paid Clearing at Custom-house of Kirkcaldy, Light dues, &c.	2	17	2
Paid Clearing at Custom-house of London, per Manifest Letter	5	8	6
Anchorage in Kirkcaldy Harbour	1	2	0
Tonnage and Light dues for a voyage, exclusive of pilotage		7	8
This vessel makes twelve voyages a year			12
Cost for twelve voyages	£112	12	0

By Φ's shewing, this vessel may be made to carry one-fourth less, or one-third more, on the same registered tonnage. One-fourth

less added to one-third more of these charges exceeds a half; but admit that it were only a half, is it no object to the owners of this vessel, to save £56. 6s. a year? Suppose the owners to have six vessels of the same size, and at the same rate. The difference on their charges on tonnage and light dues, according to Φ's shewing, may be made more or less on the same register tonnage by upwards of £200 a year. And is this no object to the owners?

I shall pass over Φ's misstatements and false deductions, till I arrive at the middle of the first paragraph on page 163, and that I may not misrepresent either the letter or spirit of the article, I shall quote it for the purpose of making some observations on it. Φ says, "It seems to be quite forgotten by these writers that the main object in going to sea, is to bring the cargo home safe, (cheaply, to be sure, but still in good order;) that if any damage arises from deficiency in the ship, the ship-owner is liable personally, not the underwriter; that even if the underwriter has to pay the damage, that the ship's character is lost.

"And with whom is the ship's character lost? Surely not with the merchant whose goods have been protected from loss, and who, consequently, has suffered no loss. Is it with the underwriter, then? The underwriter knows full well, that, were there no losses or damages to ships and goods at sea, there would be no sea insurances; and, moreover, that the more losses and damages there are at sea, as a matter of course, the higher the premiums on ships and goods rise, and that as he is provided with funds from the ship-owners and merchants to pay these damages, and which funds are charged upon the goods, it is to his interest that losses and damages should take place. As to merchants refusing to ship in her—what unconscionable fellows these merchants must be, to refuse to ship in a vessel by which they have suffered no loss? She has made an average, the merchants refuse to ship in her; another and a better ship steps in and takes her place."

Now, I respectfully submit that the main object is nothing of the kind stated by Φ, and that the main, and only object is, *to make money*, as Mercator says in the Nautical Magazine of January last. From the same reason it happens that, when a cargo is delivered with damage, the ship-master is accustomed to call an *exparte* survey for his own exoneration, without the knowledge of the consignee, who, in general, takes no interest whatever in the inquiry, but is satisfied when he learns that a survey has been held by the elders, the uniform result of which renders it unnecessary for him to call for its production. Few instances are known of surveys, so called, in absence of a representative of the injured party, ever finding that the ship is liable. —*Remarks on the Averages of Hamburgh.* But suppose the survey held in London, and the merchant and underwriter to be personally present at it, can they or Φ say what constitutes a

deficiency in the ship, so as to make the ship-owner liable? Is not the underwriter, in general, brought in liable for the damage, and is he not provided with the means of paying it, and a reversion of profit left after paying it, by the premiums which he has received, or is to receive, on that cargo, and other vessels and their cargoes? If he is not able to pay, he must become insolvent, and abandon the trade. In few words, what is sea-worthiness? Can Φ, or any of your readers, define it?

But Φ says, that "another and a better ship steps in, and takes her place." Admitting Φ to mean that a better ship is hauled on the berth and advertised for the voyage, it does not follow that she will take the trade from the vessel which damaged her cargo. The vessel which did so, must either be repaired or not. If she be repaired, she is probably a better ship than she was when she damaged her cargo. If she be not repaired, it is quite right that "another and a better ship should step in and take her place." But I make no doubt that a newer ship would get a preference. Hence all motive or inducement is taken from a ship-owner to get a ship that will last, and be safe at sea. Safety, shape, form, quality, condition, materials, workmanship, every thing, is sacrificed to newness. Hence a ship-owner's whole object is to get the cheapest vessel he can, keep her insured, let her be lost when she is near wearing off the first letter, get the sum she was insured for, buy another new vessel at the cheapest rate with this sum, and again run the same round. I ask Φ if, owing to the fatal system under which merchant ships are classed, this is not the course generally followed by ship-owners? Supposing a carrier's cart of superior construction to have cost £10, and another of inferior construction to have cost only £5, but with which the owner can earn as much money as with the one which cost £10, and that upon each of these carts becoming twelve years, or twelve months old, a proscriptive mark was put on it, rendering it unprofitable to the owner, and for the same reason to anybody else, and nearly valueless in the market, and that this law or practice was general, and applied to all carriers' carts. What would be the consequence? Why, clearly, that there would be no demand for £10 carts, and none would be made. Changing the words "carrier's cart," for "merchant ship," the case exactly represents the practice of the present day. Should this practice continue to be tolerated, whoever may profit by it?

Φ again says, that "these gentlemen seem to think that competition is a thing unknown to the ship-owner." Now, it is well known that *age* is the great standard by which the existing system is professedly regulated. The *effect* of this, to a very great extent, is, when a ship has outlived her first character, to compel the owner immediately to sell her, from the impossibility, in a large portion of our carrying trade, to employ any ship to

the name of which, the talismanic charm of A, 1, is not appended, and the party so forced to get rid of his ship, from the arbitrary system of regulating her character by age only, immediately *supplies her place with a* NEW *one*, THUS CREATING, *from the operation of this obnoxious system*, AN ADDITIONAL SHIP TO THE PREVIOUSLY EXISTING GLUT, because only an A, 1, *can* be employed for his purpose, the merchants being governed in their shipments by the practice at Lloyd's, of looking to the class, and not to the intrinsic excellence of a ship. Thus *the effect* is, that *two ships exist instead of one*, the party purchasing the older vessel, forcing her into employment also. . . . . "Whence sprung the wild mania for building, which has had so large a share in producing the state of things under which we are now so seriously suffering? The answer is obvious, that, on an average of about *nine* years, *every ship registered in the United Kingdom* lapses, with utter disregard to her actual condition, *however anxious the owner may be to prevent it by the fullest and most complete repair*, INTO THE SECOND CLASS; and under the present mode, a *first class* vessel is regarded as *indispensable* for a very great proportion of our carrying trade. Here then is a *practical illustration*, that to a system devised and administered by irresponsible persons, possessing a very limited knowledge of the description of property over which they exercise so serious a power, is to be ascribed a considerable portion of the evils against which the ship-owners of this country have to contend." So says *Marshall on the Classification of Shipping*. Here then is the real competition against which ship-owners have to contend, for the classification, although altered in name, is the same in spirit and effect as when the above able remarks were written by Marshall; and it is clear to any person who will bestow a little reflection on it, that the system is the real cause of there being such a superfluity of unremunerative British tonnage. Yet, incredible as it may appear to the uninitiated, ship-owners do not wish the system altered; and Φ justly observes, "Now, when it is known that, though there occur cases when a total loss may be an advantage to an owner, yet that an average or partial damage is invariably (though insured) a loss in a pecuniary view, it follows that ship-owners must contemplate total losses, which generally involve a loss of life."

Φ also says, "Bad ships, cheap ships, always will exist, but from a cause perfectly distinct from sea insurance; if insurance were unknown, it would still be the same. If I can do the same work with £1,000 as my neighbour with £2,000, I save in capital, in interest, and, above all, I save in premiums of insurance: whether we both risk the whole, or only nine-tenths, I still have the advantage." The first of these statements, I pointedly deny. If sea

insurance did not exist, no man would risk his property in such shells, sieves, and wholesale coffins as are now built and sent to sea. If no sea insurance existed, every ship-owner would strive to have the safest ship, to preserve his property from loss. And the next statement I also deny. If Φ can do the same work with £1,000, as his neighbour with £2,000, he can do the same work with £500 as his neighbour with £1,000, with £250 as with £500, with £125 as with £250, and so on; and see where the absurd position leads him to. But, by means of the *abuse* of sea insurance, and a *disregard of safety*, he can do the same work with £1000, embarked in a cheap and unsafe ship, as his neighbour can with £2,000, embarked in a good and safe ship of the same size; and here it is, where, *at the expense of life and merchandise*, he "saves in capital, in interest, and, above all, in premiums of insurance; and this whether he risks the whole, or only nine-tenths." The *safe* ship, which cost £2000, would be preserved in nine cases out of ten, where the *unsafe* ship, which cost only £1000, would be lost; and, were it not owing to sea insurance, by means of which, Φ has informed us, that "a total loss may be an advantage to an owner;" and, were Φ's capital really at stake, he would take good care to have a *safe* instead of an *unsafe* ship. This is the true cause of the numerous wrecks and destruction of property at sea. In further proof, were any wanting, of the fatal effects of sea insurance in causing shipwrecks, it may be stated, that only three smacks, out of the whole number constantly trading between Dundee and London, (and which vessels were *not* insured, and consequently it was the owners great object to keep them from being lost,) have been lost in the course of upwards of forty years. Whilst, on the other hand, no less than 250 vessels, most if not all of which *were* insured, (and consequently it was no great loss to the owners, whether they were lost or not,—in some cases, in all probability they made a gain by it,) have been lost belonging to the Tyne, in the course of the last forty-seven months.

How does Φ account for this fact? and if it be not owing to sea insurance, to what is the safety in the one case and the unsafety in the other to the ascribed? I should like a plain answer to this question, and not assertion without proof, declamation, or tirade.

Whilst I make no reflection on ship-owners, as a body, I am at liberty to quote documents, wherever I find them applicable to the case in hand, and the following is a quotation from "*The Profits of the Sinking System at Sea*," published some years ago. "But, again, as respects life, supposing a vessel, of originally faulty construction, with indifferent materials, to have become rickety and battered by age and service, to be put to sea, protected by insurance at twice her worth, does it not immediately become the interest of the owner that she should founder! Will he repel this almost

self-springing desire, by reflecting upon the loss of life which might, and would in all likelihood, attend that event? We should be sorry to entertain the horrid belief, that every ship-owner, under these circumstances, would cherish such a wish; but no scepticism of this nature can overcome the fact, everywhere established, that humanity in the breast of a ship-owner will not always, will seldom, indeed, get the better of his interest, in an extensive sense. Look, for proofs, to the history of the slave trade—a trade which, if no longer carried on in British vessels, British ship-owners will hardly gain credit for voluntarily foregoing it."

Φ cries out for facts; and he shall have them. The first I shall give is published in the Edinburgh Advertiser, so far back as 11th October, 1825. It is there stated, in reference to the smacks in the trade between Leith and London, in which there were twenty-one vessels then employed, and a capital of £100,000 embarked in them, "That the whole profits, after allowing the usual per centage, paying expenses, and keeping up the stock, by meeting and providing against deterioration, &c., have not averaged £10,000 per annum, of which £8000 would have been required to pay insurance, had the Company not taken their own risks, so that the real profits (after allowing for such insurances, had the Company, or shareholders of the Company, not taken them on themselves) have only been about two per cent per annum." This, I think, shews pretty strongly the profit to the ship-owner of having well-constructed, manned, provided, and equipt vessels, and diminishing the extent of his insurance. Had it not been for the pestiferous influence exercised over the construction of all merchant vessels, whether they were intended to be insured or not, by the abuse of marine insurance, which, it is quite clear, operates to prohibit all improvements in naval construction, and, like the simoom of the desert, blights, blasts, and withers everything within range of its influence, these vessels (the smacks) would have been built much stronger and safer. The cause producing this effect is still, it is to be regretted, in full operation.

The second fact is, that in 1833 upwards of 800 British merchant vessels were lost, while not one British ship of war was lost. How is this fact to be accounted for? Simply by the improved construction, or solidity of bottom, inherent in the vessels of war, and which was wanting in the merchant vessels. This fact is further proved, were further proof wanted, from the circumstance of several vessels of war having that year been ashore in storms and tremendous gales of wind, on rocks, rocky shores, and sand-banks exposed to the open sea, (the Goodwin, &c.) and yet all of them preserved. This fact completely deprives the opponents of safety, of the argument of which they wish to avail themselves, of attributing the safety of the vessels of war to the

superior crews, navigators, and means on board of them, to enable them to keep off from, or extricate themselves from danger, because, although the crews, and means on board the vessels, were not less before the introduction of the solid bottoms than they are now, it then happened that when vessels of war got on rocks or sand-banks, they were lost almost as readily as merchant vessels now are. Let Φ disprove these facts if he can.

I have, Mr. Editor, much more to say, but having followed Φ further than I fear you will be disposed to give me space to express myself, I hasten to conclude with a few passing remarks, and hope your correspondent will again favour me with an opportunity of paying my respects to him. When I have the honour of being introduced to him, I shall, for my shear ignorance of the subject, make him a bow that would even satisfy the emperor of China, for a Kau-tau. Φ must have a hit at the "Baillie, or provost speeches of Kirkcaldy," (without offering to impugn, or to question the truth of one word of them, though by the bye,) and "had hoped that education and experience had extended their influence sufficiently over our nation," yea, as well as his prototype Vindex, at "the remote regions of Kirkcaldy." I would recommend these gentlemen, although the one may be a London ship-owner, and the other a London underwriter of some thirty years' standing, to bear in mind the eulogium of the celebrated Curran, when they again feel disposed to make sarcastic remarks on Kirkcaldy, "that Scotland is a nation cool and ardent, adventurous and persevering; winging her eagle flight against the blaze of every science, with an eye that never winks, and a wing that never tires;" and certainly possessed of knowledge enough to detect fraud, productive of most fatal consequences, although conducted on a national scale, at the Royal Exchange, London, and courage enough to expose it to the public gaze and public condemnation.

On one point I most cordially agree with your correspondent it is, that honesty is the best policy; and that merchant shipping, like every other article in the kingdom, should be left to the freedom of open competition. But is it so? Have we not a Society, self-elected, irresponsible, and unconstitutional, in the worst sense of each of these words, exercising an influence over merchant shipping, such as no other property in the kingdom is subject to, and taking away all motive from ship-owners to have strong and safe ships. I allude to the "Drowning-at-sea Society."

As to Φ's remark, that there never was a clearer book at Lloyd's than last year, it proves nothing. It only reminds us of the fact, with which we are well acquainted, that 1835 was not a stormy year; and so much was this the case, that the Davis's Straits ships

attributed their ill success at the fishery to the want of wind during the whole season to break up the ice; and to the same cause is to be attributed the few shipwrecks. How will the remark of a clear book at Lloyd's apply from the date of his letter to this date?

I am, Mr. Editor,
Your most obedient servant,
JAMES BALLINGALL.

P. S. So far am I from deprecating contradiction or discussion of the subject—a very summary way of settling an argument, by the bye—I invite them, knowing that by their means the truth will be made manifest; and that the first step towards the remedy of any evil is an exact knowledge of its nature, degree, and cause. But, "great indeed are the hostile principles with which we have to combat; and not the least of them, that very commercial spirit of this nation, fostered by the economists into an insatiable craving, till the accumulation of capital appears the sole good, and men of no value but as machines for its creation."—J. B.

APALACHE; OR, ST. MARK'S, FLORIDA.

To the Editor of the Nautical Magazine.

SIR,—Through the obliging attention of Messrs. Steele and Son, of Liverpool, I have received from those gentlemen some remarks on the port of Apalaché, or St. Mark, in Florida, lately made by Mr. Samuel Martin, master of the brig Wilkinson, of Whitehaven. This port, it appears, is likely to become a place of considerable trade, more particularly from Liverpool; and as the description of it, in all the books, is evidently imperfect, the following may be useful to some of your readers.

Captain Martin says, "I would advise every one, on coming in for this place, to keep the Florida shore on board, and not, upon any account, to risk a fall to leeward of the Cape St. George; for, should a vessel get in between this and Cape St. Blas, and a gale of wind from the S. W. come on, she would be placed in imminent danger, between the reefs of the capes. By keeping the bay open, with a beating wind, you may safely stretch into seven or eight fathoms; and your lead will warn you of all danger, if kept going, as the soundings are regular, and may be obtained a long way from land. After making the S. W. cape, give it a berth of at least four leagues, to avoid the *south-cape shoals*, so called, and when it bears due west twelve miles from you, you will have the light-house about N. N. W., on which course you may safely run into three fathoms; but attempt to advance no farther, as the bar is very shoal. With N. W. winds it has not more than six feet upon it; but S. W. winds, having a contrary effect, raise the tides to twelve and thirteen feet. The bar has a barrel-buoy at present,

lying on the shoalest part, about five miles south from the anchorage.

" Extending east and west, there is a dangerous shoal lying off the Okalokana river, not inserted in Mr. Gauld's, or other charts.

" Vessels drawing from ten to eleven feet should be prepared with a good stream cable, as it may be of the greatest service on getting over the bar, should your vessel ground, without the assistance of the stream. This was my case; I lay twelve hours at anchor, and might have laid a long time on going in, and thirty-six hours coming out, heaving at intervals, as the warp slackened. With perseverance you may get over, when otherwise you may have your vessel in danger. In fine weather the pilots advance in very small boats, but when blowing heavy, in a small sloop-boat.

"The distance that soundings, of five fathoms, may be obtained from the land, on coming in, is about twenty miles from the northern shore. When the wind is N. W. the harbour is not to be attempted on any consideration; with S. W. winds it may be entered safely with a vessel drawing from nine to eleven feet. The ground may be trusted for holding, in a gale of wind from the N. W. which often prevails. If the wind answers to get once over the bar, you may run the vessel on, and with your stream anchor ahead, about forty-eight or fifty fathoms, you will be ready for the wind at S. W. which often causes a heavy roll of the sea, when you will be enabled to heave occasionally, as your warp slackens."

In the preceding description, Captain Martin notices the harbour-light on point Casinas, at the entrance of the Apalaché, and this is the first notice of it which I have seen; excepting that a grant of money, for a lighthouse hereabout, was made in 1828; nor do I find any particular notice of a lighthouse on Cape St. George, said to be building in 1833. Perhaps your correspondent, Mr. Redfield,* or some other intelligent American, will oblige us with an account of such lighthouses as have lately been erected on their side of the water. I need not say that such information would be important and useful.

I have been induced to mention Mr. Redfield's name in particular, having some time since received a polite letter from that gentleman, which concludes with the following generous sentiment:—

" Should any of my feeble contributions be deemed useful, you will have the goodness to consider them as always at your disposal; and it would afford me much pleasure if I am able to contribute, in any degree, to the discharge of that debt which my

* See Discussion on the Gales and Hurricanes of the Atlantic, Nautical Magazine, April, 1836, p. 199.

countrymen owe to the British government and people for their efforts and sacrifices, in promoting the cause of nautical science."

"May all men remember that they are brethren."—I remain, respectfully,

Sir,—Your obedient servant,

July 5, 1836. JOHN PURDY.

NAVIGATION OF THE RIVER DEE.

Trinity House, London, 30th June, 1836.

THIS corporation having caused additional buoys, with a view to facilitate the navigation of vessels passing over Chester bar and through the channels, from thence up the river Dee towards Chester, the names, descriptions, and situations of the several buoys, which are now lying in that navigation, are hereunder given, for the information of the trade, namely,—

N. W. PATCH.—A Nun buoy; chequered black and white, with a perch; on the N. W. extreme of the 9 feet spit of the middle patch in 16 feet.—With St. Asaph's cathedral midway between Rhuddlan church and castle, S. ¼ W. Formby light-house, its breadth open northward of the N.W. light-ship. The light-ship, E. Course to Chester bar, E.b.S. ½ S. For the inner channel, S.E. ½ E.

BAR.—A Nun buoy; black; on the N. W. extreme of the West Hoyle (Blaney patch) in 12 feet.—With Park Gate ferry-house on the S.W. side of the Point of Air light-house; Kirby church on with the eye, bearing S.E. ¼ E. The N.W. patch buoy W. Course for the Welsh channel between the West Hoyle and middle patch, S.E.

EARWIG.—A Nun buoy; chequered black and white; on the south elbow of the Earwig (or middle patch) in 9 feet.—With St. Elmos a sail's breadth eastward of Nante Farm, Talacre, midway between the life-boat house and the Captain's house, S.E.b. S. Bar buoy, N.N.W. Point of Air buoy, E.b.S.

AIR.—A Nun buoy; red; on the N.E. elbow of Air Point in 4 fathoms.—With Mostyn Turnpikehouse (white) on with the extreme of the Sand-hills, south of the Point of Air, S. ¼ W. Lower Hoylake light-house, on with the northern extreme of Helbre Island, E.b.S. Earwig buoy, W.b.N. ¼ N. Course to the S.E. buoy, S.E.

S.E. AIR.—A Nun buoy; red; on the S.E. elbow of Point of Air in 14 feet.—With Hoylake church, on with the south extreme of Helbre Island E. The Air buoy, N. W. Course for Mostyn Deep, S.b.E. or S.E.b.E. for Salisbury Middle buoy.

M. 1.—A Nun buoy; red; close to low-water mark of Mostyn bank at the entrance of the gut, in 9 feet.—With Hoylake church,

its breadth open north of the eye, N.E.b.E.½E. S.E. Air buoy, N.b.W. ½ W., a S.E. course will lead up the fairway of Mostyn Deep.

M. 2.—A Nun buoy; red; close to low-water mark, on Mostyn bank, in 12 feet.—With Helbre Point and Eye Isle in one, N.E.½N. The middle Gut buoy, N.W.½N. A course E.b.S.½S. leads to the entrance of Bug Swash.

M. 2.—A Nun buoy; black; on the S.W. edge of Great Salisbury bank in 12 feet.—With Hoylake hotel, a sail's breadth open south of the Eye, N.E. ½ E. The mid. Gut 2 red, north—a S.E. course will lead up the fair way towards Bug Swash.

M. 3.—A Nun bouy; chequered red and white, with a perch on the north extremity of the spit, (which forms the fork of Bug Swash and Mostyn Deep) in 4 feet.—With Neston Mills just open south of Park Gate ferry-house, S.E. ½ S. Helbre Point, a large sail's breadth open south of the Eye Isle, N.N.E. ½ E.; a S.E.b.E. course leads to first buoy in Bug Swash. A S.S.E.½E. course leads up to Bug buoy 3.

Bug 1.—A Nun buoy; black; near low-water mark in the bight of the S.W. side of Great Salisbury bank (forming Bug Swash) in 8 feet.—With Neston Mills in one with Park Gate ferry-house, S.E. ½ S. Mather's smelting chimney, its breadth open north of Grosvenor chimney, S.S.W. ½ W. Course S. ½ E. ½ of a mile, and then S.E. ½ E. ⅝ of a mile leads to Bug buoy 2.

Bug 2.—A Nun buoy; black; on the edge of the Great Salisbury bank, forming the upper reach of Bug Swash in 9 feet.—With Mather's chimney, twice its breadth open south of Grosvenor's chimney, S.W.½W.; and the beach mark at Helbre open west of the Eye, N. ½ W. Course to Bug buoy 3. S.S.E. ½ of a mile.

Bug 3.—A Nun buoy; red; at the east elbow of Bagilt bank (forming the west side of Bug Swash) in 6 feet.—With Heswell house in one with Poppet hall east, and Neston Mills on with the north end of Park Gate terrace, S.E. Spit buoy south.

Spit.—A Nun buoy; red, with a perch; on the south spit of Great Salisbury in 4 feet, (forming the fork of Flint deep and Bug Swash.)—With Neston church in one with the southern extreme of Park Gate, S.E. ½ E. and Heswell house on with the northside of Heswell church, E.N.E. Course up the fairway of the gutter to the elbow, S.b.W. ½ W. ½ of a mile.

Elbow.—A Nun buoy; red; near low-water mark of Bagilt bank in 2 feet, (forming the west side of Flint deep or gutter.)—With Gayton house, twice its breadth open southward of Gayton cottage, N.E.b.E.½E. Course to the Flint buoy, S.W.b.S. ½ of a mile.

Flint.—A Can buoy; black; at low-water mark of Neston sands, (forming the east side of Flint deep,) in 2 feet.—With

Neston Mills, a large sail's breadth open south of Park Gate terrace, E. ¼ S. Course to abreast of Flint is S.b.W. ¼ W. 1 mile.

SALISBURY MIDDLE.—A Can buoy; chequered black and white, with a perch; on the northern extreme of Salisbury middle spit, (forming the fork of Salisbury gut and Mostyn Deep.)—With Hoylake church on with the northern extreme of middle Helbre E. ¼ N. Point of Air light-house W.N.W. Course for Mostyn deep south, and for Salisbury gut, S.S.E. ¼ E.

SALISBURY BANK.—A Can buoy; black; on the west edge of Salisbury bank in 3 fathoms, (forming the east side of Salisbury gut.—With Grange Mill on with the north side of Kirby church, E. ¼ S. Gayton hall and Poppet hall in one, S.E. ¼ S. Salisbury middle buoy, N.W. ¼ N. Course to Salisbury bar buoy is, S.S.E. ¼ E.

SALISBURY BAR.—A Can buoy; chequered black and white; on the southern extreme of Salisbury bank in 3 feet, and forming the north side of Salisbury bar.—With Helbre Point, a hand-spike's length open south of the Eye, N.E. ¼ N. Gayton hall open of Poppet hall, S.E. ¼ S. Course to Dawpool, E.b.S. ¼ S.

SALISBURY BAR.—A Can buoy; red; on the N.E. spur of the Great Salisbury bank in 6 feet, forming the south side of the bar.—Gayton hall, its breadth open north of Poppet hall, S.E. ¼ S. Helbre telegraph N. Course from one cable's length N.E. of this buoy to the fairway of Dawpool S.E.

CAWDY.—A Can buoy; black; on the S.W. extreme of Cawdy blacks in Dawpool deep in 6 feet.—With the beach mark of Helbre on with the east side of the Eye Isle, N. ⅜ W. Kirby church in one with a remarkable white house at the foot of Grange hill, N.N.E. ¼ E. Course to abreast of Great Salisbury buoy is, S.b.E. ½ E. to the deeps (if bound into Park Gate) S.E. southerly Subject to tide in both cases.

DEEPS.—A Can buoy; chequered black and white; on the northern extreme of the spit of Park Gate Sands, which forms the Fork of Flint and Park Gate Deeps.—With Neston Mill, its breadth open east of Gayton cottage, S.S.E. The north part of Helbre Isle just open west of the Eye Isle, N.b.W. ¼ W. Course to Flint Deep S. ¼ E. For Park Gate Deep, S.b.E. ¼ E.

GREAT SALISBURY.—A Can buoy; red; at the eastern elbow of the Great Salisbury Bank, in 6 feet, on the west side of Flint Deep.—With Neston church, its breadth open west of Park Gate ferry-house, S.S.E. ¼ E., the house on Helbre Isle shut in by the west side of middle Isle, N.b.W. ¼ W. Course from this up the fairway of Flint Deep is S.b.W. ¼ W. till abreast of Flint Deeps buoy.

FLINT DEEPS.—A Can buoy; chequered red and white; on the south-east elbow of the Great Salisbury, on the west side of Flint

Deep, in 4 feet.—With Beach and Eye Marks of Helbre in one, N. ¼ W. Heswell house a handspike's length, open north of Heswell church, E.b.N. Course S.W. to keep the fairway of Flint Deep till at the Red Spit buoy.

SELDOM SEEN.—A Nun buoy; black; on the west elbow of the lime wharf, forming the eastern side of Dawpool Deep. With Hoylake church, and the Eye Isle in one, N.E.b.E. ¾ E. Grange mill, on with the north side of Kirby church, E. ¼ S. Course to the Deeps Buoy, S.E.

N.B.—The whole of the before-mentioned buoys are marked as they are herein denominated; the depths of water are those of low-water spring tides, and the bearings are magnetic.

By order,

J. HERBERT, Secretary.

REGULATIONS FOR THE CONDUCTING OF STEAM VESSELS.

To the Editor of the Nautical Magazine.

SIR,—It is strange, that when Committees are appointed to fram regulations for the navigation of vessels, there should appear reason to believe, that such are sometimes constituted, without including those who know any thing of nautical affairs.

The above observation is made, Mr. Editor, in consequence of reading lately, in your truly nautical work, what professes to be the Report of a Committee (of the House of Commons, I presume,) on Pilotage. The first of the clauses proposed by the said Committee for the regulation of Steam Navigation, runs thus:—"In the Thames, and in all the rivers and channels of the united kingdom, and in all cases of wind, weather, and tide, steam-vessels are to endeavour to keep on that side of the river or channel which lies on their starboard hand." Of the recommendation contained in this clause, no waterman's apprentice, who has been upon a river for a week, can fail to see the fallacy. Any vessel, whether steam or sailing, going with the tide, must navigate (to do it advantageously), in the strength of the stream; and when opposing the current, must be permitted to choose such sides as present the most favourable "slacks" or "eddies." When the course of steamers is such that they *meet*, it is proper that it should become a rule universally to be abided by—a clear regulation which side they were to pass each other.

Some further clauses of the recommendation of the Pilotage Committee respecting lights for steam-vessels, are as bad. To be obliged to shew these "lights" *visible in all directions*, appears to me likely to create confusion in a river, or where many steamers happen to be passing when it is dark;* and it

* Strictly speaking, it is impossible.

would clearly be better, that whatever lights they were to exhibit should only shew in the direction the steam-vessel is going, and a-beam of her. Again, the shewing the lights as the Committee proposes, namely, two, twelve feet apart (upon a yard), and one more on the larboard yard-arm, *three feet* within the outermost one when going *down* any river, or under it when going up, is an indistinct mode of disposing of the lights. At any distance, and particularly in hazy weather, two lights so near each other would shew at once.

A much better disposition of three lights would be—one hoisted up the fore-stay, as high as the fore-yard, and one before each paddle-box; these latter, in a river or smooth water, to be placed as low as possible; say upon the grating before the paddle-box. With three lights so placed, a triangle would be formed, which would shew clearly to all ships a steamer might be approaching. Any deviation from such triangle would shew the steamer's course; and the lights so disposed would not blind those on the look-out forward, as they would do, were two of them placed at the cat-heads, instead of before the paddle-boxes.

These lights should be carried by steamers in the channels, and on the coasts of Great Britain, and not confined to pilotage water; and it would be better that the lights should be of different colours,—say, the upper one pale bright light—starboard side, deep red—and larboard side, green.

It seems extraordinary that no regulations should be enforced (or even suggested) for vessels sailing, or at anchor, to oblige *them* to take the least precaution *to enable steamers to avoid them.* It surely should be incumbent upon all vessels approached by a steamer carrying lights, to take some measure for making their situation or movements known, and not to throw all the responsibility upon the steamers. I would suggest, that whenever vessels are approached by a steamer, whose lights, according to my plan, would so clearly indicate her course, should that course be such as would render it certain they would come nearly together, that the vessel so approached should be obliged to exhibit a light as follows, or be answerable for all the consequences, viz.,

If going before the wind, or large, a bright pale light.
If on the starboard tack . . . a deep red light.
If on the larboard tack . . . a green light.
If at anchor . . . . . half red, half green.

A lanthorn, revolving and fitted to shew these lights, is already in pretty general use on board ships, invented by Mr. Pierce,*

* The same who invented the screw-fid as described in a former number of our work. This gentleman lately received a premium from the Society of Arts for a claw, which serves as a stopper for a chain cable.

who has also distributed printed instructions, suggesting, that the above colours are to indicate the motions or situation of the ship, as stated.

It is clearly of importance, that a steamer coming suddenly upon a ship in the dark, should be enabled to know what the ship is about; and it then should be her business to avoid the sailing vessel in every case but one, and that is, when the steamer is going head to wind, or nearly so, and the sailing vessel going large, *when she should give way to the steamer;* as it may often happen, that a steamer opposing a heavy sea, may, by altering her course, be put to considerable inconvenience, which would not apply to the sailing vessel meeting her, if going large.

I am not ignorant that there is a bill also before Parliament, for the regulation of Steam Navigation, and which, I may presume, will supersede that part of the Pilotage Committee's recommendation which relates to the subject. I have seen a draft of the bill, which, although avoiding the errors I have named, yet is deficient in all the points I have referred to, as desirable to become law; and it is for the consideration of those interested in the subject, (and who are they who are not so?) that I have taken the liberty of offering the foregoing suggestions; and which, I cannot but flatter myself, embrace, in as short a manner as possible, all the regulations that are necessary for the avoidance of those melancholy accidents which have been too frequent, and which will most assuredly increase, if clear laws are not enacted, as well for the government of sailing, as of steam-vessels.

I am, Sir, your obedient servant,

London, 9th July, 1836. A. SKIPPER.

REPORT OF THE PILOTAGE COMMITTEE.

(Concluded from page 374.)

No. 39. Provision is made by this clause to enable pilots to provide themselves with boats, where necessary, for landing and shipping themselves, which, we are of opinion, should be done at their own expense; and the object of the limitation, which provides that no other person than the pilots should derive any emolument from the employment of such boats, is to meet cases like that at Liverpool, which is complained of with great justice.

At the port of Liverpool, eleven boats have been licensed for cruising with pilots, which are owned by the masters of the boat, and such other pilots belonging to the port as can raise sufficient capital to purchase a share. Some hold shares in more than one boat, and the extent and number of the shares depend upon each individual's opportunity and ability to purchase. The crew of each boat consists of two masters, one of whom always conducts the sailing of the boat, while the other remains at home; of a certain number of apprentices; and from ten to fifteen pilots. The earnings are ascertained once

a quarter, and, after deducting for provisions, contributions to the fund, &c., the residue is divided into shares, as follows:—

Two masters, one share each	2
(say) Ten journeymen, or licensed pilots, one share each	10
Owners for three apprentices, or two-thirds of three shares	2
Ditto unlicensed apprentices	1½
Ditto wear and tear of boat	2½

exhibiting a total of eighteen shares, when there are only ten pilots on board.

It appears in evidence, that the owners of one boat, No. 11, have divided a profit at the rate of £800 in one year; and the consequence has been to enhance the value of the pilots' vessels from £1,200 or £1,400, their original cost, to between £4,000 and £5,000, and even more. This, moreover, does not include the allowance to the masters, who do not act as pilots, and whose duty might, as in the Cinque Ports, be equally well performed by the senior pilot on board.

We are of opinion that this system, in an establishment which appears otherwise well conducted, should be discontinued; but as the present owners of these boats have paid such exorbitant sums upon the faith of an existing act of parliament, they are fairly entitled to remuneration, which may be arranged in the following manner:—We would suggest that the ship-owners at Liverpool should continue to pay the present scale of rates at that port; but as those rates will, with attention to the proper retrenchment of expenses, admit of considerable reduction, and still leave a liberal remuneration to the working pilot, a new and reduced scale should be fixed for the payment of the pilots; and the surplus arising from the difference between the old and new rates should be applied to the purchase of the existing interests in the boats, at the prices which the owners may have paid for them; and when all the boats have been thus purchased, the reduced table of rates should come into full operation.

No. 40. That, in order to remove any want of uniformity, and all grounds for the plea of ignorance on the part of masters, one well-known flag should be established throughout the ports of the united kingdom, for all vessels carrying pilots. And as the practice has been long established in all parts of the world, of hoisting at the fore the national jack of the country to which the vessel belongs, as a signal for a pilot, masters should be directed to be very cautious not to mislead distant pilot boats by making any other signals at that mast-head.

No. 42. That a penalty should be attached to the offence of a pilot omitting to board the first vessel presenting itself; complaints having been made to us, that it is not an unusual practice for pilots to pass on to a larger vessel, if in sight, in order to receive a higher rate of pilotage.

No. 50. That the bye-laws for each district should define, clearly and distinctly, the limits of pilots' water; and as ship-owners are exonerated from all liability while in pilots' water, it is necessary that great care should be taken in the framing and wording of these bye-laws, for, by a recent decision in the Court of Exchequer, in the case of Oliver *v.* Templar, a totally new construction has been put upon the present act of parliament.

No. 52. That a penalty should be inflicted on the master of any vessel who should make a false report that his vessel is employed in the coasting trade, when, in fact, it is bound to or from a foreign port; for it appears that this is not an unfrequent practice, in order to evade pilotage, and that there is no summary punishment for the offence.

No. 54. In considering the claims of various descriptions of vessels to exemption from the obligation to employ a pilot, we have proceeded upon the principle that the only grounds which can entitle a vessel to that privilege, are the circumstances of her draught of water being very small, or of her being commanded by a person well acquainted with the navigation of the port or district in which exemption is claimed.

The several suggestions upon this head which have been pressed upon our notice, are—

1. That it should be altogether optional to employ a pilot.
2. That all vessels in ballast should be exempt.
3. That coasters should be everywhere exempt, not excepting those ports in which they are now compelled to take a pilot.
4. That ships passing through Yarmouth Roads should be exempt.
5. That ships entering any bay or roadstead from distress of weather, contrary winds, or on account of accident, should be exempt.
6. That all steam-vessels should be exempt.

The first proposition would be found wholly inconsistent with the maintenance of an efficient pilot establishment, and would only hold out a boon to the ignorant and foolhardy. With respect to the second, we see no reason why the underwriter on the ship should not be equally protected with the underwriter on the cargo, merely because the ship is in ballast: it must also be borne in mind, that the pilot establishment is principally maintained for the benefit of the foreign trade of this country, and that, if many exemptions be admitted, too great a charge will be thrown on the remainder.

The third head applies principally to Liverpool, where coasters above 100 tons burthen, or vessels which have not been employed in that trade for six months, are subject to pilotage, although it appears that they were formerly exempt, and it also applies to the ports of Ireland. In most other ports coasters are free, and, as their masters are generally good pilots for the places which they frequent, we consider that such vessels should be placed on the same footing throughout the united kingdom, and be everywhere exonerated from the obligation to employ a pilot.

With reference to the fourth and fifth heads, it appears from the information we have received, that, in passing through Yarmouth Roads, the assistance of a pilot is scarcely necessary; and we consider that the dictates of humanity urge the removal of every impediment to vessels taking shelter when in distress; for experience proves that masters are often deterred from seeking a safe asylum for their vessels, from the fear of incurring heavy charges for pilotage.

The last and most important of these suggestions refers to the subject of navigation by steam, a power which was not in existence at the time when the present pilotage laws were established. Urgent representations have been received upon this point, particularly from Liverpool, where complaints are made of "the severe exactions and charges levied upon the owners of steam-

vessels," by obliging them to employ a pilot, "when the masters and mates of such vessels, from their constant and regular use of the ports between which they daily ply, are well acquainted with such ports." It is admitted that a steam-vessel is piloted with much greater ease and safety than a sailing vessel; and it has been stated in evidence, that at least one large company at Liverpool do not permit any pilot to take charge of their vessels, although they may have one on board, and be obliged to pay the same as if he acted, because they consider that their own masters are better qualified than the regular pilots. The charge also becomes very oppressive upon vessels which quit and enter a port daily. The same company at Liverpool were subject to no less a charge in the year 1834 than £2,890 for pilotage in the two principal ports which their vessels frequent, although, as before stated, the masters were not permitted to allow a pilot to act. As this, however, is a question involving not merely the risk of property to an immense amount, but, still more, the valuable lives of hundreds who daily embark in this class of vessels, we conceive that some regulation is absolutely necessary, as well for the ports in which steam-vessels, trading as coasters, are now exempt, as in those in which they are at present compelled to take a pilot; and this becomes the more necessary, as steam-navigation is so rapidly increasing, both in extent and importance.

We would therefore recommend, that all steam-vessels navigating between one port of the united kingdom and another, and all steam-vessels navigating between a port of the united kingdom and a foreign port, when the average time employed in such voyage does not exceed twenty-four hours, and having actually on board a master, mate, or other competent person, who has passed an examination for the district, should be exempt from employing a pilot; and this we submit as the best, and, we believe, a sufficient security for this important branch of navigation.

We concur in opinion with the select committees of the House of Commons in 1824 and 1833, which recommended that regular traders between any port in the Thames or Medway, and any place between Boulogne and the Scaw, not exceeding 200 tons, should be exempt in the Thames, upon the ground of the general competency of the masters of such vessels, from the constant use of the same channels; but we would recommend that they should be placed under the same restriction as is proposed with respect to steam-boats; and we would impose the same upon vessels trading from the rivers Thames and Medway to the Baltic and the North Seas, which, by the present act of parliament, are exempt from the obligation to take a pilot; and this restriction would apply with equal force to all those foreign vessels which claim a similar exemption under any existing treaty.

With regard to the two last heads of exemption in the present act, we would recommend their discontinuance. The privilege possessed by residents of the Cinque Ports, of conducting their own vessels without being obliged to employ a pilot, has in practice led to much abuse; and there appears to be no sufficient reason why a vessel should be exempt within the limits of the port to which she belongs.

It is a matter of general complaint on the part of the pilots, that masters of coasters, and other exempted vessels, frequently employ hobblers and boatmen, in order to avail themselves of their knowledge as pilots, though under the pretext of requiring their services for other purposes; but as the privilege of exemption which we propose should be conferred on the above classes of vessels, rests solely on the ground of the masters being competent to pilot their own vessels, or having a certificated person on board; it by no means entitles them to employ unlicensed persons to assist them when their own knowledge is insufficient. The existence of this practice has arisen, we

believe, from there being no pecuniary penalty directly attached to the offence; and we therefore propose one to the extent of £10, which will probably check the evil.

No. 55 provides for the examination of masters, mates, and other fit persons on board of such vessels as may be entitled to exemption under the above-mentioned limitations.

No. 58 provides for the compensation of unlicensed persons, as before alluded to in page 10, who, having taken charge of a vessel for a considerable distance, may be superseded by a pilot, and deprived of all legal claim to remuneration.

No. 66. A representation having been made of the alleged hardship of making the agent of a vessel responsible for the amount of pilotage, we have given the subject our best consideration, but we do not advise any change in the present law.

No. 67. There appears to be some injustice in subjecting foreign vessels to the full amount of pilotage inwards for the whole distance of pilots' water, whether a pilot has presented himself or not; and we therefore recommend that payment should be limited to the actual distance piloted, provided that the regular signal for a pilot shall have been made.

No. 74. All complaints respecting pilots and pilotage should be determined as speedily as possible, and not held suspended over the heads of the accused parties: we therefore strongly recommend that the period for commencing all proceedings for fines, &c. should be considerably reduced.

We have thus stated the general results of our inquiries into the various matters suggested in your Majesty's commission, as well as the measures which appear to us best calculated to ensure the establishment and maintenance of an efficient system of pilotage throughout the united kingdom, and which we now humbly submit to your Majesty's gracious consideration.

Given under our hands and seals,

	LOWTHER,	(L.S.)
	BUTE,	(L.S.)
	T. M. HARDY,	(L.S.)
	G. R. ROBINSON,	(L.S.)
	ARON CHAPMAN,	(L.S.)
	F. BEAUFORT,	(L.S.)
25th February, 1836.	OCTAVIUS WIGRAM,	(L.S.)

To the Editor of the Nautical Magazine.

East India House, 2d July, 1836.

SIR,—With reference to my letter of the 15th May last, (June in M.S.) forwarding a copy of a notification, dated Fort William, the 27th October last, as to the probable discontinuance of the Light of Point Palmyras during the South-west Monsoon of the

present year; I am commanded to inform you, that the Court of Directors of the East India Company have now received from the Government of Bengal a notice, dated the 21st January last, respecting the abandonment of the said Light, with instructions for vessels seeking a pilot for the River Hooghly. I am further commanded to transmit you a copy of the said notice, for the purpose of insertion in the Nautical Magazine, for the information of mariners.

I am, Sir, your most obedient humble servant,

JAMES MELVILLE.

NOTICE.—*Abandonment of the Light at Point Palmyras, with Instructions for vessels seeking a pilot in the River Hooghly.*

The encroachment of the sea on the Island of Mypurrah, commonly called Point Palmyras, rendering it necessary to abandon the Light at that place, Notice is hereby given, that the Light will be forthwith abandoned accordingly; and that from the 15th of March till the 15th September, the period during which the pilot vessels cruise off Point Palmyras, until further notice, the senior pilot at the station will burn a blue light, and immediately after fire a rocket, every half hour, during the night, commencing at 7 P.M. and ending at 5 A.M.

2. The vessel on board of which such senior pilot may be, will be instructed to take up a position, the point bearing W. by N., distant eighteen miles, and in eighteen or twenty fathoms water, and to keep in that position during the night as near as possible.

3. The simultaneously firing a rocket with the burning of a blue light, is ordered, to distinguish the pilot's station off the Point, from the floating-light vessel at the entrance of the eastern channel.

4. The pilot vessels during the above period cruise in the day off Point Palmyras, anchoring during the night in a line east and west, in latitude 20° 42′ to 20° 48′ north, with the point bearing N. to W. by S.; but the senior officer's vessel, shewing the blue light and firing the rocket, will be stationed as above. If, however, about the beginning of September the wind comes from the eastward, or the weather assumes a threatening appearance, the pilot vessels necessarily haul off to the eastward, and may be found in a line between the point and the floating-light vessel at the entrance of the eastern channel; and vessels approaching the station about that period, with the wind hanging to the eastward, or the weather having a threatening appearance, are accordingly recommended on no account to approach the point, but rather to endeavour to make for the floating light at the entrance of the eastern channel. And it is further notified, that after the 15th September no pilot vessel will be found to the westward of the western sea reef.

5. From the 15th September to the 15th March, the pilot vessels cruise during the day between Langorn Sand and Western Ska Reef, anchoring in the night east and west of each other, in latitude 21° to 21° 10′ north.

6. Vessels approaching the station, on seeing the pilot vessels, are requested in the day to make for that vessel, on board of which they will see a large red flag flying at the main, whenever they can do so without great inconvenience or delay. In the night the vessel having the next turn pilot on board, is ordered, between the 15th March and 15th September, while the vessels cruise off Point Palmyras, to burn a maroon every half hour during the night, or one quarter of an hour after the burning of the blue light and the firing of the rocket; and between the 15th September and the 15th March, at the floating-light station at the entrance of the eastern channel, every hour, and in thick weather every half hour; and vessels are requested, in like manner, to seek their pilot in the night from that vessel. It being understood, however, that any pilot vessel which may be first seen, is bound immediately to use every exertion to put a pilot on board, night or day, without referring to any turns or rotations; and that this latter is only allowed when no delay is occasioned thereby.

By order of the Marine Board,

(Signed) C. B. GREENLAW, Secretary.

Fort William, the 21st January, 1826.

HARBOURS OF REFUGE.

IN our April number we congratulated our seafaring friends on the appointment of a Committee to inquire into the subject of Harbours of Refuge on the eastern coast of England—a question of no trifling nature, in this sea-girt isle; and we now lay before our readers the Report of this Committee, reserving some remarks on the valuable labours of the gentlemen composing it, for another opportunity.

1. That it appears to your committee, that from the Frith of Forth to the mouth of the Thames there is no harbour which, in the strict acceptation of the term, can be called a Harbour of Refuge; that all are tidal harbours, and only accessible at certain times of the tide.

2. That it appears to your committee, that vessels engaged in the coasting trade are particularly exposed to severe on-shore winds from the north, north-east, to south-east.

3. That it appears to your committee, that there are three harbours upon that coast, Whitby, Scarborough, and Burlington, which have been long maintained under the authority of often-renewed acts of parliament, by a small passing toll on coal, in aid of the local funds which are levied at those ports; for Whitby a toll is

levied of ½d. per Newcastle chaldron, or 2d. on ten ton per London measure; for Scarborough ¼d. per Newcastle chaldron; for Burlington ¼d. per Newcastle chaldron, or 1d. on ten ton per London measure:—The last act for Whitby Harbour was passed in the year 1827, and has no limitation; the last act for Scarborough Harbour was passed in the year 1823, for twenty-one years; the last act for Burlington Harbour was passed in the year 1816, for twenty-one years.

4. That it appears to your committee, that although under perculiar circumstances the harbour of Whitby has afforded protection to many vessels, yet that it is very dangerous to enter in a gale of easterly wind blowing on shore; that there is no safe roadstead; and that, from the construction of the piers, there is so wide an opening to the swell from the north-east, that vessels cannot ride in it safely during a gale below the bridge.

5. That it appears to your committee, that there is no safe roadstead at Scarborough in an on-shore wind; that although, in the present state of the harbour, the entrance in a severe gale of wind on shore, is attended with great danger, yet that as many as an hundred and seventeen vessels have taken refuge there during one storm; and that in the course of fifteen years one hundred and eighty-four vessels have found refuge there in a disabled state, most of which, but for the existence of that harbour, must have been lost:—A plan for the improvement of that harbour has been submitted to your committee, and it is the opinion of competent witnesses, that if that plan were carried into effect, it would afford a safe and more capacious harbour, and easy of acess during on-shore gales, particularly to vessels embayed between Flamborough Head and Whitby Rocks:—The expense of these improvements is estimated at £49,000; that the local dues and tolls collected from vessels trading to the port are quite unequal to the support of the existing harbour.

6. That it appears to your committee, that Burlington bay affords peculiar advantages to the coasting trade:—The promontory of Flamborough Head running out nearly five miles in the sea, and on which a lighthouse is erected, forms a natural breakwater, under which vessels of any depth, and to any number, can ride safely in northerly and north-easterly gales; that although the bay is open to the east and south-east, yet that a considerable protection is afforded by the Smithwick Sands; that the anchorage is good; that during low water, vessels can bring up under Flamborough Head in almost any situation; and that there is no other place between the Frith of Forth and the Humber, where a ship can stop a tide, to get into a harbour with safety.

7. That at the bottom of this bay, distant from a mile and an half to two miles from the best anchorage ground, Burlington Harbour is situated:—that, in consequence of the dilapidated state

of the harbour, the commissioners have, since the passing of the last act, proceeded to construct new works, which were necessary for its maintenance and improvement:—that about 60 yards of the new north pier, being the outer end, are completed:—that it is the opinion of Mr. Walker, an eminent engineer, who has lately examined the harbour, that these works are well constructed, and that, if fully carried into effect, with some alterations in the proposed plan for the southern pier, the harbour would be more easy of access, and more capacious:—that Mr. Walker estimates the charge of finishing these works at about £57,000.

8. That it appears to your committee, from a statement of the funds presented during the session to the house of commons, and inserted in the minutes of evidence taken before the committee, that more than one-third of the expenditure which has taken place since the year 1816, has been defrayed from the local funds; but that, unless adequate funds in aid of the local are granted, not only the works now in progress must be suspended, but that the whole harbour will shortly go to decay:—that it is, however, the opinion of the clerk to the commissioners, that if the harbour were once completed, that the local funds would be sufficient for its maintenance.

9. That it appears to your committee, that from thirty to forty vessels on an average yearly run for this harbour in different states of distress; and that on the 1st of last May not fewer than twenty-six vessels took refuge in this harbour during a very severe storm:—but your committee are of opinion that a very imperfect view of the importance of this harbour to the coasting trade would be taken, if it were confined merely to the number of vessels which may actually seek there an asylum; upon the frequent and long continuance of north-easterly gales, the vast number of vessels which are at those times collected in the bay, the large supplies of provisions and other necessaries which are frequently required, the very heavy surf which during continued north-easterly gales does not allow a vessel to land on the open beach, the high charges which would under such circumstances be made by boatmen from the shore,—when all these facts are carefully weighed, then only can the value of such a harbour be duly appreciated.

10. That it appears to your committee, that a very convenient and capacious harbour which would be accessible in north-easterly winds, and at all times of the tide, could be formed at Redcar, near the mouth of the Tees; where nature appears to have done a great deal towards the formation of such an harbour; also, that a spot a little further south than Scarborough, called Filey bay, affords great facilities for the same purpose. But your committee cannot recommend to parliament, that works of such magnitude, necessarily attended with a very heavy expenditure, should be provided for by a passing toll, either upon vessels or their cargoes:

whether the interests of humanity, or other great national objects, may require that such ports should be formed and kept up at the public expense, are points upon which the committee are not prepared to offer an opinion.

11. That it appears to your committee to be of vast importance, that every possible facility and security should be afforded to the very extensive coasting trade of this part of the empire, particularly to that portion of it which is employed in the coal trade, on which the regular supply, and consequent cheapness, of so necessary an article of consumption to this vast metropolis mainly depend, that this constantly increasing demand can only be regularly met by an uninterrupted intercourse at all seasons of the year, between London and the ports of exportation on the north-east coast of England; that the vessels so engaged are during many months of the year exposed to violent gales of on-shore winds, on an iron-bound coast, to the great danger of life and property.

12. That it appears to your committee, that although much evidence of a conflicting nature (both with respect to the general effects of Harbours of Refuge, and the proper means of their support) has been offered to your committee, upon a careful consideration of all the circumstances of the existing harbours, to which their attention has been directed, with reference to their situation, their construction, their maintenance, the state of their funds, the sanction of the present system by oft-renewed acts of parliament, combined with a due regard to the claims of humanity, and the safety of the valuable lives of an immense body of seamen, your committee recommend,

First. That a passing toll, not exceeding the present amount, upon all coals exported from the ports on the north-eastern coast of the kingdom, passing southwards, should be continued or granted under due regulations.

Second, That as soon as the works now in progress, or the proposed improvements in the existing harbours, shall be completed, the said tolls shall cease, or be modified in such manner as parliament may limit.

Third, That vessels engaged on voyages in which they have paid the passing tolls shall be exempt from all charges on entering the said harbours in a state of distress during such voyage.

13. That it appears to your committee, that on the north-west coasts of Wales, there is a great deficiency of Harbours of Refuge for ships sailing to and from Liverpool; that great facilities are offered for such an harbour between the Great and Little Orm's Head, which would prevent very great losses, as appears by a return extracted from Lloyd's books; and would be a good station for pilots required for taking vessels into the Mersey.

QUESTIONS.	VERNON, 50 Guns.—Captain *Symonds*.				PRESIDENT, 52 Guns.—As American President.		BARHAM, Razée, 50 Guns.—Sir *William Rule*; Sir *Henry Peake*.			
	1 Sept. 1832.	From 1 Jan. to 31 Dec. 1833.	From 18 July to 31 Dec. '34.	From 1 Jan. to 31 Dec. 1835.	From 18 July to 31 Dec. '34.	From 1 Jan. to 31 Dec. 1835.	From 23 Mar. 1831, to 31 Dec. 1832.	From 1 Jan. to 31 Dec. 1833.	From 1 Jan. to 1 May, 1834.	From 10 June to 31 Dec. 1835.
1. Draught of water Forward?	21 ft.	21 ft.	20 ft. 11 in.	20 ft. 11 in.	18 ft. 8 in.	17 ft. 10 in.	20 ft. 5 in.	20 ft. 5 in.	20 ft. 5 in.	20 ft. 7 in.
2. Draught of water Abaft?	21 ft. 9 in.	21 ft. 9 in.	22 ft. 2 in.	22 ft. 2 in.	21 ft. 11 in.	22 ft. 4 in.	20 ft. 9 in.	20 ft. 9 in.	20 ft. 9 in.	20 ft. 7 in.
3. Height of midship port?	9 ft. 3½ in.	9 ft. 3½ in.	9 ft. 6 in.	9 ft. 6 in.	8 ft. 9 in.	8 ft. 9 in.	8 ft. 7 in.	8 ft. 7 in.	8 ft. 7 in.	8 ft. 8 in.
4. Quantity of ballast necessary to bring her to her best trim?	68 tons	68 tons	73 tons 16 cwt. on board	73tons 16 cwt.	153 tons	193 tons	70 tons	70 tons	70 tons	unknown; 58 tons on board.
5. Quantity of water she then stows?	271 tons	271 tons	253½ tons	253½ tons	172½ tons	189 tons	178 tons	178 tons	178 tons	201 tons.
6. How does she stow her provisions?	6 months' and 8 months' bread & spirits	8 months' bread and spirits, and 6 months' of all other species					the bread-room will stow 640 bags without starting, which is equal to 5½ months for the present complement of 455 men. The spirit-room will stow 6 months' proportion; of all other species 5½ months can be stowed.			
7. How many days of the following articles does she stow for her complement of men Provisions?			168 days	168 days	84 days	84 days (1)				140 days.
8. Bread?			168 days	168 days	112 days	112 days (2)				140 days.
9. Spirits?			224 days	224 days	112 days	112 days (3)				160 days.
10. Does she ride easy at her anchors?	yes	yes	easy	easy		yes, as far as tried	not known; having never yet rode out a gale with much sea			easy.
11. How many degrees does she heel with a fresh breeze under single reefed topsails and topgallant sails?			no pendulum on board	4½°	10°	7° Since the last Report the ballast has been restowed & 40tons more taken in		7°	7°	6° to 8°.
12. How many degrees does she heel with a strong breeze under double-reefed topsails without top gallant-sails?			cannot tell below which tack she is on	5° to 6½°	10°	8° she is much stiffer since the above period		9°	9°	uncertain.
13. How does she stand under her sails?	very well	very well	well				remarkably stiff	remarkably stiff	remarkably stiff	
14. How does she carry her lee ports?	high	high	well	well	a single-decked ship	well	very well	very well	very well	well.
15. Does she roll easy or uneasy in the trough of the sea?	no means of ascertaining (4)	uneasy, with a quick jerking motion	easy so far as we have seen	easy, so far as we have seen	easy	easy Restowing the ballast, and increasing the quantity,	very easy	very easy	very easy	easy.
16. Does she pitch easy?	deep, but strains nothing	very deep (5)	yes	yes	easy	easy has not altered her	easy, but deep	easy, but deep	easy, but deep	easy.
17. Is she, generally speaking, an easy or uneasy ship?	easy	very uneasy	easy	easy	easy	remarkably easy motion in any of these points	an easy ship	an easy ship	an easy ship	easy.
18. How does she in general carry her helm, with all sail set, or with treble-reefed topsails and courses?	from a half to a whole turn a-wthr.	from a half to a whole turn a-weather (6)	a little a-weather	from 2 or 3 spokes to half a turn a-wthr.	two or three spokes a-weather	three spokes to half a turn a-weathr.	on a wind on the starboard tack a turn a weather; on the larboard tack, under the same circumstances, only half a turn			slack or lee on the larbrd. tack, a-weather on the starboard tack; unknown.
19. How does she steer?	very easy & quick on her helm	easy and quick on her helm	easy and well	easy	easy and well	easy and quick	easy on the larboard tack; hard on the starboard			well.
20. How does she stay?	very well	very well in smooth water, but uncertain against a head-sea	well	well	very well	well; never has refused stays	well	well	well	well.
21. How does she wear?	very well	very well on all occasions	well	well	rather long in wearing	very quick since her trim has been alter'd	well; quicker than ships in general, particularly on the larboard tack			well.
22. Is she weatherly or leewardly, *compared with other ships?*	weatherly	very weatherly	not tried by us	very wethrly.	have not had a trial	very weatherly, has weathered upon everything we have sailed with	weatherly	weatherly	weatherly	for want of sufficient false keel, this depends on circumstances of speed, wind and weather. unknown.
		has not been tried	not tried by us	not tried by us	never has been hove to	not ascertained	not known; either with a main topsail aback, or under a storm staysail			

		knots. fms.	knots. fms.	knots. fms.	knots. fms.	knots. fms.	knots. fms.	knots. fms.	knots. fms.	knots. fms.	knots. fms.
She has run per hour by the log with as much wind as she could safely bear,	24. to 30. close hauled, close hauled, with smooth water. — 24. Under whole or single-reefed topsails, and topgallant-sails?	9 6	9 6	10 4	10 4	9 —	9 —	10 6	10 6	10 6	10 —
	25. Under double-reefed topsails?	9 6	9 —	10 4	10 4	. .	not ascertained	9 —	9 —	9 —	uncertain.
	26. Under courses?	never tried	never tried	. .	. .	. .	. ditto .	. .	. .	. .	.
	close hauled, with a head-sea. — 27. Under double reefed topsails and topgallant sails?	. .	. .	9 4	9 4	not tried	10 —	. .	10 —	10 —	uncertain.
	28. Under close-reefed topsails and courses?	. .	. .	never tried by us .	never tried by us .	. .	not ascertained; 10 knots under trebled reefed topsails & courses	. .	9 —	9 —	untried.
	29. Large, under all sail that could with propriety be set?	11 14	11 4	12 knots in a moderate brz. with topgalnt stdng. sails & main royal set	12knots in a moderate brz. with topgalnt stdng. sails & main royal set	10 4	12 4	12 6	12 6	12 6	12 2
	30. Before the wind, under similar circumstances?	never tried	8			not tried .	11 —	12 4	12 4	12 4	unknown.
31. What is her best point of sailing?		by the wind	. . by the wind in smooth water, or a following sea, or a point free	. . should say to windward, compar'd with other ships .	. . close-hauled, compared with o'r ships	.. uncertain, comprd. with other ships .	.. compared with other ships, beating to windwrd. or wind a-beam blowg. strg	.. wind on the beam . .	.. wind on the beam . .	.. wind on the beam . .	uncertain, compared with other ships; depends on state of wind and weather.
32. Comparative rate of sailing with other ships?		beats every thing except the Snake, and beats her sailing large	(7)	. . it appears to us by the wind, but never tried .	superior	.. only tried with H.M. brig Wasp, sparing her studding-sails .	.. has beaten everything we have seen since in her present trim; (8) . .	(9)	. .	. .	well.
33. Is she, generally speaking, a well-built and strong ship, or does she, on the contrary, shew any unusual symptoms of weakness?		well built, and strong	(10)	.. we have not sn. any symptoms of weakness .	(11) . .	strong . .	strong . . .	.. she is, generally speaking, a well-built and strong ship			shews no symptoms of weakness.
REMARKS; stating the grounds of such of the present answers as differ from those in the last Report, and any other observation tending to form an accurate judgment on the qualities of the ship?		. . .	whilst cruizing in the mouth of the channel, previous to being ordered on foreign service, there was no occasion to close-reef the topsails, or send topgallant sails on deck; and although she experienced severe weather in the North Sea, she was powerful enough to overcome the short sea which runs there, and which goes down as soon as the wind falls, and is very different from the sea experienced in the Atlantic, where it runs highest when the gale is subsiding.	.. have not seen any former report of the ship's qualities .	.. since last report have had many opportunities of trying with other ships .	. . .	.. explanations are given where the answers differ from the last report .	..since the last report the ship has been tried when very light, and 6 ins. by the stern is in consequence considered her best sailing trim, instead of 4 ins., as in last report.	. . .	. . .	first report.
		Sir *F. Collier*, Captain. *W. Brodie*, Master. *R. Roberts*, Carpenter.	Sir *G. A. Westphal*, Captain. *M. H. Sweny*, Commander. *W. Brodie*, Master. *J. Mears*, Carpntr.	*J. M'Kerlie*, Captain. *M. Bradshaw*, Master. *Josh. Mears*, Carpenter.		*Jas. Scott*, Captain. *Wm. Brodie*, Master. *W. Freeman*, Carpenter.	*Jas. Scott*, Captain. *M. H. Sweny*, Commander. *W. Brodie*, Master. *S. Hoare*, Carpenter.	*H. Pigott*, Captain.	*H. Pigott*, Captain. *J. Davies*, Master. *Wm. Searle*, Carpenter.	*H. Pigott*, Captain. *J. Davies*, Master. *W. Mills*, Carpenter.	*A. L. Corry*, Captain. *John Davies*, Master. *E. Harvey*, Carpenter

(1) Would stow 6 months' provisions, if 6 feet of orlop was thrown into the after-hold ——— (2) Would stow 6 months' bread, was the magazine reduced. ——— (3) Room for the extra spirits would be found in the after-hold, with the above alterations. ——— (4) Not having been in a heavy sea. ——— (5) And more so than any ship of war we have ever sailed in, and when pressed with sail in a heavy sea, so much so as to endanger the bowsprit and masts. ——— (6) With fresh or strong breezes, when there is not a heavy head-sea; but with either strong or light breezes, and a head-sea, she has required lee-helm. ——— (7) Was beaten by H.M. schooner Skipjack, Zariffa yacht, 9th July, 1833, going free with light winds and a head-swell; but beat them considerably when the wind freshened and brought a following sea; was also beaten by the Fly, running out of Port Royal, May 19, 1833, with light winds and a heavy sea, and again by the said sloop, and Pincher schooner, off Bermuda, (with a good breeze but a head sea,) the Fly having shortened sail to her topsails, and with that sail having run on the Vernon's weather-bow three miles, between 10 *a.m.* and 2 h. 30 m. *p.m.* She has beaten everything in smooth water or a following sea. ——— (8) When in former trim, and deeper in the water, Vestal had an advantage over her in light winds on the quarter; but on other points of sailing she was beaten by the President. ——— (9) The Alfred, Winchester, Curacoa, and Victor, have been particularly tried with: the Barham had the advantage of each. H.M. brig Pantaloon, when a yacht, beat the Barham very considerably on a wind, but not going free. ——— (10) Strained and opened so much in the waterways on the main-deck, during the gales of wind on the 1st, and other days in February, in the channel, as to make it very uncomfortable to the officers and ship's company, by the water leaking down on the lower deck. ——— (11) Generally speaking, we consider her to be a strong built ship, and well put together; yet between the fourth and fifth port from aft on the larboard side of the main deck, there appears to have been some green timber put in, which has shewn itself; viz. one spirkitting plank, and two ditto of quickwork decayed; one timber head in the boatswain's cabin, and one beam-end slightly decayed; four top-timbers, two slightly defective, from 1 to 1½ in. in depth, and from 6 to 11 ins. in length, and 3 to 4 in width; the other two partly taken out and repaired with new wood.

Naval Chronicle.

Rear-Admiral Sir Charles Paget, G. C. H., has been appointed to command the squadron of line-of-battle ships lately commissioned, consisting of the Hercules, 74, flag-ship, Asia, 84, Bellerophon, 80, Pembroke, 74, Cornwallis, 84, Vanguard, 80, Talavera, 74, and Minden, 84. Captain W. Hillyar, of Stoke, has been appointed the Rear-Admiral's Secretary. The squadron has put to sea from Spithead. The Vanguard, constructed by Sir William Symonds, took a week's cruise previously, for the purpose of stretching her rigging, &c., and, we understand, is likely to realise the best hopes of her projector. In moderate weather, under single-reefed topsails, topgallant sails and courses, she went 9.2 knots by the wind, laying within five points of it; her angle of inclination at the same time being not more than 5°. It appears to be the opinion of competent judges, that she will prove herself in all respects a perfect man-of-war. Sir William was not on board her during the cruise, as stated, but goes in her with the squadron.

The Inconstant, 36, constructed by Captain Hayes, C.B., was launched on the 16th June, at Portsmouth, and has been commissioned by this officer. The Pique, 36, has also been commissioned by her former commander, Captain the Hon. J. Rous, at Portsmouth, and both are now nearly ready for sea.

The Volcano, a new steamer of 715 tons, built from the lines of the Hermes, was launched on the 29th June, at Portsmouth, and will be fitted at Woolwich with engines. The Firefly and Alban steamers have been commissioned also, at Woolwich.

A large steamer, to be called the Gorgon, is to be laid down at Pembroke. She will be about 1100 tons, and armed with large guns between decks, similar to those of the Phœnix.

The Scylla, 18, has been commissioned at Sheerness, by Commander J. Robb.

The Rapid, Lieut. Patten, arrived at Portsmouth on the 1st July, and on the 3d sailed for Sheerness to be paid off. The same officer fitted her out at Portsmouth in September, 1833, and has commanded her ever since on the South American station. The Rapid brought home invalids, under the care of Mr. J. Read, among whom are, Capt. G. W. Willis, late flag-captain of the Dublin; Lieut. Harris, of the Sparrowhawk; Lieut. Collins, Sulphur; Mr. Spear, Harrier; and Lieut. G. Mc. Adam, on leave; besides about £30,000 in treasure.

The Savage, 10, Lieut. Loney, arrived at Plymouth from the West Indies, on the 9th July, and went into Hamoaze to pay off. The Plover packet is to be paid off at Plymouth; and the Hope

and Magnet were commissioned there on the 14th July, the former by Lieut. Rees, and the latter by Lieut. W. S. Griffith. The Minden has returned from the north coast of Spain. It is stated that her rigging is so defective, that it must be replaced with another suit. The Phœnix and Meteor steamers, with the Viper schooner, and a French man-of-war brig, are at Passages; the Castor is at Santander; and the Tweed, Pearl, Royalist, Salamander, and Comet, steamers, are at San Sebastian.

Captain Basil Hall, R.N., has been created a Commander of the Legion of Honour by the King of France, in consideration of the services which he has rendered to the sciences, and particularly those of navigation and astronomy.

Pier at Portsmouth.—Among other improvements going forward, we observe, that a landing pier is proposed for steamers at Portsmouth. It is high time that such a convenience to the public was thought of; for the scenes of danger and confusion which we have witnessed, from boats crowding for passengers alongside of these vessels on their arrival, are any thing but desirable. The question, it appears, however, is, where to construct the pier; and the Hard at Portsea, the Point at Portsmouth, and the Stage at Sally-Port, have each been proposed as sites for its erection. Both the former and the latter appear to us objectionable; the first, on account of too much exposure to the weather, so as to render the pier unavailable sometimes; and the latter, to be too far up the harbour, and certainly out of the way for those persons going only to Portsmouth. We consider the Point to have peculiar claims from its position, for the site of such an establishment.

The Euphrates Expedition.—Accounts of the most satisfactory kind have been received from the Euphrates expedition as late as the 17th May, at which time the vessels were at anchor off Dere. We apply this expression not only to the present prospects of the whole question of the passage by the Euphrates, but to the general state of the party, and to the admirable condition of the vessels. It appears that they have answered the most sanguine expectations both of Colonel Chesney and their builders, Messrs. Laird, of Liverpool. When it is considered that, with regard to the river, the work of the vessels has hitherto been that of an exploring expedition carrying on a survey, in which it must be expected that they would frequently get aground, and that the lower they descend towards Bussorah the fewer obstacles will be met with, both from want of water and the current, there appear to us well-founded hopes that the expectations of the persevering leader of the party, and the original projector of the whole affair, will be fully realized. Such delays, however, will not interrupt the passage of the vessels in future, and an intimacy will soon be acquired with the various channels, by which a rapid communica-

tion will be kept up between Bussorah and Aleppo. Colonel Chesney expected to return from Bussorah to be at the port of Aleppo, which he had chosen on the Euphrates, by the 27th of July, and we find that a steamer is ordered to convey the mail, which he will bring to Malta. The bugbear of attacks from the Arabs, like most others, appears to have been magnified. We find, that, instead of attacking the steamers, they are most friendly towards them, and Colonel Chesney knows how to avail himself of every opportunity to impress them with an idea of his power. The steamer Euphrates paddles generally about ten knots per hour, between four and five of which is against a current when going up the river, but this is only in particular parts. Most of our readers take an interest in this expedition, and in our last volume, at page 202, they will find a map describing the course of the river, and the passage by the Red Sea to India, as well as by this route. If we imagined that any of our readers were not interested in the proceedings of this little handful of Englishmen, we are quite sure they would become so when they look over the list of subscribers to the distressed Irish clergy, and find them offering the sum of seventy pounds for their relief, even from the banks of the Euphrates, the river of Scripture!

COURTS MARTIAL.—A court-martial has been held on board the Royal Adelaide, on Mr. W. Mc.Auly, Assistant-Surgeon of the Linnet packet; the charge preferred against him by his commander being that of drunkenness. Captain-Superintendant Ross, C.B., was the president. The charge was proved, and the prisoner received the mitigated sentence of being discharged from his ship. —A court-martial has also been held on board the Britannia, to try Mr. Robert Rogers, late Master of the Rover, on the charge of an indecent assault on a boy. After two days' investigation the court determined, that the charge had not been proved; and on returning Mr. Rogers his sword, the president, Rear-Admiral the Hon. Sir Charles Paget, pronounced a high eulogium on the character and general good conduct of Mr. Rogers. The principal witnesses were immediately directed by the Commander-in-Chief, Admiral Sir P. C. H. Durham, to be taken into custody, there being every appearance of the whole affair having originated in a foul conspiracy against that officer.—Rumours of another court-martial on board the Malabar, at Cadiz, arising from a marine having struck and wounded a midshipman of that ship, have also reached us.

LAUNCH.—A fine steam-vessel, called the "Ocean," was launched in the afternoon of the 1st of July, from the yard of those celebrated builders, Messrs. Fletcher and Fearnall, at Deptford. She belongs to the General Steam Navigation Company, and is an elegant model. Her measurement is 600 tons, and she will be provided with a pair of engines of 90-horse power each.

NEW HARBOUR.—A floating harbour is forming at Cardiff, and is now nearly completed, the Marquis of Bute having employed more than four hundred men in the works. The trade of the port will, no doubt, be much improved by its construction.

ARCTIC VOYAGE.—Captain Back, in H.M.S. Terror, on her way to Wager River, was off the Orkneys on the 23d of June, all well.

NAVIGATION.—We are informed that Lieut. Raper, R.N., has a work in a forward state for the press, on the subject of Navigation and Nautical Astronomy. In compiling it, we believe he has forsaken the beaten track of his predecessors, and followed a plan of his own.

NEW ANCHOR.—We understand, that an anchor of a new construction has been made at Portsmouth dockyard, called Morgan and Little's anchor, said to be a far more convenient and equally as efficient an anchor as that now in use. The several parts are formed of distinct pieces of iron, so that it may be stowed away with great facility, and the pieces conveyed to any ship requiring, by a boat which could not convey the entire anchor. The arms are formed of one piece, the shanks passing through the crown; the stock is also separate, and secured to the shank when required; the whole being put together in a short space of time. There are few parts of a ship's furniture of such importance as the anchor, and few which require more attention to its improvement.

It is gratifying to have to record the admiration of our commanders for their kind-hearted and excellent conduct towards those who sail with them in their perilous voyages, when such behaviour cannot fail being most appreciated. We understand that Captain Smith, commanding the Cosmopolite, between Plymouth and New York, has been presented with a handsome silver snuff-box, having the inscription, "To Peter Smith, Captain of the Cosmopolite, from the passengers." This is as it should be, and we again repeat our satisfaction in recording it.

BANKS OF NEWFOUNDLAND.—We understand that the French Government has determined on making a survey of the banks of Newfoundland, and has sent a brig out, under the command of an experienced and scientific officer, for that purpose. Our seamen will appreciate the important labours of this officer on ground which is proverbially English, and the coast of which occupied British officers formerly under the orders of our Government. Indeed, it is rather remarkable that we should have surveyed the shores of our colony, but left the banks forming the fishery ground, till their examination is taken up by the French.

GOVERNOR OF MADRAS:—Lieut.-General Sir Peregrine Maitland arrived at Portsmouth from Brighton, in the Fanny yacht, on the 25th June, and embarked on board the Free Trader, which sailed the same day for India.

SHOAL OFF MARTINIQUE. — The French frigate Didon of 60 guns, with the flag of Rear-Admiral de Bretonnaire, got on shore in May last running down the south side of Martinique. The shoal on which she grounded lies at a considerable distance from the shore, but is said not to be laid down. The Danish brig-of-war Alert, with some island vessels, proceeded to her assistance, and after much difficulty she reached Frederickstadt. We have no doubt that the alleged want of information respecting this shoal will be supplied by the French officers.

DRY-ROT.—We endeavoured to make something out of the report of a committee of learned men which investigated this important subject at the Admiralty a short time ago, but we were entirely at a loss to ascertain whether the preparation used by Mr. Ryan was recommended for adoption or not. However, whether it was or was not, appears to have had but little influence on its being pretty generally introduced, for we find it recommended on all hands, and we believe that none of the evils expected to arise from it have been discovered in the Charles Enderby, which ship was entirely saturated with it.

GOVERNOR OF SOUTHERN AUSTRALIA.—Captain John Hindmarsh, who goes out in the temporary command of H. M. ship Buffalo, was at Spithead on the 16th July, expecting to sail immediately for his destination, the Government of Southern Australia. The Buffalo takes out a large party of settlers.

ROYAL NAVAL SCHOOL.—The report of the council to the general meeting of the friends and supporters of this establishment, on the 31st of May last, is as satisfactory as can be desired, and, in common with them, we rejoice to see an establishment of so much importance to this country in so prosperous a condition. The Rev. T. Myers, M.A. of Trinity College, Cambridge, has been appointed head master, and entered on his duties with the full determination, that "the Royal Naval School shall rival any establishment in the kingdom for the education of youth." This is as it should be, and we have no doubt the council will support to their utmost a resolution embodying in a few words the object of their own unrequited, arduous, and praiseworthy labours. We observe, that a fund has been commenced for the purpose of erecting a building suitable in all respects for the reception of 300 pupils, the present number being about 170; and we do not hesitate in saying, that it should be generally supported by a British public, when they are told that the sons of naval officers are to be benefited thereby. It has been said that the king had granted a piece of ground in Greenwich park for the site of the building; but we find no mention of it in the council's report, and believe it to be entirely erroneous; although his Majesty is well known to take the highest interest in the success of the school, and contributes £100 a year to its funds from his own purse.

SHIPWRECKS.—We find the following entry in the minutes of of the House of Commons:—" 14th June, 1836. Shipwrecks. Select Committee appointed to inquire into the causes of the increased number of shipwrecks, with a view to ascertain whether such improvements might not be made in the construction, equipment, and navigation of merchant vessels, as would greatly diminish the annual loss of life and property at sea: Mr. Buckingham, Sir T. Troubridge, Mr. Clay, Mr. Barnard, Captain Alsagar, Lord Viscount Sandon, Sir Richard Vyvyan, Mr. Ingham, Mr. G. F. Young, Mr. Oswald, Mr. Emmerson Tennent." This is a subject, the importance of which no one can possibly deny, and among the friends of British seamen we rejoice to see it at length taken up. So deeply have we been impressed with its importance, not only as far as the lives of seamen are concerned, but also with regard to the effects of the continual losses on British property, we were determined, on commencing this work, to preserve a careful register of the wrecks of British shipping as they occurred, and as we could best obtain their particulars. We have not, perhaps, been so fortunate in preserving so correct a register as we wished, as many vessels whose names are unknown, and others, the accounts of which may not have reached us, we have necessarily been unable to record; and as we confined our list to British shipping, it was incumbent on us to be the more careful of what we recorded. We have reason for believing, therefore, that our register is far within the limits of the number of British vessels actually lost. The numbers registered, are as follows:—

Year 1832, wrecks of British shipping, 404, see vol. I. p. 558.
— 1833, ——— 680, — vol. II. p. 750.
— 1834, ——— 344, — vol. III. p. 766.
— 1835, ——— 253, — vol. IV. p. 765.
— 1836, to ——— 312,*— vol. V. p. 509.

Making a total of 1993 vessels in the short space of four years and six months, or, for each year, 443 very nearly. The loss of life and property here is painful to contemplate; indeed, it was high time that some member of parliament took up the subject; we will venture to say, that if he succeeds in removing any one of the causes of this fearful loss, he will have done a service to his country, and the labours of this committee will be productive of more real benefit than those of many others which have received the sanction of parliament. We are informed that this committee has been referred to the pages of the Nautical Magazine for information, not only on the subjects of wrecks, but on some of its causes. The valuable information of some of our corres-

* Many of these belong to the preceding year, which accounts for the number of it being apparently so much within the others.

pondents will, no doubt, afford them some sound practical knowledge, which will be of service to them: at all events, it should be considered by any one who is not prejudiced by interest, when engaged in such a cause. We shall look for the report of this committee, and the evidence on which it will be drawn up, with much interest, and shall take the earliest opportunity, after its appearance, of laying it before our readers.

RECORD OF WRECKS.

THE FRANCIS SPAIGHT.—We scarcely remember having met a more distressing and shocking account of the miseries of shipwreck at sea, than that given of the Francis Spaight, a timber ship of 345 tons, from St. John's, in the *Times* of the 22d of June. It professes to be extracted from the *Limerick Star*, and, whether true or not, is too disgusting in its horrid details to enable us to lay it before our readers. Indeed, there are several passages in the narrative that appear to be deliberately worked up, without a due attention to what would probably be the truth on such a distressing occasion. We have no doubt of the fact of the vessel having been abandoned, and it is sufficient for us to preserve in that register of these events, which it is our purpose in future to record, a brief outline of this wreck. The crew consisted of fourteen men, unfit, it appears, to handle the ship. They sailed from St. John's on the 24th November, and on the 3d December the vessel broached to in a gale of wind, and lay a helpless log in the sea. Here the tale of misery begins; the vessel was soon on her beam-ends, and the crew, where they could, held themselves from being washed overboard or drowned. It is stated, that sixteen days were passed in this state, the vessel having merely settled to an upright position in the sea, and being full of water nothing could be obtained from below. The work of deliberate murder was now commenced, the lot of death falling on an unhappy boy named O'Brien, who was to supply food for the rest. The mode of putting him to death is minutely enough related, and in our minds creates suspicion of its truth. The usual consequences follow—and three more, it is stated, fall victims to the horrid effects of thirst and feasting on human blood. At length an American vessel, the Agenoria, bears down to their relief; the rest of the crew are carried on board of her, and treated with the utmost kindness.

THE OTTAWA.—This vessel was on her way home from Quebec, and was wrecked on the 1st of December, on the island of Anticosti, by which event the mate and two seamen were lost, the rest of the crew reaching the shore with the utmost difficulty. We are not aware of the precise position where they landed, but conclude that it was some distance from the provision posts established at

the S.W. and the S.E. ends of this island, and which places should be well known to our St. Lawrence ships.

The late winter, we are informed, has been one of more than usual severity in the severe climate of the St. Lawrence, and added greatly to the sufferings of the unfortunate crew. They were most of them frost-bitten in consequence, and two are stated to have died from its effects. A gentleman, his wife, and child were also among the sufferers.

THE HINE.—*The Hobart Town Courier* of January gave notice of this vessel being on shore in Jervis Bay, about eighty miles south of Port Jackson, with male prisoners (convicts) on board. The steamer Tamar was despatched to her assistance, and conveyed one hundred of the prisoners, with the guard, safe to Sydney; and the remainder were put on board H.M.S. Zebra and a revenue cutter, which were also sent to her assistance, with specie amounting to £40,000, for the commissariat department. The Hine is stated to have grounded on a sand bank a little *below* (?) Jervis Bay, having been driven up the coast by a foul wind. The boatswain is the only person stated to be lost. The vessel became imbedded six or seven feet in the sand, but there were hopes of recovering her, and that the greater part of the stores would be saved.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

Continued from page 318.

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS
286	Agenoria	Fife	Mobile	Liverpool	Coloradoes R.	April	Abd. & strippd.
287	Agnes	Nicol	Demerara	Clyde	Demerara	23 Mar.	On shore, full of water.
288	Agnes, No. 241,	raised and	carried into	Portsmouth	22d June		
289	Albany	Burder	Sunderland	Wick	Wick	23 May	Cargo lime.
290	Albion	———	Barbadoes	Liverpool	Turk's Island	29 Feb.	Crew saved.
291	Anfield	———	Liverpool	New York	Barren Island	7 June	Crew saved.
292	Aurora	———	Stockholm	London	Hasbro S.	24 April	Crew saved.
293	Backwell	Boat picked	up 30 Jan.	at Bourbon	"Backwell,	Londn.	Dowson," on it*
294	Catherine	Hogan	Her wreck	stated to	have been	seen at	sea 13th May.
295	Coquette	———	Whaler, re	ported: lost	previous to	4 Nov.	
296	Fame	Nish	Greenock	Auxlayes	La Folle R.	7 May	Crew saved.
297	Francis Spaight	———	St. John, N.	———	At sea	Dec.	Abd. some savd
298	Harrier	Harper	Lymington	Weymouth	Weymouth	25 May	
299	Hine	———	———	Sydney	Jervis Bay	Dec.	Crew, &c. saved
300	James	Place	Mobile	Cowes	C. Florida	prevs.	15 Apr. Cw. sav.
301	James Scott	of Dublin,	laden with	cork; seen	abandoned in	48° N.	8° W. 18 June.
302	James Laurie	———	———	———	Is. of Abaco		
303	Jane and Mary	———	Sunderland	Nore Sand	———	22 May	
304	John and Mary	of Liverpo	ol, timber	laden; seen	in July aban	doned	lat. 50°, lon. 18°.
305	Kitty	———	Wisbech	———	Wisbech	6 June	Capsised.
306	Mordecai	Sibly	———	———	Milford	12 June	By fire.
307	Ottawa	Boyle	Quebec	London	G. St Lawrnc.	1 Dec.	Three drowned
308	Persian	of	Sunderland	———	Bathurst H.	June	Wintered.
309	Poll	Winter	———	———	Weymouth	25 May	
310	Sarah	———	Liverpool	Lisbon	Not heard of	since	18th March.
311	Spring	Webster	Liverpool	Lynn	Off Portland	2d June	Crew saved.
312	Superior	Thomas	St. John's	Barbadoes	Abandoned	at sea.	Seen 28 May.

* She sailed from Mauritius 26th December, for Calcutta.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS: CAPTAIN (*Act.*)—C. Eden.—COMMANDERS—Hon. W. B. Devereux, (*Act.*) R. Hammond.—PURSER, T. Woodward.

APPOINTMENTS.

ALBAN, St. V.: *Assist. Surg.* W. Pattison.—ASIA, 84: *Mast.* T. Bull; *Vol. 1st Class*, H. Hegbert.—BELLEROPHON, 80: *Mate*, J. W. Gibson; *Mids.* C. R. Jackson, H. V. Craven.—BEACON, Surv. Ves.: *Lieut.* J. Williams; *Master, Act.* R. Hoskyn; *Second Mast.* J. F. Loney; *Assist. Surg.* R. D. Mitchell.—BRITANNIA, 120: *Mates*, C. Pigot, W. Reid, C. J. Postle; *Assist. Surg.* D. Deas; *Sec. Master*, H. Jackson.—BONETTA, 10: *Mast. Assist.* V. G. Roberts.—BUFFALO, Store Ship: *Master*, J. Wood.—COLUMBINE, 18: *Lieut.* A. S. Booth; *Mast. Assist.* E. Grant.—CALEDONIA, 120: *Lieut.* P. Davy; *Purser*, T. Woodward.—COAST GUARD: *Com.* J. Oake; *Lieuts.* J. F. Thompson, G. Franklyn.—CORNWALLIS, 74: *Capt.* Sir J. R. Rowley; *Sec. Mast.* E. Mallard.—DUBLIN, 50: *Lieuts.* J. Morehead, J. W. Morgan, J. Hirtzell, F. Drew; *Mast.* W. H. Thompson.—EXCELLENT: *Mids.* W. F. Lower, W. Moorsom; *Mates*, A. Lowe, R. D. Dalton.—FAIRY, Surv. Ves.: *Mast. Act.* F. P. Strong.—FLY, 18: *Com.* R. Elliot.—HERCULES, 74: *Chaplain*, Rev. E. Kemp.—HOPE, Packet: *Lieut.* W. L. Rees; *Mast.* F. Hale.—HORNETT, Rev. Cut.: *Lieut.* J. Taylor.—HARRIER, 10: *Lieut.* T. Chaloner.—HOWE, 120: *Mast.* E. Dunsterville.—IMOGENE, 28: *Mate*, J. Power; *Mids.* A. P. Ryder, T. G. Drake, R. A. Buchanan, R. A. Cochrane, A. B. Crawford.—LINNET: *Assist. Surg.* J. T. Louthian.—MAGPIE, Cutter: *Sec. Mast.* G. B. Harvey; *Assist. Surg.* J. M'Craith, M.D.—MAGNET, Packet: *Lieut.* S. Griffith; *Mast.* P. C. Bean.—MADAGASCAR, 46: *Lieut.* C. E. Powys; *Master Assist.* J. R. Duncan; *Mates*, W. Bligh, S. Pritchard, C. J. Clark, R. Atkinson; *Col. Mid.* L. W. Peyton; *Mids.* D. Sinclair, J. Hawkins, P. J. Maitland, J. S. Durell; *Clerks*, W. B. Scott, J. Wimson.—MALABAR, 74: *Lieut.* T. Mallock.—MELVILLE, 74: *Lieuts.* M. R. Lawless, T. Stephens, P. Baskerville; *Assist. Surg.* J. Sloane.—MINDEN, 74: *Chaplain*, G. W. Tucker.—ORDINARY, Plymouth: *Lieut.* E. Knapman.—PLUTO, St. Ves.: *Lieut.* F. Syer.—PEMBROKE, 74: *Mates*, C. J. Hoffmeirster, W. Crawford; *Assist. Surg.* J. L. M'Call.—ROVER, 18: *Com. Act.* R. Hamond.—ROYAL ADELAIDE, Yatch: *Mates*, W. E. Truscott, W. Ellis, G. F. Parker.—RAPID, 10: *Mid.* Lord F. Ker.—RINGDOVE, 10: *Surg.* J. Watson.—SALAMANDER, St. V.: *Com.* J. M'Dougall; *Mast.* R. H. Mattacott; *Purser*, C. Hillyar; *Surg.* W. Orr.—SEAFLOWER, Cutter: *Mate*, R. T. Davis.—SCYLLA, 16: *Com.* J. Robb.—THALIA, 46: *Lieut.* S. Booth; *Mast. Assist.* G. W. Jackson.—VANGUARD, 80: *Mid.* J. Backhouse.

Captain W. Hillyar has been appointed Secretary, and Lieut. C. C. Otway Flag-Lieut., to Admiral Sir Charles Paget.

Mr. John Hepburn, Assistant-Master-Attendant at Portsmouth Dockyard, (Master 1796), is to be Master-Attendant of the same yard, vice Atkinson, deceased; and Mr. F. W. R. Sadler (Master 1810), of the Buffalo, to be Assistant-Master at the same yard, vice Hepburn. The latter officer was Master-Attendant of Jamaica Dockyard.

Births.

At Clifton, the lady of Capt. Brace, R.N., of a daughter.

On the 8th July, at Ryde, Isle of Wight, the lady of Capt. Harrington, R.N., of a son.

The lady of Lieut. F. Hire, commanding H.M.R.C. Adelaide, of a still-born son.

On the 26th July, at Fetcham, Surrey, the lady of Capt. Wm. Barwell, R.N., of a daughter.

At Ilfracombe, on the 2d of June, the lady of Mr. James Walters, Master of the Alonzo transport, of a son.

On the 15th of July, at Lockyer-terrace, Plymouth, the lady of John Smith, esq., surgeon, R.N., of a son.

In Coburg-street, Plymouth, the lady of H. S. Dyer, esq., R.N., of a son.

At Dartmouth, the lady of Mr. Graves (daughter of Rear-Admiral Pearson), of a son.

On the 4th of June, at Falmouth, the lady of Lieut. H. James, of a daughter.

Marriages.

At Chickerell, near Weymouth, the Rev. Wm. H. Gorton, eldest son of the late Rev. W. Gorton, rector of Chickerell, and vicar of Sherborne, to Susan, only child of Capt. William Payne, R.N., of Chickerell.

On the 20th June, at Chapel-en-le-Frith, by the Rev. Samuel Grundy, Lieut. J. M. Waugh, R.N., to Susan, youngest daughter of the late Rev. Thomas Hornsby.

On the 27th of June, at Gifford Vale, Haddingtonshire, William Martin, Esq., Surgeon, R.N. (late of H.M. packet Goldfinch), to Miss Jessie Hay, of Gifford Vale.

At St. Michael's Church, by the Rev. G. Radcliffe, D.D., James Silver, Esq., of St. Mary Abbott, Kensington, to Miss Hannah Brandreth, daughter of the late Captain Brandreth, R.N., of Plymouth.

At Didbrook, Gloucestershire, Lieut. W. F. Young, R.N., son of the late Admiral J. Young, of Barton End, to Elizabeth, daughter of the late Josiah Gist, Esq., of Wormington-grange.

At Kingston, by the Rev. — Stewart, Lieut. W. Coyde, R.N., to Elizabeth Hannah, second daughter of Mr. Joseph Reeve, of Plymouth.

On the 4th of July, at St. George's, Hanover-square, the Rev. George Morris, B.A., eldest son of Capt. Morris, R.N., to Susan Emma, youngest daughter of the late Wm. Waudby, Esq., of Coldham Hall, Cambridgeshire.

At Lampbey, Pembrokeshire, J. M. Laws, Esq., Captain R.N., to Mary, the only daughter of Charles Mathias, Esq., of Lampbey Court, and Old Sheet House, Gloucestershire.

At St. Andrew's Church, Plymouth, Archibald Murray, esq., Purser R.N., late of the Ordinary at that port, to Miss Pearce, of Stonehouse.

June 22, at Walcot Church, the Rev. John William Richards, M.A., fellow and tutor of Corpus Christi College, Oxford, to Frances Augusta Anne, only daughter of Captain Thicknesse, R.N., of Bath.

On the 9th July, at St. Margaret's Church, Rochester, by the Rev. D. F. Warner, Mr. W. Percival Carrigan, of the Royal Navy, to Susannah Gould, of Rochester, eldest daughter of John Gould, Esq., solicitor, of Kew.

Deaths.

At Lenwood, near Bideford, on the 17th June, Delitia Montague, wife of Thomas Wren, Esq., and daughter of the late Vice-Admiral Barton, of Exeter.

On the 23d June, at Anglesey, near Gosport, in the 15th year of her age, Marian Eliza, youngest daughter of the late Rear-Admiral Hardyman, C.B.

Lately, Peter Goldsmith, Esq., Surgeon, R.N. (1796.)

June 16th, at Teddington, R. Cooper, Esq., R.N., late of Westminster, aged 56.

At Gillingham, Mr. George Austen, Assistant-Surgeon, R.N., aged 27 years.

On the 20th June, Julia Wyndham, youngest daughter of Lieut. F. Hire, R.N., of H.M.R.C. Adelaide, and granddaughter of Capt. William Shepheard, R.N.

In Princes-street, Devonport, aged 5 years, Jane, the youngest daughter of Mr. John Collins, Purser, R.N.

On the 18th of June, at Edinburgh, James Pottenger, Esq., Purser, R.N. (1803), sincerely and deeply lamented by all who knew him.

On the 14th of May, on board His Majesty's ship Vernon, W. E. Bushell, Esq., Purser of that ship. The Vernon at the time was cruising off Malta with the fleet, which immediately returned to La Valetta, and he was buried with military honours, and attended by all the officers of the squadron, on the 18th.

On the 29th, at Stroud, Kent, after a lingering illness, Edw. Foord Bromley, Esq., Surgeon, R.N., aged 59.

At Portsmouth, after a long and painful illness, aged 44 years, Mr. Jabez Loane, several years Master of the buoy-boat, having been in His Majesty's service 25 years, highly respected by all who knew him.

On the 4th of July, at his father's house, Mile-end Terrace, Portsea, much regretted, James Edwd. Huggins, aged 16, only son of Capt. Huggins, R.N.

At Plymouth, Mr. W. B. Dolling, Assistant-Surgeon, son of Capt. W. B. Dolling, R.N., of that town.

At Millbrook, Derry, Mr. William Rogan, Surgeon, R.N. (1822).

At Edinburgh, Commander C. Blair, (1830), elder brother of Lieut. Blair, Flag-Lieutenant to the Commander-in-Chief at Portsmouth.

On the 26th June, at Woodbridge, Mrs. Whimper, wife of Lieut. Whimper, R.N., aged 50.

Lately, in France, Mrs. Susan Birdwood, relict of Lieut. Daniel Birdwood, R.N., aged 63.

At Fratton, on the 1st July, Lieut. Joseph Luddington, R.N.

At Passage, Cork, Lieut. G. Heacock, R.N. (1807).

In Union Terrace, Barnstaple, very deeply regretted, Susanna Pagister Richardson, aged 18, eldest daughter of the late Capt. George Richardson, of the Hon. East India Company's Service.

At Edinburgh, on the 3d July, Alexander Riarch, Esq., Purser, R.N., deeply and sincerely regretted by his family and friends.

In Marlborough-row, Portsea, aged 27, Miss Eshelby, daughter of the late Mr. Eshelby, Surgeon, R.N.

On the 14th of July, at Ashling, Sussex (the result of an accident), Percy, son of Lieut. G. Fraser, R.N., aged eight years.

At Worthing, on the 13th July, Mary Ann, eldest daughter of the late Admiral Sir Benjamin Hallowell Carew, G.C.B.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

JUNE, 1836.

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.
		in. dec.	in. dec.	°	°	°	°						
1	W.	29·91	29·90	56	61	48	62	N.W.	N.	3	5	O.	Od (3)
2	Th.	29·62	29·55	59	66	49	67	N.E.	N.E.	3	2	O.	Or (4)
3	F.	29 60	29·60	61	67	52	68	S.	S.W.	4	5	P (2)	Qp (3)
4	S.	29·60	29·61	60	67	57	67	S.W.	S.W.	5	5	O.	Bcp (4
5	Su.	29·75	29·85	60	62	49	63	S.W.	S.W.	5	5	Bc.	Bcp (3
6	M.	30·03	30·03	59	66	46	67	S.W.	S.W.	4	5	Bcm.	O.
7	Tu.	29·92	29·88	58	61	51	64	S.	S.W.	4	5	Od (2)	Od (2)
8	W.	29·64	29·64	62	67	55	67	S.W.	S.W.	3	6	Op.	Qbc.
9	Th.	29·75	29·82	61	65	53	66	S.W.	S.W.	5	7	Qbc.	Qbc.
10	F.	29·84	29·86	63	67	57	67	S.	S.	6	6	Qo.	Qor 4)
11	S.	29·75	29 77	65	68	58	71	S.	S.	6	7	Or (1	Qbc.
12	Su.	30·11	30·16	12	66	48	67	S.W.	S.W.	5	4	Bc.	O.
13	M.	30·30	30·34	65	71	49	72	S.W.	S.W.	3	2	O.	Bc.
14	Tu.	30·26	30·19	71	77	55	77	S.	S.E.	1	1	Bc.	Bc.
15	W.	29·93	29·87	72	80	54	81	S.E.	E.	1	2	B.	Bcm.
16	Th.	29 90	29·94	67	72	62	74	S.W.	S.	2	2	O.	Op (3
17	F.	29·90	29·86	65	73	54	74	S.	S.	2	3	O.	Od (4
18	S.	29·81	29·75	64	70	53	72	S.W.	S.W.	4	5	Bc.	Qbc.
19	Su.	29·73	29·76	65	67	53	69	S.W.	S.W.	3	5	Bcm.	Bcmtlp (3)
20	M.	30 00	30·02	61	67	55	69	W.	W.	3	4	Bc.	Bc.
21	Tu.	30·01	29·98	60	66	54	70	S.W.	S.W.	4	5	Od 2)	Qod 4)
22	W.	29·94	29·91	62	65	57	67	S.W.	S.W.	5	5	Qor (1) (2)	Od 3)
23	Th.	29·82	29·82	64	67	58	67	S.W.	S.W.	5	5	O.	Bc.
24	F.	29·80	29·74	60	65	56	66	S.	S.	5	5	O.	Qp (3)
25	S.	30 04	30·09	62	66	53	67	S.W.	S.W.	3	2	Bc.	Bcp (4)
26	Su.	30·23	30·27	64	68	54	69	S.W.	S.W.	4	4	Bcm.	Bcm.
27	M.	30·31	30·27	67	73	54	74	S.	S.	2	1	O.	O
28	Tu.	30·30	30·10	74	81	56	82	S.	S.W.	2	3	Bv.	Bcv.
29	W.	30·32	30·31	66	72	55	74	N.	N.	2	2	Bm.	Bcm.
30	Th.	30·21	30·16	69	73	51	75	E.	E.	3	4	B.	Bcm.

JUNE—Mean height of Barometer = 29·936 inches; Mean Temperature = 61·7 degrees; Depth of Rain fallen = 1·05 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

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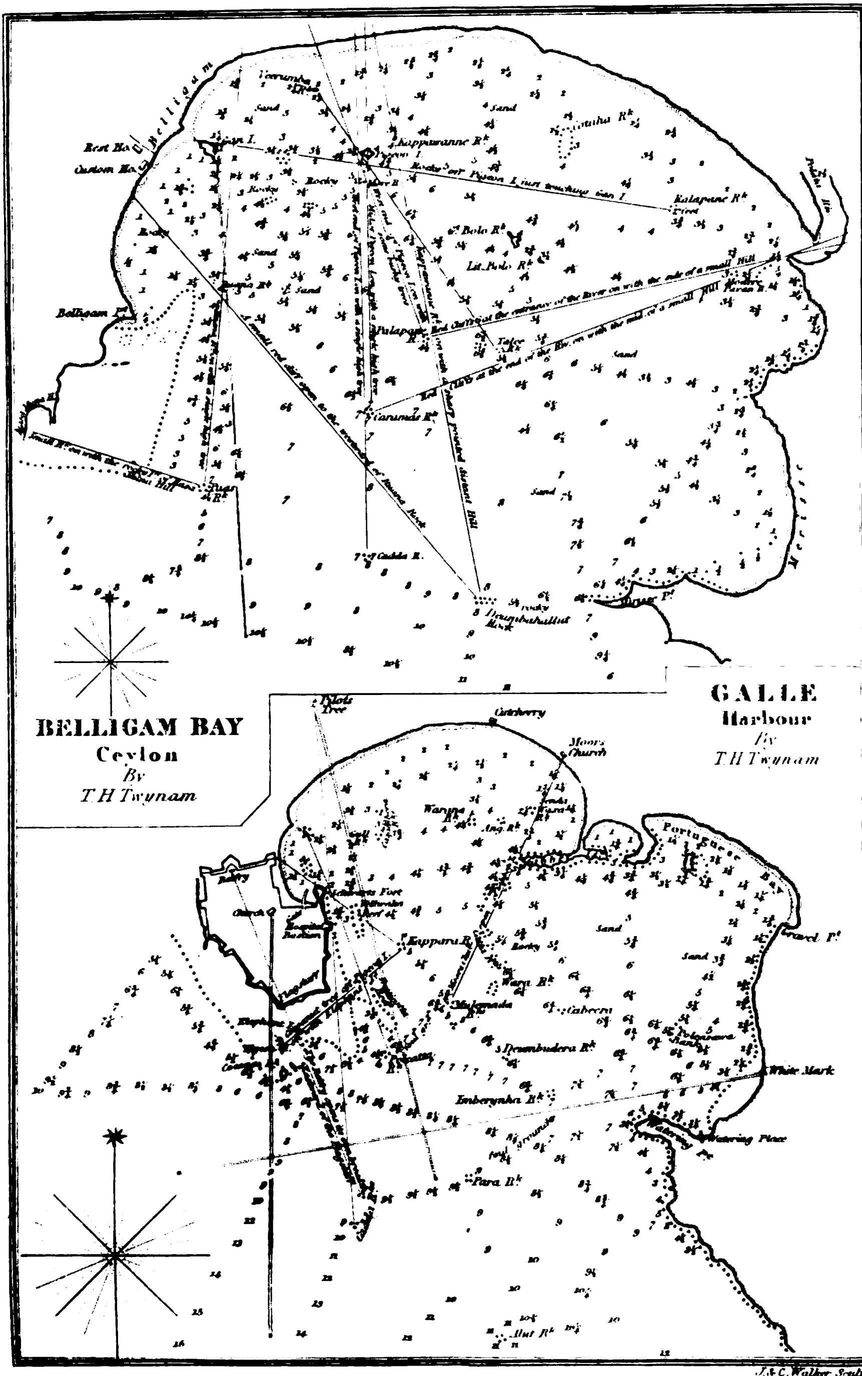

J. & C. Walker Sculp.

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ORIGINAL PAPERS.

SEPTEMBER, 1836.

OCEANIC UNDULATIONS.

WHEN a landsman is told that the waves of the sea run "mountans high," his conceptions of a storm must be crude and incorrect. Should he refer to books for information, as to the actual height of waves in a gale of wind, and the rate at which they travel; he there finds it stated that the height of a wave never exceeds ten or a dozen feet, and that the billows are raised by the wind, and are stilled when the winds cease to blow. A citizen of London, anxious for a knowledge of maritime affairs, may take a trip to Margate, to have his view of waves confirmed by experience and actual observations, made among the shoals and sand-banks at the mouth of the Thames; but there the tiny waves would probably tend to derange the digestive functions of his stomach, rather than confirm any extravagant notions he might entertain, relative to the height of waves, which the language of poetry and metaphor has raised into aqueous mountains.

A well-written article on waves, by "Argonaut," in a recent number of the Nautical Magazine, threw considerable light on this subject, and is well calculated to remove some of our erroneous conceptions relative to them. The writer mentioned several interesting facts relative to the height and force of waves, which he had experienced and observed in the course of his professional career: he invited others to add to the general stock of knowledge such data as they might possess. In forwarding his views, the following remarks are offered.

It has been asserted that the rate at which a wave travels, depends on the *depth* of the water in which it undulates: now, this statement is not altogether correct, for although the height of a wave and the rate at which it travels may bear some ratio to the depth of the sea, yet the velocity does not depend on the depth alone. The proofs of this are, that three or more superposed waves may be seen, on the same spot, and at the same instant, moving in the same direction, but with unequal velocities; this is a fact which every seaman must have seen, and may see again. First may be traced the long billows, rolling on in regular succession; their summits being three or four hundred yards apart. On the bosom of these waves, others of less elevation and narrower base may be observed travelling on in the same direction as the great wave, but at a less rapid rate: the spectator is satisfied that this is the case, because he sees that the greater wave overtakes and leaves behind, all those of a less elevation. By a careful examination of the sea in a storm, one may detect waves of every magnitude, from

the small elementary ripple (raised on the surface of other waves by the wind) up to the huge surge of the Atlantic; and all moving with velocities bearing some proportion to their elevation.

As a general proposition, it is not true that the rate at which waves travel depends entirely on the depth of water where they may be in motion. It frequently happens that waves of considerable height are observed to be moving in different directions at the same time; this appears after sudden changes of wind, and is of constant occurrence on the skirts of the trade winds and in the vicinity of long projecting promontories, such as the Land's End of England or *Cape Spartivento*. Huge waves, raised by gales of wind in the extra-tropical seas, frequently traverse the limits of the trade-winds, and break upon the shores of Guinea, or upon the cliffs of the tropical islands, such as St. Helena, Ascension, the Canaries, or Cape de Verdes.

Let us consider for a moment the *rationale* of waves: When the winds are hushed, and the waves are still, the surface of the sea resembles the face of a silvery lake; but should the winds arise, the surface of the sea becomes ruffled; little waves are formed: they run into each other; they augment in size, and increase their undulatory motion. If the wind increase to a gale, the waves augment their height, and are lashed into foam; and if to all this be superadded the heavy squall, the rainy torrent, the thunder's roar, and lightning's glare, we shall then have what may fairly be called stormy weather.

That so soft and evanescent an agency as the wind should raise such high undulations as are observed in a gale of wind at sea, is really surprising; but when we take into consideration, that the balmy air we breathe, see through, and move freely in, is an agent of great power and weight; that it presses upon every square foot of the ocean's surface with a force = 2000 lbs.; that *wind* is the lower regions of our atmosphere in motion along the surface of the earth or sea, and sometimes travelling at the rate of thirty or forty miles an hour: if such an elastic and ponderous mass, moving with such rapidity along the surface of the sea, exerting so great a pressure on it, and raising the waves so much above the ordinary level of the water's surface—need all this excite our surprise? It is really surprising that the waves are not raised to a greater height than they usually attain!

Another apparent difficulty presents itself in the theory of waves, namely, the extraordinary distance to which these oceanic undulations travel, after the forces that produced them have entirely ceased. Let us quit the air and its wonderful properties, and examine the sea in which these aqueous undulations are propagated, bearing in mind, that a wave is not a mass of water in actual motion along the surface of the sea, but rather a vibration, an undulation, or a rise and fall of the surface, which is

transferred along that surface without any great change taking place among the elementary particles of the fluid. A wave may be compared to the graceful undulation that takes place in a ship's ensign, beginning to windward near the ensign-staff, and ending at the fly* of the flag.

I attribute the propagation and continuation of oceanic undulations to the great elasticity of water and the great depth of the ocean. Mr. Perkins has proved by actual experiments that water is compressible and elastic, as completely and fully as any fact was ever established. A very familiar instance may be mentioned here to prove that water is elastic. If, during a calm, a heavy shower of rain should fall upon the smooth surface of the sea, or other piece of water, we observe that the drops of rain are broken, and rebound in little spherical globules from the surface: now, here we have water falling upon water, and, were the fluids non-elastic, these leapings and reboundings would not take place. Water being compressible and elastic, it will necessarily follow that deep water is more favourable for propagating and continuing the undulations of waves than shallow water. The absolute elasticity of a metallic spiral wire spring will depend (*ceteris paribus*) upon the number of revolutions the wind makes round a common centre. The mobile or elastic property of the water at the surface of the sea, will in some measure depend upon the compression of that beneath. The pressure upon the surface is equal to the weight of the atmosphere, and at every thirty-five feet of depth the pressure of the superincumbent column is augmented by an atmosphere. We may conceive the sea at any depth made up of successive laminæ of water, where the pressure, compression, and elasticity of the fluid at any depth, is proportioned to the vertical height of the superincumbent column; and that the elasticity or mobility at the surface is made up of all the elasticities of the successive laminæ from the bottom upwards.

Waves, then, raised to a given height, by an atmosphere moving with a given velocity, would, when passing through an ocean of an uniform depth, move with an uniform undulation. But should the force of the wind abate, the height of the waves would diminish, and the rate at which they travelled would be lessened. If, on the other hand, the wind should continue to blow with undiminished force, but that the depth of the sea should diminish, the elasticity due to the depth would also diminish, and the wave would not move with that freedom it previously moved; its sloping surface would undergo a change, being more steep to leeward than to windward. As waves advance into more shallow water, this

* As our readers unaccustomed to sea-terms might be at a loss for the meaning of this expresion, it may be as well to state, that the *fly* is that part of the flag bounded by the side furthest from the head-rope, or the small rope to which it is fastened to hoist it to the mast-head, or head of the flag-staff.

difference increases, their velocity is diminished, they advance nearer to each other, and become crowded; they are projected forward, and, on reaching the beach or a shoal, actually turn over, or break into a violent surf, tearing up the beach, and bearing away, by an under current, the loose and broken fragments.

The actual height of a wave, and the rate at which its undulation is maintained, depend on three or more contingencies. 1st. The actual force of the wind at the time: 2d. the depth of the sea over which the undulation passes: 3rd. the uneven or irregular nature of the bottom itself. The elevation and depression of waves has seldom been correctly ascertained, or fairly estimated. The summit of a wave is its elevation, and the hollow between two adjacent waves is the depression; the medium level of the sea being half way between these extremes. I remember to have stood upon the shores of the German Ocean, and beheld a merchant vessel running on shore in a gale of wind. She drew twelve feet of water; and in passing over a shoal having thirty feet water on it, she struck, and had her bottom stove in. Now, this vessel, to have touched the rock must have descended eighteen feet below the mean level of the water; consequently, the hollow of the sea must have been eighteen feet deep, and its elevation eighteen feet high, making a difference of thirty-six feet from the lowest part of the base to the summit of the wave, which is about equal to the height of a seventy-four gun ship's tafrail above her line of flotation.

In the months of June and July, 1830, I happened to be on the Island of Ascension, employed on a particular service. A long swell began to set in from the S.W., which was at right angles to the direction of the S.E. trade-wind. These rollers soon cut off all communication with the shore, by breaking violently on the beach. Being on shore, an opportunity offered for ascertaining the height of these antarctic waves. A buoy had been laid down just 1700 feet from the crane at the landing stairs: I stood near the crane with my eye elevated twenty-four feet above the ordinary sea-level, and observed that the summits of the waves, as they reached the buoy, were in a straight line between my eye and the visible horizon. Taking the visible horizon from a height of twenty-four feet, to be at a distance of 34,200 feet, we may determine the height of the waves by the following proportion, viz., The distance of the visible horizon will be to the height of the eye above the sea-level, as the distance from the wave to the visible horizon, to the height of the wave above the level of the sea; or, 34,200 ft. : 24 ft. :: 34,200 ft. — 1700 ft. : 22½ ft. nearly; making the whole height, from the summit to the bottom of the wave, 45½ feet.

The conditions under which these waves reached Ascension merit consideration. My notes were taken on the first of July,

1830. It was then the winter season in the southern hemisphere: the barometer had fallen one-tenth of an inch, (an unusual circumstance there). The swell came from the S.W. quarter, and at right angles to the direction of the trade-wind, and the waves raised by it, the "rollers," that then reached Ascension, must have been raised by a gale of wind from the S.W., without the limits of the trade-winds; probably in the neighbourhood of the Falkland Islands, or near Cape Horn, and at a distance from Ascension of three or four thousand miles. Their height must have been diminished by crossing the variable latitudes, and traversing the S.E. trades. On the other hand, these long waves, on reaching within five or six miles of Ascension, passed in about ten minutes from a depth of 1000 fathoms into 10 fathoms, and thereby met with retardation. They were, therefore, crowded near the beach, and broke with great violence, carrying away vast quantities of sand into deep water.

We have seen, then, an instance where a wave of no great magnitude, was found to be at least twenty-two feet above the ordinary sea-level, after having traversed a space of several thousands of miles beyond its native seas, and overcoming obstacles in its progress, instead of being urged on by the wind! We may, therefore, conclude, that the actual height of waves, in an open and deep sea, and in hard gales of wind, must rise much higher than twenty-two feet; perhaps to thirty or thirty-five feet. If so, the actual height of a wave, above an adjacent depression, must equal 60 or 70 feet.

The force exerted, and effects produced by waves, are very extraordinary. It has been asserted, that the sea has broken over the lantern of the Eddystone Lighthouse. It is very certain, that during the night of the 26th November, 1703, the Eddystone Lighthouse was completely swept from its foundation, and carried away! The changes produced in hydrostatic pressure, by waves in a gale of wind, have been well exemplified among the huge blocks of marble composing the Plymouth Breakwater. Here stones, weighing several tons each, have been raised up out of their beds in the solid structure by a vertical force, in consequence of a huge wave behind the Breakwater transferring an almost instantaneous excess of pressure throughout, the fluid filling the openings among the stones of the fabric. The projectile force of waves is also very great: thousands of stones, five or six tons each, have been rolled up the sea-front of the Breakwater, and tumbled over it into the Sound.

These stones have been seen, in a gale of wind from the S.W., rolling up and down by successive waves; and alternately reaching the summit, have rested there for a moment, till some "giant surge" should send them from their resting-place into the Sound.

Another example of the force of waves may be seen here. A

large flat block of hewn stone now lies near the harbour-master's house at Boveysand, which was torn from its place in the pier by a wave, and thrown sixteen or eighteen feet above high-water mark, where it remains as a record of what has been effected, and what may again be expected, from the force of the waves and the raging of a storm.

Devonport, 10th Nov., 1835. W. W.

Nautical Directions for the South Coast of Ceylon.

(Concluded from p. 370, No. 52.)

Cataloewe or Attadahawatte lies about three miles to the westward of Woody Island. This is a small village, opposite to which there is a passage through the reef, (which projects farther off here than on the adjacent parts of the coast,) and anchorage inside in two to two and a half fathoms; it is much frequented by the coasting dhonies. About half a mile to the eastward, and a quarter of a mile from the shore, lies Vellevanne Rock, elevated a few feet above the water, and having three and a half to five fathoms water close to, all round; and about five-eighths of a mile to the westward of Cataloewe, there is a remarkable rock on the beach, called Botavanne Rock, or Cogle Rock.

Ahangamme Hill, a round reddish piece of land close to the sea, lies five-eighths of a mile to the westward of Woody Island. Close to the eastward of Woody Island there is an opening in the reef, affording anchorage inside for the coasting dhonies, in one and two fathoms water, at the village of Goyapannah. A rocky islet lies S.E. a quarter of a mile of Woody Island, connected with it by a reef.

Rassa Muna Canda Hill, the west point of Bellegam Bay, (Red Bay of Horsburgh,) bears from Woody Island E. by S. ½ S. two one-eighth miles: the land between is rugged, of moderate height, covered with jungle, with occasionally a tope of cocoa-nut trees, and lined with a reef.

Bellegam Bay is of considerable depth, and about one mile and a half wide at its entrance; there are two small islands, and several rocks above water in the bay, also several rocks having three to four fathoms water on them. The westernmost of these islands lies close to the beach, on the west side of the bay; it is called Gan Island; the other (Pigeon Island) lies more towards the middle and north side of the bay. A reef projects from Rassa Muna Hill a large quarter of a mile to the E. S. E., and extends along the west side of the bay, till within three-eighths of a mile of Gan Island. Off the inner end of this reef, there is a small coin-shaped rock called Ruana Rock; on the beach between this and Gan Island is the custom-house and rest-house of Bellegam. Paas

Rock, having three fathoms on it, least water, lies half a mile E. by S. ½ S. from Rassa Muna Hill and Cadda Rock, having four fathoms and a half, least water, one mile in the same direction.

To come into the bay: Keep the high cocoa-nut trees on the point inside Woody Island well open, till you bring Ruana Rock on with Gan Island, when, haul up for Varumba Rock, (a conical rock, elevated about ten feet above the water, situated at the bottom of the bay between Gan Island and Pigeon Island;) this will lead fair between Paas Rock and Cadda Rock; and anchor to the eastward of Ruana Rock, in five to six fathoms water, sandy bottom. It is advisable not to stand too far to the northward of Ruana Rock, in consequence of some sunken rocks which lie between Gan Island and Pigeon Island. On the east side of the bay lies the village of Mirisse, close to the northward of which are some remarkable red cliffs. There are also red cliffs at Rassa Muna Hill.

Mirisse Point, the east point of Bellegam Bay, bears from Rassa Muna Hill E. by S. ½ S. one mile and a half. This is a high rocky point, extending about three-quarters of a mile in an easterly direction. Some rocks above water lie close off the middle of it.

Dondre Head, the southernmost land of Ceylon, bears from the east part of Mirisse Point about E. ½ S. eight miles and three-eighths. It is a low projecting rocky point, covered with cocoa-nut trees, which give it the appearance, when seen from a distance, of a low bluff; its southern extremity runs east and west a large half mile; it is in latitude 5° 55′ N., and the middle of the point in longitude 80° 43′ E. The point is steep to the southward, but a reef projects from its western part three-quarters of a mile W. by S. ½ S., having three and four fathoms water on it. A reef also projects from the eastern extreme one-eighth of a mile to the eastward. The land between Mirisse Point and Dondre Head is generally low, and covered with cocoa-nut trees, a hill covered with jungle occasionally intervening.

Matura, a considerable town, the station of an Assistant Government Agent and Commandant, bears from Dondre Head N.W. by W. two miles and a half; it is not easily discerned from seaward, but its position may be known by Pigeon Island, a round island resembling a haycock, which lies directly off it, near the beach. A large half-mile to the westward of Pigeon Island is the entrance of Matura River, having three and four fathoms inside, but shut by a bar, which, in consequence of a heavy flood some years ago, is not now navigable even for the coasting dhonies. Several rocky islets lie off the mouth of the river, and extend about half a mile to the westward, near the beach.

Madamura Bank, having three and four fathoms water on it, seven fathoms inside, and eight close outside, lies about one mile

from the river's entrance, and the same distance from the nearest shore; it bears from Pigeon Island S.S.W. a large mile, and from Dondre Head W. ½ N. two miles and a half. This and all other dangers off Matura and Dondre Head, may be avoided by keeping the highest part of the high land of Mirisse Point well open of the land to the eastward of it. Three-quarters of a mile to the eastward of Pigeon Island, are some remarkable red cliffs of considerable height, off which there is anchorage in ten to twenty fathoms, sand, one to two miles off shore. There is anchorage in a small cove close to the eastward of Dondre Head, at the village of Keereelewelle, in three to five fathoms, sandy bottom.

GANDURA POINT, the west side of Gandura Bay, is of moderate height and rocky; it bears from the east part of Dondre Head N.E. by E. ½ E. one mile and a quarter; a rock with three fathoms lies close to the point, on the south side; and about half-way between Gandura Point and Keereelawelle, are some rocky islets, called Hienia Rocks, close to the shore. The coast is high and rocky, and lined with a reef. The village of Gandura (Galies of Horsburgh) lies to the northward of the point, at the bottom of a small cove, about a quarter of a mile in depth and 350 yards wide, having good anchorage in three to six fathoms, sand and ooze. There is good anchorage off the point and mouth of the cove, in seven to ten fathoms, sand and ooze, but exposed to a swell in the south-west monsoon.

KAPPARAWELLE POINT, the east side of Gandura Bay, bears from Gandura Point N. E. by E. ½ E. one mile and a half; the coast between them high, rocky, and lined with a reef, except at the cove, and a place called Nourounee, where there is a sandy beach, with a plantation of cocoa-nut trees, extending five-eighths of a mile; it bears from Gandura Point N.N.E. three-quarters of a mile. Kapparawelle Point is high and rocky, and extends in an E. N. E. direction three-eighths of a mile, having several rocky islets off its eastern extremity, called Linea Rocks, inside which, in a sandy bight, is the village of Cotagodde.

ETALA REEF is about three-eighths of a mile in length; it bears from the east end of Kapparawelle Point E. ½ N. three-quarters of a mile, and is a large half-mile from the shore. Half a mile farther to the eastward, and half a mile from the shore, is a rock above water, called Bamberee Rock, from which a reef extends to the shore. There is five and six fathoms water inside Etala Reef, and between it and Bamberee Rock; five to seven close outside both, and seven to the westward of the reef. The west end of Nourounee beach kept open of Kapparawelle Point, clears Etala Reef, and Bamberee Rock.

NILEWELLE POINT, the west side of Nilewelle Bay, is in lat. 5° 57′ 20″ N., long. 80° 50′ 20″ E., and bears from Dondre Head E. by N. ½ N. seven miles and a quarter, and from Kappa-

rawelle Point E. by N. four miles and a half; the coast between being of moderate height, covered with jungle, with occasionally a sandy bight and plantation of cocoa-nut trees. Nilewelle Point is rocky, and of moderate height, nearly isolated, being only connected with the main by a strip of sand over which the sea frequently breaks. There is a remarkable tope of cocoa-nut trees on the point, which gives it the appearance, when seen from the eastward or westward, of a table island, and by which Nilewelle may be known. The bay is about a mile in width, its east point (Polonha Point) bearing from Nilewelle Point N.E. ½ E. one mile: the land in both sides of the bay is high and rocky; at the bottom there is a sandy beach, but lined by a reef which extends half a mile from the shore. The village of Nilewelle is situated in a small bight on the west side the bay, off which is the best anchorage, in from four to ten fathoms water, sandy bottom, but the bank is steep, and the anchorage confined by the reef above-mentioned. Vessels anchoring here should take care to shut Tangalle Fort in by Polonha Point, as outside this mark the ground is foul. One mile and a quarter to the westward of Nilewelle, is the small bay and village of DEEKWELLE, having a rest-house and plantation of cocoa-nut trees near the beach; but the bay is inaccessible, as the reef which lines the coast from Kapparawelle Point to Nilewelle extends across it.

MAHAWELLE POINT is high, steep, and rocky; it bears from Polonha Point N.E. ¼ N. one mile and a half; the coast between forming a bight, at the bottom of which is a small sandy bay, called Sureya-tree Bay, where the coasting dhonies occasionally anchor in three fathoms, sandy bottom, close to the beach; in four fathoms the ground is foul. To the northward of Mahawelle Point lies Mahawelle Bay, having anchorage in its south-west part, in four to seven fathoms water, sandy bottom: in all the other parts of the bay the ground is foul. E. by N. ¼ N. a quarter of a mile from Mahawelle Point, lie Mahawelle Rocks; they are of small extent, nearly even with the water's edge, having eight fathoms water close to all round; and three-quarters of a mile from the point, in the same direction, are some rocky islets, called Oonacria Rocks, having a narrow channel inside, with five fathoms water, and seven to nine fathoms close to on the outside. These islets are about three-eighths of a mile from the shore. The best passage into Mahawelle Bay is between them and Mahawelle Rocks; the channel is clear, near half a mile wide, with nine and ten fathoms water. The passage between Mahawelle Rocks and the point is also clear, with eight fathoms water, but is much narrower than the other.

TANGALLE POINT, in lat. 6° 1′ N., long. 80° 55′ E., bears N.E. ½ E. four miles and three-quarters from Polonha Point, the coast between being of moderate height and rocky, and, except in

Sureya-tree and Mahawelle Bays, lined with a coral reef. This is a hilly point, moderately high, gradually sloping to the sea; on its summit stands a square fort, very conspicuous from seaward; also the new Cutchery, by which Tangalle may be known. The bay, which is of considerable extent east and west, but of no great depth, lies to the eastward of the point; the reef extends from the point half a mile to the eastward. Tangalle Rocks, which are above water, and steep to, bear from Tangalle Point E. ½ S. one mile; there is a passage between them and the reef, having five and six fathoms water, but it is not safe for strangers, as the edge of the reef is not always to be seen, and there is a rock, called Radul Rock, having only ten feet water on it, nearly in the middle: this rock bears from Tangalle Rocks N.W. ½ N. a quarter of a mile. Another rock, called Maa Rock, having sixteen feet water on it, bears from Tangalle Rocks N.E. ½ N. three-eighths of a mile. On these two rocks boats are usually stationed with flags, when vessels are coming into or going out of the bay. A vessel coming in without these boats, or a pilot, should pass to the eastward of Tangalle Rocks, and stand to the north-east, till Tangalle Rudda Vehare is in one with the high cocoa-nut trees on the south-west bank of Kunkalla Modere, (this mark kept on will clear all dangers,) then haul up for Kunkalla Modere, and anchor in five to six fathoms, sandy bottom, Tangalle Rocks bearing S. by E. to S.E. by S. This is the only spot of clear ground in the bay, and is a space of about half a mile square; farther in the ground is sand and stones, but a small vessel, having a chain, might in the south-west monsoon run into three or four fathoms, where she would be more sheltered by the reef from the heavy swell which sometimes rolls into the bay at that season. To the eastward the ground is very foul.—N. B. Tangalle Kudda Vehare is a small pagoda which lies half a mile to the N.W. of the fort, and being white is easily distinguished. Kunkalla Modere is the mouth of a small river (the Kunkalla) which runs into the west side of the bay a quarter of a mile to the northward of Tangalle Point, and, though generally closed by a bank of sand, except after heavy rains, may be distinguished by the gap in the trees. The custom-house is on the west side of the bay, between Kunkalla Modere and the point, and the best landing-place is near it. A reef commences about one mile to the north-east of Tangalle Point, and lines all the eastern side of the bay, projecting in some places three-eighths of a mile from the shore. The west side of the bay is low, with plantations of cocoa-nut trees, in which is the town; these extend about a mile and three-quarters from Tangalle Point, to the eastward of which the coast is higher, sandy, and barren.

Rackova Point, the east point of Tangalle Bay, bears from Tangalle Point E. by N. ½ N. three miles and three-quarters. This is a sloping barren point, surrounded by a reef which projects

about half a mile from it. Cahandoera Point, a sandy point of moderate height, having a tope of cocoa-nut trees on it, bears from Rackova point N. E. by E. ½ E. two miles and a half; the coast between them forming a bight, having on its eastern side some topes of cocoa-nut trees, at the village of Cahandawa; it is lined with a coral reef.

Cahandawa Rocks, are two rocks, bearing from each other N.W. by W. and S. E. by E. a quarter of a mile; the inside one, situated on the edge of the reef, is small and above water; it bears from Cahandawa Point S.W. three-quarters of a mile: the outer one is very little below the water's edge, with other rocks round it; it bears from Cahandawa Point S.S.W. three-quarters of a mile, and from Rackowa Point E. by N. ½ N. two miles and one-eighth. There is a passage between these rocks, nearest the outer one, having five and six fathoms rocky bottom, but it is not safe. Close outside these rocks there is seven and eight fathoms water.

Calamatta Point is high and rocky, with a chain of rocky islets lying off it; it bears from Cahandawa Point E. by N. ½ N. two miles and one-eighth, the coast between being sandy and barren.

Levay Rock, very little under water, bears from Calamatta Point S.W. ½ S. seven-eighths of a mile, and is about half a mile from the shore. The reef runs from this in a line with the coast to the inner Cahandawa Rock to the westward, and to the eastward inclines towards the shore to Calamatta Point. Watta Rock, the outermost of the chain of islets above mentioned, bears from Calamatta Point S.E. half a mile; some rocks project from its outer part S.E. a quarter of a mile. There is a passage between Watta Rock and the next rocky islet, having seven and eight fathoms sandy bottom. A quarter of a mile E. ½ N. of Calamatta Point, and about three-eighths of a mile to the northward of Watta Rock, there is a rocky patch, nearly even with the water's edge, called Calamatta Rocks; between these and the chain of islets there is anchorage in five to seven fathoms, sandy bottom; and between them and the shore, to the northward, anchorage in four to six fathoms, sand and ooze, off the small village of Calamatta. All the ground to the eastward of Calamatta Rocks is very foul; the only landing-place is close to the northward of Calamatta Point; a reef lines the coast of all the other parts of the bay, which projects from its eastern side three-eighths of a mile. Dhonies occasionally call here for salt.

Oulandhe Point, the east point of Calamatta Bay, is high, sandy, and barren; it bears from Calamatta Point E. by N. ½ N. two miles and a half, and from Watta Rock N.E. by E. ½ E. two miles and a quarter. E. N. E. three-quarters of a mile from Oulandhe Point, are some reddish cliffs of moderate height, called Rattana Point. Some rocks above water lie close off these points

inside the reef, which here projects a quarter of a mile from the shore.

Godawoy Point, is high, rocky, and barren, and bears from Rattana Point E. by N. ½ N. four miles; the coast between low and barren, (except about half-way, where there are some topes of cocoa-nut trees, at the mouth of the river Waluwe,) and lined with a reef.

Hambantotte Point, in lat. 6° 7′ N., long. 81° 14′ 45″ E., is high, sandy, and barren; it bears from Godawoy Point E. by N. five miles; on its summit stand a round tower, and several houses, the residence of the Commandant and Assistant Government Agent of the station. To the north-eastward of the point is the small bay of Hambantotte, having anchorage in four, to six and seven fathoms, sand and ooze; and to the eastward of the point, there is anchorage in eight to ten fathoms, sand. The town is at the bottom of the bay, near the point. This is the principal place of export for salt. Ships calling here for salt, should in the north-east monsoon anchor to the eastward of the point, but in the south-west monsoon they should run farther into the bay, so as to be in some measure under the lee of the point, where they will be less exposed to the swell, and the boats can pass to and fro with greater facility. All dangers are visible.

Nehinde Rock is very dangerous, being nearly level with the water's edge; it bears from Hambantotte Tower S.W. by W. ¼ W. three miles and a quarter, and is a mile from the nearest shore; there is a clear channel inside it, having five fathoms water near the shore, and eight and nine close to the rock, which is steep to all round.

Ibhaa Rock is also very dangerous, being very little under water; it bears from Hambantotte Tower W. 21° S. four miles and five-eighths, and from Godawoy Point, the nearest land, S.S.E.¼ E. three-quarters of a mile. There is a clear passage inside the rock, with six and seven fathoms water near the shore, and eight and nine near the rock, irregular rocky bottom; between Nehinde and Ibhaa Rocks there is nine and ten fathoms water, and close outside both ten fathoms. From the form of the land no good marks can be given, to clear these rocks; a ship should therefore not come under fifteen fathoms water in the night, when near them, nor even in the day, unless the rocks are seen (which, as they generally break, they probably will be,) until Hambantotte Tower bears about N. E. by N. or N. N. E.; this depth will be about three-quarters of a mile outside the rocks; twenty fathoms is about one three-quarters to two miles outside them.

The mouth of the Waluwe River is about seven miles to the westward of Hambantotte; and it is probable that Nehinde Rock is the rock said by Horsburgh to lie four miles from that river. The Waluwe is shut by a rocky bar.

LEVOY POINT, the north-east point of Hambantotte Bay, bears from Hambantotte Point N.E. ½ N. one mile and one-eighth.

PATTERAJAH POINT is of moderate height, sandy, and barren; it bears from Hambantotte N.E. by E. ½ E. six miles and three eighths, the coast between being sandy and barren, and lined with a reef.

DORAVA POINT, (Mago Point of Horsburgh,) a flat rocky point of moderate height, bears from Hambantotte E.N.E. twelve miles and a quarter, and from Patterajah Point E. by N. ½ N. six miles, the coast between being moderately high, sandy, and barren. About one mile and a quarter to the westward is the mouth of the small river Kirinde, near the village of Mahagam; this river is shut by a rocky bar.

LANCEEYA ROCK, a small rock above water, bears from Dorava Point south half a mile; the reef extends from this to the shore.

DORAVA ROCK, having on it three fathoms water, with ten and eleven all round, bears from Dorava Point S. E. three-quarters of a mile, and from Lanceeya Rock east half a mile. This may be avoided, by not coming under thirteen fathoms, till the highest peak of the Katteragamme Hills (a ridge of undulating hills nearer the sea than any other high land,) is in one with Kirinde Point.

KIRINDE POINT bears from Dorava Point N.E. ½ N. one mile; this is a rugged rocky point, of moderate height, having several large rocks on its summit; one higher than the rest; near which, on a mound of earth, the ruins of some old building, a temporary flagstaff is sometimes erected; there are the remains of an old tank close to this, which still contains good water. Several detached rocks lie off the point. This is a place of export for salt, but is uninhabited, except by the people employed by Government in the shipping of salt, and who are sent from other stations when required. The salt stores are on the beach, at the bottom of the small bay to the northward of the point, off which dhonies and small craft anchor, in three to three and a half fathoms water; but a patch of sunken rocks, and a rock with seven feet water on it, lie in the passage, rendering this anchorage difficult of access; the best anchorage is in nine to ten fathoms water, with the north end of the salt stores open of the high part of the point, but not so far out as to be on with the outer detached rock; (the high rock on the summit of the point above-mentioned will then bear W. N.W. to N.W., and the outer detached rock from N.W. to N. ½ W.;) to the north-eastward of this the ground is foul.

PALOOTOPANE LEVOY POINT is low and sandy, and bears from Dorava Point N. E. by E. five miles, the coast between being barren and sandy, and, except Kirinde above-described, lined with a reef. About a mile to the south-west of Levoy Point, on the summit of the rising-ground near the beach, where the coast forms a sort of bight, stands Palootopane Fort. The Great Bassas bears

from Kirinde E. 12° S. nine miles; the channel between clear of danger, with from ten to eighteen or twenty fathoms water.

General Remarks.

The coast from Bentotte to Dondre Head presents a succession of sandy bights, covered with cocoa-nut trees, with intervening rocky points or cliffs; the land near the sea generally low, but increasing in height inland in ridges of irregular hills; the most conspicuous of these is the Haycock, a conical mountain, in lat. 6° 20′ 30″ N., long. 80° 25′ 15″ E. From Dondre Head to Tangalle, the coast assumes a more rugged rocky appearance, the plantations of cocoa-nut trees fewer, and of less extent. To the eastward of Tangalle the coast is sandy and barren; a few topes of cocoa-nut trees are to be seen between Tangalle and the Waluwe River, but to the eastward of the latter none; the hills fall farther back as you advance to the eastward, leaving a level space between them and the sandy hillocks near the sea, in which are the salt levoys and marshy grounds called Kaloopous.

The bank of soundings gradually extends farther from the shore as you increase the distance from Dondre Head: off Bentotte, twenty fathoms water is three miles, and thirty 4½ miles off shore; off Accoral, twenty is 1¼ miles, and thirty 2½ miles; off Galle the soundings are more irregular, from the vicinity of the Gindura and Whale Rocks, twenty fathoms is about 1¼ mile; off the flagstaff, while off those rocks, it is from 2 to 2½ miles off shore, or about half a mile outside the rocks; thirty fathoms is from 2 to 3 miles off shore; off Belligam, twenty fathoms is 1½ mile, and thirty 1¾ mile from the shore; off Dondre Head, twenty fathoms is ¾ mile, thirty 1¼ mile, and fifty 2 miles off; off Tangalle, twenty fathoms is near 3 miles, and thirty 3½ to 4 miles from the shore; off Hambantotte, twenty fathoms is about 3½ miles, and thirty near 6 miles off; from thirty fathoms the water deepens less rapidly, forty fathoms being (except in the vicinity of Dondre Head) from 2 to 3 leagues from the land. To the westward of Dondre Head, twenty fathoms will carry clear of all dangers; but it would not be prudent to approach the shore so close in the night, when in the vicinity of some of the dangerous rocks described above; fifteen to twenty fathoms will clear all dangers to the eastward of Dondre Head, as far as the Great Bassas: to pass outside these rocks in the night, a ship should haul out when approaching them into thirty or forty fathoms water. In fine weather, when the land can be distinctly seen, a ship may pass inside the Great Bassas in the night, keeping about two or three miles from the shore; but care must be taken not to approach the Little Bassas during the night, after passing inside the Great Bassas.

New Light in the Sound.

Hydrographic-Office, Admiralty, 24th June, 1836.

From the middle of this month, a Lantern-fire has been shewn on the Battery of Tre-Kroner, to the north of the flagstaff, and at an elevation of about thirty feet above the parapet.

It will be kept burning, like the other Danish lights, from an hour after sunset to sunrise in summer, (Easter to Michaelmas,) and in winter (Michaelmas to Easter) from half an hour after sunset to sunrise, so long as the navigation of the Sound remains unimpeded by ice.

On Determining the true Azimuths of Terrestrial Objects.

By the Rev. George Fisher, Chaplain, R.N.

The following table may be useful to those who are accustomed to determine the bearings of headlands, and other remarkable objects, by means of the observed distances, as taken with a sextant between them and the sun's limb.

The table contains the sun's motion in azimuth when near the meridian, due to *one minute* of time; and as this motion is then very nearly proportional to the hour-angle, the correction is obtained by multiplying the tabular quantity by the number of minutes from apparent noon. When the meridian altitude is very considerable, this method is obviously inadmissible.

Corrections in Azimuth, near the Meridian.

Mer. Alt.	Declinations.				
	0	5°	10°	15°	20°
5°	15′·0	15′·0	14′·8	14′·5	14′·1
10	15·2	15·2	15·0	14·7	14·3
15	15·5	15·5	15·3	15·0	14·6
20	16·0	15·8	15·7	15·4	15·1
25	16·6	16·5	16·3	16·0	15·6
30	17·3	17·3	17·1	16·8	16·4
35	18·3	18·3	18·0	17·7	17·2
40	19·6	19·6	19·3	18·9	18·4
45	21·2	21·1	20·9	20·5	19·9
50	23·3	23·3	23·0	22·5	21·9
55	26·1	26·0	25·8	25·3	24·6
60	30·0	29·9	29·6	29·0	28·2

In the application of this method for finding the true bearing or azimuth of an object, the solution of a right-angled spherical triangle is required; in which the hypothenuse, or the observed distance, together with one of the sides, or the sun's meridian altitude, are given, to find the other side or difference of azimuth; and in order to prevent the possibility of mistakes being made by those unacquainted with the elementary part of trigonometry, the two following examples are given:—

Ex. 1st. At 5 minutes after apparent noon, the distance between a distant well-defined object upon the horizon and the sun's nearest limb was 78° 12′, the object being to the eastward; the meridian altitude of the sun 40° and its declination 15°; required the true bearing of the object?

Observed distance	78° 12′		
Sun's semi-diameter ..	+ 16		
Distance of centre	78 28	cosine	9·30090
Sun's altitude	40 0	cosine	9·88425
Difference of Azimuth	74 52	cosine	9·41665

Tabular Correction for $\left\{\begin{matrix}\text{Mer. Alt. } 40° \\ \text{Declin. } 15°\end{matrix}\right\} = 18'·9$

Therefore, correction for $5^m = 18'·9 \times 5 = 94'·5 = 1° 34' 30''$

True bearing of object..... S. 73° 17′ 30″ E.

Ex. 2nd. At 7 minutes after apparent noon, the distance between the sun's nearest limb and a distant object upon the horizon was 124° 15′, the object being to the westward; the sun's meridian altitude was 35° and its declination 10°, required the true bearing of the object?

Observed distance	124° 15′		
Sun's S. D.....	+ 16		
	124 31		
	180		
Difference..	55 29	cosine	9·75331
Sun's Altitude.....	35 0	cosine	9·91336
	46 14	cosine	9·83995
	180		
Difference of Azimuth..	133 46		

Tab. Corr'n. for $\left\{\begin{matrix}\text{Mer. Alt. } 35° \\ \text{Declin. } 10°\end{matrix}\right\} = 18'·0$

Therefore, correction for $7^m = 18'·0 \times 7 = 126' = 2·6$

True bearing of object ..... S. 135° 52′ W.

Greenwich, Feb. 1836.

Proposed Lighthouse on Europa Point, Gibraltar.

Mr. Editor.—Among the many recent and important improvements in lighthouses, not merely confined to our own coasts, but to our colonies also,*—and which have been the means of stimulating other stations† in contributing this great benefit to navigation, it is to be regretted that Europa Point, Gibraltar, should have remained so long without one.

That scientific hydrographer, Tofino, whose directions in the "Spanish Coasting Pilot," for brevity and accuracy cannot be surpassed, informs us, that between the Rock of Gibraltar and the Spanish Lines, the land is low and flat; from thence it rises to the Watch Tower of La Brera, and then continues rising till it forms a lofty extensive even ridge, called "Sierra de la Carbonera," on the summit of which is another tower, distant three miles from the northernmost part of the rock of Gibraltar, and that the coast between these two points is called the Bay of La Tanara.

In dark or thick weather it is very common to mistake the Rock of Gibraltar for the Sierra Ballones, (or Ape's Hill,) Barbary, and La Carbonera for the Rock, and therefore vessels readily become embayed, or run ashore in easterly or south-easterly winds in the Bay of Tanara, supposing it to be the entrance of the Straits. On the other hand it often happens that the Sierra Ballones is taken for the Rock, and the low banks to the southward of that ridge for the Strait, by which mistake vessels are embayed in N.E. and E. winds, and lost in the Bay of Tetuan. And how fatally true has this proved to an immense number of valuable lives, ships, and property, which are entrapped and lost every winter in the east bay of Gibraltar and of Ceuta in Barbary.

As an instance of what utility a light on Europa Point would be, H. M. S. V. Beacon, in March, 1836, on her passage from Malta to Gibraltar and England, was detained by contrary winds off Cape de Gatta for several days, as was also a fleet of forty sail of merchant vessels. On the 14th, the weather moderating, with variable winds, she was enabled to proceed to the westward; but so thick and hazy was the weather that the Spanish coast could scarcely be seen, although occasionally not more than from five to eight miles distant. On the 16th, it clearing a little, the town of Estaporra was seen N. 33° W. (true) 10 miles, and the Rock S. 63° W. (true) 16 miles, and a current was found setting towards the Spanish shore at the rate of one and a quarter mile per hour. At sunset it became very hazy, and at 8 P.M. a gale

* St. Elmo Light, Malta, now seen at the distance of nine leagues, in 1830 could scarcely be distinguished from the town lights.

† Pireus of Athens, Zea Harbour, and the port of Syra, in the Grecian Archipelago, which, although at present not very brilliant, will, no doubt, at some future period, be improved.

commenced from the eastward, which enabled her to round Europa Point, and to anchor in Gibraltar South Roads.

Whilst lying here, a fine Finland ship, one of the vessels that had been detained with the Beacon off Cape de Gatta, ran on shore on the east bay, and became a total wreck. She had stood down in a greater offing from Cape de Gatta, and not having been able to get observations for the two previous days, had also become set by the current towards the Spanish coast, and on the easterly gale springing up, (not having seen the Rock,) had shaped a course to pass mid-channel, and mistaking Ape's Hill, she ran on shore on the Spanish side of the Neutral Ground, supposing herself in the Strait. Several vessels arriving about the same time, were nearly meeting a similar fate.

As this generally occurs in the night when the land is in sight, the light would always be made out, Europa Point being generally clear when the highest point of the Rock is capped.

Tarifa Light is a preventive against the like accidents occurring to ships coming from the westward into the Straits, and instances of shipwreck in that quarter rarely happens.

The light should be revolving, to distinguish it from that of Tarifa, and *darkened* from being seen by a vessel the northward to N. 18° E. (true), so that by keeping the light in sight when to the north-eastward, a ship could not come nearer than two miles of the Neutral Ground, and nearly the same distance up to the town of Estaporra, and by never shutting it in to the westward of Ceuta, when to the south-eastward ships could not come nearer than five miles to any part of the Bay of Tetuan. It might, also, by being darkened in the proper bearing, point out the situation of the Pearl Rock between the Points of Trazle and Cabrita.

I am Sir,
Your very humble servant,
GEORGE JOHNSON, late Master H.M.S. Beacon.

NAUTICAL PATENTS AND PATENTEES. THEIR BANE AND ANTIDOTE.

(*Concluded from* p. 471, *No.* 54.)

Now, this, I say, was the usual routine of an invention submitted as of use to the navy, and, I will ask any one (but the inventor himself,) whether it would not have been *mercy* to have rather rejected the proposition on the first day after it was made to the board? and I think that I can shew a plan that shall produce decision without making our men-of-war schools for experiments. Does there exist one article, in use on board a king's ship, that continual experiments are not going forward to improve? Experiments generally introduced, as I have said, through intrigue, and such as any clear-headed man, with a knowledge and experience

of nautical affairs, need have no difficulty in pronouncing sentence upon after a very short consideration, without making that proud fabric, a king's ship, the arena of a parcel of childish experiments upon insignificant and palpably preposterous proposals of improving in articles of equipment, to the disgust of really scientific officers. What would Nelson, Howe, and Duncan have thought of the multitude of these "trashy" things, not only to be found (with volumes of instructions drawn up by enthusiasts,) encumbering "fighting ships," but which fighting ships are actually sometimes sent to sea to try the use of? It might have been observed in the newspapers, some time ago, that an inventor was actually sent to sea in a king's ship, to try some new scheme of getting soundings in deep water. The bauble was sent down to make its report, it came up making a very lame one; it was sent down again, when, lo! it reappeared not! Now, can no one be found who would decide such matters, such childish nonsense, to say the least of it—for I protest against the propriety *generally* of *trying* any thing on board a British man-of-war, except it be that of taking an enemy of very superior force.

Let us look at what *may be* the consequence of this experimentalising: I will take the gun-carriage of Commander Marshall, (see postscript,) for an example, because it is such a radical alteration in those that have hitherto answered the purpose of beating the enemy, that their failure *might produce* the consequences I want to show, more or less, these experiments are fraught with. I have read in the newspapers, that more than one king's ship has been fitted with these gun-carriages. Now, I beg to be understood as not intending any reflection upon this plan of Commander Marshall, but his gun-carriage is either an improvement or it is not; if not, if they should be found to contain any serious defects in practice, what a precious risk is here incurred! Suppose the guns to be brought into use to defend the ship, or for assault upon an enemy; a pretty account to render to the country, that the national honour had been brought into question, or perhaps disgraced by the failure of the gun-carriages. *The proper use of every gun put on board a man-of-war is to be accounted for to the country*; and, therefore, no such risk should be run, as here supposed. But then, it may be asked, are no improvements to be adopted? or if adopted, are they to be so without trial? I have selected this case of the gun-carriage, to take an important one in answering these questions, which I do thus:

If Commander Marshall's gun-carriages are decidedly better than those now in use, condemn all the old ones, and adopt his, and reward him for his invention; and I further mean to shew that the question of the merits of this invention not only should be at once decided, *but is capable of being so*, without fitting a man-of-war with them as experiment. Here I will detail the means I think

should be adopted—the tribunal, the machinery of an establishment—that shall effect all this, please every body, (but the ninety-nine out of a hundred disappointed inventors;) benefit the country by ensuring the adoption of what is good, and rejecting the frivolous and useless; and thereby, in either case, doing a real benefit to their projectors, doing away, in consequence, with the experimental *shops* our men-of-war are turned into, and, lastly, through all these advantages, save to the country an immense sum annually.

My plan is this,—there should be established in the department of the surveyor of the navy "a superintendent of improvements," to rank immediately next after the surveyor, with pay and emoluments just inferior to him; such superintendent, with a couple of clerks, is all that would be necessary. The superintendent should of course be an experienced gentleman, well versed, practically, in all that concerns a ship, her building, equipment, and sailing (consequently a sailor,) with a sufficient degree of scientific knowledge to be able duly to appreciate the principle of all that may come before him, with an ardent love for nautical pursuits, and, withal a man of habits of arrangement, system, and business, and what is very material, sufficient confidence in his own knowledge of the arts, and subjects of science generally, to enable him to come to *decision* upon his own judgment—the consequence of any error in such decision being hereafter shewn to be effectually guarded against.

Such an office being established, all applications whatever, whether of patentees or public officers, on all subjects of proposed improvements connected with the naval service, should be addressed or referred to the "superintendent," whose time should be devoted to their consideration.

Of these applications, I have already said, probably 99 out of 100 would be rejected, and that a score might be easily disposed of in a day.

The applications of individuals coming under this description I would designate First Class; and they should be disposed of with as little delay as possible by the superintendent's sole authority, stating the subject "not to be of sufficient importance for adoption," or the improvements "not appearing of merit sufficient to supersede what is already in use," or a reply of this nature being returned. It will be seen at once that this office would annihilate an immense quantity of business, with which, I imagine, the Board of Admiralty is continually annoyed.

To check any possible abuse in the superintendent's disposing of this class of applications, I would have it understood that an individual not satisfied with such answer (as probably many would not be,) might address the secretary of the admiralty thereon; the secretary would then require the *reasons* of the

superintendent, *in writing*, for the rejection; which should be forthwith returned to the second secretary, which he should read; and if the reasons therein given are satisfactory, it should be understood that he is authorized by the Board of Admiralty to answer the applicant's letter, stating that sufficient reason has been shewn to their lordships to confirm the opinion of the superintendent, and that such rejection should be final. Should the secretary, however, have any doubts, the opinion of the surveyor might also be called for.

Thus a great mass of business may be gone through: the principal Secretary of the Admiralty and the Surveyor of the Navy being saved nearly all trouble, which, along with the responsibility, is thrown upon the new officer.

The next class of proposals I will suppose to consist of such as may have apparent merit, and such as may, consequently, demand investigation. Here the superintendent would immediately acknowledge the receipt of the application, models, explanations, &c., that may have been sent; he would, if necessary, have personal communication and explanation with the party; refer for the opinion of such public officers as he might deem fit, who should give him *their detailed opinions in writing*. Next, the surveyor should be consulted; and if he agrees with the superintendents, the *approved* improvements should be submitted by them jointly to the Board of Admiralty, either for adoption, or for orders for such experiments to be tried as the surveyor and superintendent might think fit; the result of which would of course be reported to the Board, and recommended for adoption if finally approved by these two officers; and this recommendation should be immediately carried into effect, if approved of by the Board of Admiralty, *as part of the future naval equipment*.

It is in respect to this class of inventions, such as may appear to the two officers, upon whom devolve the recommendation of an improvement, but which requires trial, that I think that such an appointment as I have ventured to recommend, will most tend to the advantage of the public; and I will here resume the case of Commander Marshall's gun-carriage: I take this (as I have before observed) as belonging to a very important branch of naval equipment; and one in which, the proposer advocates a very great alteration upon existing gun-carriages. Now, every new invention is either an improvement, or it is not; and the determining of this, I mean to show, may, in almost every possible case, be effected by the interference of the superintendent, without the delay and loss of time by which the public is injured, if any thing of utility is delayed being brought into use, and in all cases the inventor is grievously injured.

What can there be impossible in settling, in a very short time, whether or not these gun-carriages merit adoption or rejection?

I will maintain that there can be no possible occasion ever to send them to sea for the purpose; that is to say, as part of a man-of-war's equipment. The superintendent having, we will suppose, orders "to try such experiments on these gun-carriages as would enable the Board of Admiralty to decide upon Commander Marshall's invention;" he would, I should anticipate, cause three or four guns of different calibers and descriptions, to be mounted in some convenient place; say (if it is still in existence) the erection upon South-sea common, at Portsmouth, representing part of a man-of-war's gun-deck. There he would be authorised to require the admiral to order the attendance of such naval officers as might be deemed proper; with assistance from the Excellent, and such engineers and artillery officers as might be there collected: or the Excellent herself might be a fitter place to try such experiment. He would have these guns manned and served in such manner as the inventor recommended; and if before such an assemblage the guns were commenced firing after breakfast, and kept at it till dinner-time; if some very great advantage did not appear evident during that time, the gun-carriages most assuredly might be reported upon as "not to possess sufficient merit for adoption." If, on the contrary, great advantages were apparent, but attended with some doubts on any point that required to fire the gun afloat, to either remove or confirm them: fit immediately a brig, or any small craft, that happened to be in port, and disposable for a few days, with two or three, or if a gun too large for these craft is wished to be tried, fit some temporary stantions on a dock-yard lighter; and put a long thirty-two pounder on one side, and a sixty-eight pounder on the other; and just send the same party round the Isle of Wight in her,—and then, if such experiments had also been made at Plymouth and Sheerness, and by the artillery officers at Woolwich, and they could not all agree in recommending the gun-carriage; it *could not* contain merits worth further consideration: and thus ends all anxiety on the part of its inventor, and all further trouble and annoyance to the public boards; to say nothing of the expense and the risk, I have already shewn, may be the consequence of fitting men-of-war to try the same. But should such experiments end in proving great advantages in the invention; that the guns can, under all circumstances, be fired with greater precision, quicker, trained better, worked with fewer men, and, in point of fact, render the battery of a man-of-war more efficient: then do not let us lose a moment in availing ourselves of their use,—and we should of course see an order forthwith to that effect.

Now, no one, I think, can deny the possibility—if there was an efficient and responsible officer to attend to these affairs—that even such an important one as the merits of this gun-carriage could be decided upon at once; nor can it be denied, that, in

every point of view, all parties would be benefited by such decisive steps. And if these considerations are applicable to such an important article in naval use,—how insignificant, comparatively, would be the difficulty of settling minor points, on which improvements might be proposed. Thus would I have this important officer employed,—and effect great good he assuredly would: in money, vast sums would be saved, in bringing into use real improvements. It is clear the plan could not fail,—and is it not quite certain, that under the superintendence of such an officer, the abuses I have detailed in the early part of this letter *could not have occurred!*

As there can only be two divisions—the good, and the good-for-nothing—in articles of professed improvement, I have thus disposed of both and all. Building up a most efficient office, conducting the business of its department with hardly any trouble to the Surveyor of the Navy, (who has no time to attend to such matters *in their details;*) and releasing all other departments from an infinite deal of labour,—in a branch of business which is now conducted, no one knows where, or how, or by whom,—but certainly to no one's satisfaction, and with great detriment to the public service. Although so much is to be done by *one man*, I think it will be admitted, that he is fenced round so effectually with efficient checks, that he can absolutely do nothing but good; and that at a trifling cost in the establishment, and the certainty of effecting great savings in the public expenditure.*

There remains an objection to remove, which is, that in considering the patented inventions of individuals by a public Board, it is *embarrassed in its proceedings*,—that is to say, in the many cases where a patent has been taken out for an improved article of naval equipment,—which article *has been hitherto made in the dock-yards*,—and for the manufacturing of which, perhaps, large sums have been expended in building and machinery. I think that the law of patent-right should provide that the rights of the patentee should not interfere with the public service,—but that every known improvement may be freely applied for the public use; the department so using it, as a matter of course, recommending parliament to compensate the parties. This provision would prevent much unnecessary bargaining and quibbling about legal rights,—a patentee always, as a matter of course, having a very different notion of the value of his invention, than any one else. It would, however, serve the patentees themselves in two

* It appears from the newspapers that the old razeed Barham has beaten the Vernon. Captain Symonds will, however, be under no uneasiness at this event; a razeed ship is his own plan, in increased beam; she is also, let *me* observe, a *ship lightened of some hundreds of tons*, and carries the same, (or even more) sail. A razee *must go—must beat every thing.*—Quere. Could not the sailing qualities of the Vernon have been ascertained before she was three years in commission?

ways; first, because I think a public board should act upon the principle of compensation to all the proposals and suggestions of improvements which they adopt, not only without raising any question about patent right,—but even where no patent exists at all. In the next place, if the patentee is wise, and will take the advice of a friend—one who knows something of the matter—he will accede to any reasonable proposition, rather than insist on *his legal rights*, and be content with what a committee of parliament award him. Looking at the notoriety of such an acknowledgment of his merits, combined with that of his invention being adopted for the public use, as of effectual service to secure the custom of the public, as far as his invention is of use to individuals.

This arrangement would insure the manufacturing of all articles in the dock-yards, for which arrangements are in existence: and this consideration leads me to notice another subject, upon which, I am convinced, much misapprehension exists; I mean the opinion that the cheapest method of obtaining all supplies, *is by contract, open competition:* there never was a greater fallacy. Unless we suppose *all contractors mad*, it must be conceded, that, upon the aggregate, *a profit is made by them;* consequently, by good management in the yards, the article could (generally speaking) be there produced of the same quality, and *the profit saved to the public;* further, every commercial and manufacturing man knows, that a very considerable item of the expense of all works of magnitude, consists in the "charge of the establishment;" this item of charge, in a great measure, is already in existence in the public yards; where buildings (or at all events the localities) and officers exist, and are paid, fit for almost every purpose; but it is more especially in *reference to the quality* of what is furnished under contracts, where the public suffers.

You, Mr. Editor, and the officers of the navy, and those who preside over them at the Admiralty, are not up to the "*tricks of trade.*" There are many honourable men contractors, but of all of them it is no libel of course to say, that it is their own special gain and interest that prompts them to obtain a contract; that competition is such as compels them to offer at such low rates as, when obtained, obliges them to the constant exercise, to the utmost of their ingenuity, of their wits, how they shall reduce the charge of making the article contracted for; their view being, just to do so much, and no more, as will enable their supplies to pass survey at the yards; and that the public interest, in such contracts, is never, for one moment, a question to be entertained.

This I maintain is the nature of a public contract, where competition is brought into action; the other dealings between a public board and an individual being, where contracts are made, (or supplies furnished without contract,) upon what may be agreed

upon as a fair price, and in supplies so furnished, the continuance of an advantageous bargain may, in a great measure, depend upon their quality.

Every thing should, in fact, be made in the public yards, that the public service requires; the only exception being, such as could not be so, without manifest disadvantage. H. M. ships should be furnished with every thing of the very best *that art and care can produce;* and this is only to be effected in the dock-yards. (The dock-yard officers will, I trust, see in this opinion, that I do not undervalue their abilities.) The idea that any saving is effected by a different course, is folly, and hardly requires figures or arguments to prove the absurdity of. But there is, or ought to be, a higher consideration than mere money, to be consulted here — *a man-of-war's efficiency.* A failure of the least article will, perhaps, be the loss of a ship, and the service upon which that ship is employed, may be such as the country can ill dispense with: upon the failure of a trifling article of equipment, the honour of the country, and that of her officers, may be compromised: and last, though not least, the bad quality of an article of a ship's equipment, may be the loss of all her crew!

To talk of mere matter of cost of articles, upon the efficiency of which depend such important interests; where a *difference in quality* is, to all who can think but for a moment, a necessary consequence of *a difference in price*, (looking at Dock-yard work "*versus*" Contract,) is sheer insanity; and I trust that this notice thereon may have the effect of inducing attention to the subject. I would venture even to recommend to Mr. Hume (whose services to the public I am the last to question) to think well this matter over, before he again asks why any article of naval equipment is not made by contract; the very term "contract" should convey to him what it does to me, "suspicion" at least, if not a "contrivance to defraud the public," and, what is of greater consequence, to endanger the efficiency of the public service.

I am, Mr. Editor, your most obedient servant,

January, 1836. "MERCATOR."

P.S. Accidentally looking over the obituary of your February number of last year, since writing the foregoing, I observe the death of Captain Marshall, the inventor of the gun-carriage to which I have made allusion. Had I known that this gentleman was not alive, it might have caused a difference in some of the remarks made on his invention; but the argument for which the subject was introduced, would in no degree be affected. The fact is, that I saw these gun-carriages five years ago, on board Lord Yarborough's yacht; and I think I saw in the newspapers, at some subsequent period, that the inventor was promoted for

his ingenuity; and yet I believe that, to this present hour, the merits of his gun-carriages remain a question.

Thus an ingenious man may not only linger for years upon "hope deferred," but *death* seems in this case to have overtaken the inventor, before that could be settled, which I think I have shewn a few days sufficient for!

For any unimportant errors, such as I have fallen into respecting the ingenious officer, Captain Marshall, my excuse must be—absence, and comparative seclusion.

New Light in the English Channel.

The following notice has just been received from the French Government:—

Light on Point de Ver, Department of Calvados.

Navigators are hereby informed, that from the 15th of August next, a light, varied by flashes, will be shewn every night from the tower recently erected on Point de Ver, in lat. 49° 20′ 28″, and long. 0° 31′ 4″ W. of Greenwich.

The light will appear at an elevation of 39·4 English feet above the base of the lighthouse, and 137·8 English feet above the level of high-water equinoctial springs.

The flashes will succeed each other every four minutes, and will last from eight to ten seconds.

The least brilliancy of the light, which will be seen in the intervals between the flashes, will be preceded and followed by short eclipses. The light may be seen in fine weather at the distance of fifteen nautical miles.

Hydrographic-Office, Admiralty, 20th July, 1836.

Marine Insurance.

To the Editor of the Nautical Magazine.

Kirkcaldy, 5th August, 1836.

Sir,—Your correspondent, Mercator, has so correctly and ably exposed the defective construction of our merchant ships in your April and May numbers, that he has left nothing for any one else to say on the subject; and I am exactly in the predicament of the honourable member, not famed for oratory, who, after Burke had electrified the House of Commons by one of his most splendid orations, rose up to address the House, and whilst every one stood aghast at his temerity, merely remarked, "Mr. Speaker, I say ditto to that there honourable gentleman." In like manner, I say ditto to Mercator; and in adding two or three observations on the subject, in explanation of some part of his statements, I hope that he himself will coincide in the correctness of them.

We are agreed on the practice and its effect, but not entirely so as to the cause of the defective construction. Mercator attributes this to ignorance, combined with interest. I attribute it to interest alone, and I think it will not be difficult to shew this even from Mercator's own statement.

Mercator admits, that a better method of construction is not only known, but it is in daily practice in the King's dockyards. Then, since this is the case, and that both methods of building are carrying on daily in the same port—that of London, for instance—is it possible to believe, that were it not because the worst practice is more for the interests of the parties concerned than the better, that the better would not be adopted? Let any one shew the contrary if he can. Is it not fair proof of the fact, that we find individuals in all ranks and walks of life, always sharp enough in looking after their own interests. Mercator may depend upon it, that the same principle that produced the best chronometer in Britain, will, if applied, produce the best and safest merchant ship. That is, make it the interest of ship-owners to have the best and safest ships, and they will immediately be got. Although it cannot be the interest of any ship-owner to have a bad ship, that is, a vessel constantly requiring repairs, nor (if he acts honestly) one that will go to pieces in the performance of her ordinary duties, yet, under the influence of sea insurance, if she be insured to her full, or even nearly to her full value, and, more particularly still, if the freight be either insured or paid in advance, and the vessel be exposed to danger, it is clearly more to his interest that she should become a total loss, than be preserved in a damaged state. Though this may be controverted, exactly as it may be controverted whether I am alive when writing this, it never can be disproved. I therefore hold it a clear principle,—the cause and effect have already been shewn in the Nautical Magazine,—that a ship-owner's interest, when his vessel is insured, is to have the minimum degree of safety, upon which his vessel will hold together and perform her duties, and when she is exposed to real danger on a rock, sand-bank, or lee shore, that she shall readily go to pieces. If his vessel be not insured, his interest is exactly the reverse as to loss.

Mercator is clearly in error too, (I speak it respectfully), where he says, "Your correspondents will acknowledge themselves quite in the wrong by taking their own view (in respect to high premiums I mean,) of what would be effected by improved ships; namely, that there would be *no losses*. Insurance would certainly exist, notwithstanding; in which case it is evident, that as all the premiums paid (or presented) to the underwriter would be profit, even a low rate would leave very satisfactory results to the gentlemen of Lloyd's, and the insurance companies." Now, here are two errors. The first is, that none of your Kirkcaldy correspon-

dents, so far as I am aware, ever said, that by improved ships there would be *no losses*. For my own part, I have always maintained the contrary; and I again repeat, that in my opinion, it is impossible to make ships to be indestructible, or exempt from shipwreck. Mercator, therefore, clearly proceeds on an erroneous assumption. The second error is, "Insurance would certainly exist, notwithstanding there were *no losses*." If there were no losses, what would there be to insure against? The simple asking of the question, conveys an answer to it; and the very term insurance would, in such a case, be misapplied and without meaning; and, which I have no doubt, Mercator will readily admit.

In his exposition of the well-remembered Baltic risks, too, I think Mercator clearly makes out, by his own shewing, that it was not the principle of high risks and high premiums being most profitable to underwriters, that failed, but the means (bribery) of carrying it on. Continue the principle, whether by just and honest dealing, or by bribery, and I will answer for it that the system will never break down; and that, had such been the case, it would now have been in full vigour and operation. I still maintain, notwithstanding all that has been said to the contrary, that high risks and high premiums will always be the underwriter's great aim and object to effect; but I will give an example in point.

In the year 1813 I commanded a ship insured at twelve guineas per cent. In such circumstances, if eight ships out of a hundred went safe, the underwriter was a gainer. Last winter I received a policy of insurance on some goods from Kirkcaldy to London, effected at ten shillings per cent. A London insurance broker, who chanced to come into the office, after looking at it with due amazement, remarked, that on such terms an underwriter must clear above two hundred risks before he was safe. The principle clearly is, that the one risk and the one premium was greater than the other. But look at the effect. In the one case, clearing twelve guineas per cent. if the vessel went safe, and having to run only eight risks out of a hundred in clearing £100. In the other case, clearing only ten shillings per cent., and having to run above two hundred risks on vessels, before the underwriter was safe, and cleared £100—a trade which, the broker remarked, would not be worth carrying on.

I am quite satisfied that the principle is not altered by the above shewing—safety to the two hundred vessels being more profitable to the underwriter, than unsafety to the eight. But as, in such cases, the ship-owner in general takes his risk on the ship, and the merchant on the goods, the business by such means is withdrawn from the underwriter altogether, and he may truly say with Othello, that his occupation is gone. He, therefore, will always be anxious for high risks and high premiums, and such principle we find strongly exemplified in practice, notwithstanding Mercator's able

remarks to the contrary. I beg to say, that I entertain no hostility to underwriters, many of whom, I am happy to say, I know to be most honourable and upright men. But I am strongly impressed with the belief, that their occupation, in so far as it has been the means of retarding the introduction of safety into the construction, and means of conducting, our merchant vessels, (and that such has been the effect I make no question, and thereby effecting a great and unnecessary sacrifice of human life, as well as waste of the national property,) is a bad one.

I think the nation is under great obligations to your able correspondent Mercator, for his masterly exposure of the defective construction of British merchant ships, and which, I have no doubt, must shortly lead to a reformation. Indeed, were the subject generally understood, the abuse would not remain for eight and forty hours unreformed. It is ignorance of the subject, alone, which has tolerated it so long; and to those directly interested, and profiting by the abuse, where ignorance was profitable, it would have been folly to be wise. In every article from Mercator, in the shape of vessels—for although it does not seem to be thought of, the shape of a vessel is one thing, the construction or putting the pieces of the fabric together, another—I most cordially agree with him. I not only believe the principles and shapes of a vessel he lays down to be theoretically correct, but they agree with all practice and experience I have had, as master of a man-of-war and of a merchant ship, to every quarter of the globe, and he has expressed them more correctly and better than I could have done. I therefore trust, that where I have differed from him, he will take it, as it is certainly meant, in good part. It is clear we both have the same object in view; and although we may differ on the causes producing the present system, we do not differ on its effects, nor on the means to be applied in remedy. I hope he will still continue to urge the subject on public attention; and am,

Mr. Editor, JAMES BALLINGALL.

PHENOMENON AT SEA.

To the Editor of the Nautical Magazine.

Rosemount Gilcomstone, by Aberdeen, 9th June, 1836.

SIR,—I am a reader of your magazine, and feel much pleasure in seeing so ably-conducted a work turned out of hand by an officer of the navy. The following account of a phenomenon observed by me, has been shelved this year or two back, and as I have *sailed round the world several times*, never having seen any thing before so nervous, I send it to you for publication, should you think it worth while: I did describe it on my arrival to Captain Horsburgh of the India House, and he at the time

requested I would give it publicity, but from some cause or other it has never seen daylight since.

Your very humble servant,

ORLANDO H. WILSON, Lieut. R.N.

On the 19th September, 1832, on my passage, in command of the Hon. East India Company's chartered ship "Barrosa," for China, in longitude 105° 30′ east, and running to the northward betwixt 11° and 10° south latitude, about 6. 30 P.M., (whilst sitting at table chatting with my surgeon after tea,) I was called on deck in a rather mysterious way. The mate said to me, "Look here, sir, look at the sea, I am afraid we are amongst shoal water." The first impression on my mind, from the appearance of the sea being purely white, was that we were ploughing our way through thick snow; but I concluded directly that we were in shoal water, or over some undiscovered coral reefs. We were then going at the rate of seven to eight knots per hour, with studding sails set "low and aloft," before a fine fresh breeze. I was conscious that no shoals were near us by the chart, yet, like "Peter the doubter," I immediately ordered studding sails to be taken in, hauled up the courses, and threw all aback. Indeed, such was the impression apparently upon all hands, from the unnatural appearance of the sea, that no further stimulus was necessary, for the lads moved about as brisk as lamplighters.

All hands reduced the canvass in a short time, and leads were in requisition, both hand and deep-sea. I could not help "laughing in my sleeve," when the gunner called out, "Sixty fathoms, sir, no bottom." "Try again, take the lead further forward to the lee sprit-sail yard-arm," was the reply; again, "Ninety fathoms, sir, no bottom." As we were still in suspense, he was told to try again, and watch when he was directed to heave. This was soon done, and 100 fathoms found no bottom.

I then hove to in my own mind, and began to think this extraordinary appearance of the sea must have been caused by some atmospherical influence, I looked around the horizon, and perceived nothing in particular but a bank like a fog bank, 2° to 3° above the horizon, all round it. The stars were appearing, and all round was clear over-head, and betokened a fine steady night. I then ordered two buckets of water to be drawn, one after the other, and darkened the pantry, examined the water in them and in tumblers, and perceived nothing in either, but what was to have been expected in any sea-water drawn in the evening, namely, a few sparks of phosphorescent light, caused no doubt by the animalculæ or medusæ generally to be found in sea water, more or less in all latitudes.

The appearance of the sea I could not compare to any else, than if we had been ploughing through thick snow. It was purely white, and without the smallest difference or alteration of colour,

even in the wash of the ship cutting through the water about the bows or alongside, or in her wake, and nothing of that phosphorescent streaky whiteness, which is often seen about the equator and other places sometimes in an evening, when the spawn of fish or animalculæ is strong; but the sea, the "open sea," was purely white, and all hands gave it the name of the milky sea.

We bore up shortly after, but this appearance of the sea did not leave us until about 2 A.M. the following morning. Such a phenomenon was rather disagreeable, even to all hands to look at; and although we had occasion for sea water, we did not draw even a bucket-full. It was most disagreeable to look at to every one on board; and although I attributed the appearance when I made sail to the effect of atmospheric influence, it caused me to jog very canny during the night, with a good look out. I waited up until 12 P.M., and at 2 A.M. was called to see the last of it, as we left it astern.

It is worth remarking, that on the 25th September, when running towards the straits of Gaspar, two vessels in company, one of them the "Solway," Captain Proctor, boarded me, (it being a light air,) and in conversation the white sea was mentioned. It appeared that he had met with it in nearly the same parallel, and described it as the most strange sight he had ever seen. Also a French clipper of a ship for Manilla and China passed us in the straits of Sunda on the 23d September, which ship I was on board of at Whampoa; he recollected us again, and the phenomenon was talked of, when he told me he had experienced a similar appearance of the sea nearly in the same parallel, and described his feelings on the occasion: indeed, the French captain shrugged up his shoulders, and with his mate expressed his horror of the "mer blanche."

[With the view of serving for a future reference to the position of the foregoing appearance, we have recorded Lieut. Wilson's account of it, although the phenomenon is mentioned by former navigators.—Ed. N. M.]

DANGER IN THE EASTERN SEAS.

THE following notice of a newly-discovered danger in Banks Strait, Van Diemen's Land, we have received from Mrs. Janet Taylor:—

"Struck on a rock off Swan Island, in Banks Strait, Van Diemen's Land; the centre of the island bearing South one mile and a half; the small islands bearing W.S.W. two miles and a half; in the barque John Dennester."

"THOMAS MACKER, Captain.

The foregoing is recorded for the immediate information of navigators, as cautions to them when in its vicinity. Any remarks we may have to make on it will appear in our next.

Coral Shoals—Renewal of Soundings.

Hydrographical notices inform us of coral shoals having been discovered from time to time in frequented parts of the ocean, and in situations quite unexpected, because vessels have passed over those spaces for more than a century. Surprise may have been excited some years ago that such dangers should not have been known to mariners long before the period of their discovery; but there is now no reason for such wonder, inasmuch as the progressive increase of such structures is sufficiently well known to almost every seafaring man at the present day, to account for the appearance of dangers where none had previously existed.

This assurance being clearly established, it becomes a measure of necessary caution, that soundings should be periodically taken on coral shoals perhaps every 5, 7, or 10 years; as the zoophyte is an incessant worker, *slowly* but *permanently* adding to the height of its wonderful structure.

The depths, therefore, over a danger of this nature, will, after a certain time, alter; but, probably, not uniformly—some parts of the shoal advancing upwards at a slow rate, whilst other portions will more quickly shoot up, and the water of course become shallower and shallower, until ultimately the rocks arrive at the surface.

In some instances, when the water is not too deep, the coral will spread horizontally, so that reefs and shoals composed of this material may be expected to increase in breadth as well as in height; it would, on this account, be a proper caution that their entire suface be occasionally examined.

From this circumstance we may correctly infer, that the channels leading into harbours within the tropics, bounded by coral shoals and reefs, will, in a series of years, be importantly altered, by the lateral increase of the material composing them; which, if progressing at the same rate as the vertical increase, considering this to be very slow, would, in the course of 50, 80, or 100 years, render those that are narrow, so contracted as to become dangerous to navigate;* and, in a further course of years, block them up all together; and coral shoals and reefs projecting from points of land may, except where the depth suddenly becomes great at the extreme, be expected to advance outwards. The propriety therefore of having these periodically remeasured, and the marks for avoiding them readjusted, appears obvious.

From such information as we are at present in possession of, regarding the architectural habits of the coralline animalculæ, we learn that, generally, if not invariably, the windward sides of their structures are carried upwards in a perpendicular direction, and that it is on the leeward portions they work without any regularity

* We believe that a portion of Torres Strait is an illustration of this.

of form or uniformity of line. It would, therefore, not be difficult, from the position of a channel with reference to the perennial wind, to determine whether it will be rendered useless or not in the course of time.

It would be a desirable point gained in hydrography, if, from observation continued for a series of years within the tropics, we could gain a knowledge of the amount of work accomplished by these minute insects in a given time, under the various circumstances of position, locality, wind, current, tide, and weather. For it is certain we can form no determinate idea as to the increase of these accretive submarine formations, but from actual observation often repeated.

The following interesting extract relating to our subject, some readers, perhaps, will not be prepared for; and we must acknowledge that it came quite unexpectedly upon ourselves.

The article treated of—"*Chelonia*, or Turtle,"—in the British Cyclopædia.

"It should seem that volcanic formation, and also coral reefs, have some peculiar attractions for these animals; and it is natural to suppose that they should, inasmuch as these are the elements of much greater fertility for those marine plants upon which turtle feed, in both of these, than those are in more earthy formations. Volcanic matter always contains a considerable proportion of salts or alkalis, and there is a good deal of animal matter in the substance of the coral reef. These substances not only act as manures to the sea-weeds, but they serve to combine the earthy particles more firmly together, and thus a firmer hold is given to the vegetation. This is so remarkable, more especially on the reefs, that, after the lapse of a year or two, substantial rock, with thick vegetation upon it, may be found in places where the deep-sea line could previously find no bottom."

The progress of the zoophyte's labour would be rapid indeed, if we were to take the writer's words literally as applied to the vertical rise of its habitation. To those who are conversant with the subject, it will appear that there is but one way of accounting for the circumstance, as stated in the extract; it is this—that the "substantial rock" must have been hove up towards the surface by submarine volcanic agency. In no other way,* that we are aware of, would such an event happen in so short a time; for, as we stated before, the coralline insect is a slow worker, at least the observations which have been made hitherto would seem to warrant us in believing so, (yet it is possible we may be mistaken;) at all events, however, as the deep-sea lead can reach beyond 200 fathoms, or 1200 feet, we shall not, perhaps, be in error when doubting the possibility that the zoophytes can progress their structure so

* Or by an expansive force acting upwards, which is much the same thing.

rapidly as to elevate it to that amount, or indeed any thing like it, in the determinate period of one or two years.*

The work from which we have taken the above extract is excellent on many accounts, particularly in the correction of a vast deal of popular error, and our idea of the coral zoophyte being tardy in raising its architectural work may be one of those; yet without being unreasonably sceptical, and if we understand the passage correctly as relating to the *coral* reef, we are disposed, unless the qualification we have expressed be admitted, to adhere in our belief until further observations prove that in such belief we are wrong, and of course that we do not understand the precise meaning of the sentence in question.

We need not describe the nature of coral to sailors, or inform them, that although the branches are brittle, when these are consolidated into masses, they become a consistent rock of a very pure carbonate of lime, whilst in their early stage they may be broken off readily by slight pressure of the hand.

Although formidable as dangers, to ships, the shoals composed of coral are in reality less so, *under certain circumstances*, than volcanic rock, or indeed any other, except the sand-stone, which is generally soft whilst in an immersed state. The reason is, that, the most predominant form of coral is the pointed, or branch, which, from its fragile nature, when forced into the wood-work of a vessel, breaks short off, and so fills up the cavity it makes by the contact. This of course can only apply in the "touch-and-go" rub, with impunity. Except perhaps in very sheltered places, the coral shoal cannot be struck by keel or bilge: when a vessel strikes and forges on into shallower water with every send of the billow, there will be an end of her career; she will speedily be "ripped up" from gripe to heel!

The most dangerous species of rock to encounter of all which we are acquainted with appertaining to the ocean, is that which the Spaniards have named the "Soboruco." It is extremely hard, with an irregular honeycomb surface, the edges of which are very sharp; it is of a dark grey or ash colour, and when struck sounds like metal. It has been generally considered to be a species of coral, which may be correct; it is, however, questionable whether it be not volcanic. Its appearance strongly impresses us with this idea, as it bears a striking resemblance to lava; to that particular form which we should conceive it would, when expanded over a level space, assume whilst in a state of ebullition, and becoming suddenly cooled by a disruption of water.

At the island of St. Andreas† there is a platform of this rock near the entrance of the Cove in the western anchorage. We

* Or indeed under several *centuries*.

† On the Spanish main.

have also seen vast quantities in the *mountains* of Jamaica, and about the west end of Cuba it abounds.* A CONCH-DIVER.

NAUTICAL NOTICES. SOUTH-WEST COAST OF MEXICO.
By Captain Basil Hall, R.N.

(Concluded from p. 433.)

Panama to Acapulco. 5th of February to 7th of March, 1822, (30 *days.*)

WE sailed from Panama on the 4th of February, and anchored on that afternoon at the Island of Taboga, where we filled up our water. Next evening, the 5th, we ran out of the bay with a fresh N.N.W. wind, and at half past two in the morning of the 6th rounded Point Mala, and hauled to the westward. As the day advanced, the breeze slackened, and drew to the southward. In twenty-four hours, however, we had run one hundred and forty miles, and were entirely clear of the bight of Panama. It cost us nearly six days more before we came abreast of Cape Blanco de Nicoya; at first we had light winds from S.S.W., then a moderate breeze from N.N.W., which backed round to the eastward, and was followed by a calm: during each day we had the wind from almost every point of the compass, but light and uncertain. Between the 11th and 12th, we passed Cape Blanco de Nicoya with a fresh breeze from S.S.E. and then S.S.W., which shifted suddenly to the northward, afterwards to the N.N.E., where it blew fresh for upwards of twenty-four hours, and enabled us to run more than two hundred and thirty miles to the W.N.W. in one day. This breeze, which is known by the name of Papagayo, failed us after passing the gulf of the same name, and we then came within the influence of adverse currents. On reaching the longitude of 92° W., on the 16th we were set S. 16, W. 77 miles; on the 17th, N. 16 miles; on the 18th, E. 51 miles; on the 19th, S. 78°, E. 63 miles; on the 20th, S. 62°, E. 45 miles; on the 21st, S. 87°, E. 17½ miles; all of which we experienced between 91° and 93° west, at the distance of twenty or thirty leagues from the shore, meanwhile we had N.N.E. and northerly winds, and calms.

After these currents slacked, we made westing as far as 93½°, by help of N.N.E. and easterly winds. On the 22d, 23d, and

* On the coast of France, a submarine rock, which would be almost as formidable to vessels as the *Suboruco*, exists. It is stated by a scientific gentleman to be silex cemented by lime and sand, and that it belongs to the tertiary formation. It is known by the name of "French *Burr*" stone, and is prepared and formed into mill-stones by an individual on the quay at Bristol. It has a curious appearance, being honeycombed, celled, so as to give the idea of its being perforated by worms and zoophytes whilst yet in a soft state. It is hard, brittle, and of a yellow-brown colour, intermixed with whitish silicious veins and patches.

24th, we were struggling against north-westerly winds off Guatimala between 14° and 15½° north latitude. This brought us up to the top of the bay of Tecoantepec at sunset of the 24th; we then tacked and stood to the westward. The weather at this time looked threatening; the sky was clear overhead, but all round the horizon there hung a fiery and portentous haze, and the sun set in great splendour; presently the breeze freshened, and came to north by west, and before midnight it blew a hard gale of wind from north. This lasted with little intermission till six in the morning of the 26th, or about thirty hours. There was during all the time an uncommonly high short sea, which made the ship extremely uneasy. The barometer fell from 29,94 to 29,81, between noon and four P.M., but rose again as the gale freshened; the sympiesometer fell twelve hundredths. This gale drove us to the south-west by south about one hundred and forty miles. A fine fresh breeze succeeded from N.N.E., which carried us one hundred and twenty miles towards Acapulco, and left us in longitude 97½° W. and latitude 15° N., on the 27th. This was the last fair wind we had on the coast, all the rest of our passage, as far as San Blas, being made by dead beating. The distance from Acapulco was now less than one hundred and eighty miles, but it cost us eight days' hard work to reach it, principally owing to a steady drain of lee-current running east by south at the following daily rates, viz., thirteen, sixteen, twenty-seven, thirty-seven, twenty-five, ten, nine, seven, and nine miles. The winds were, meanwhile, from N.W. to N.N.W., with an occasional spurt from south-east and south, and several calms. We had not yet learned the most effectual method of taking advantage of the small variation between the day and night winds.

Acapulco to San Blas. 12th to 28th of March, 1822, (16 *days.*)

This passage was considered good for the month of March, but in the latter days of December, and first of January, an English merchant ship made it in ten days, having a fair wind off shore nearly all the day. A merchant brig, which passed Acapulco on the 6th of February, at the distance of 150 miles, was a fortnight in reaching Cape Corrientes, and nearly three weeks afterwards getting from thence to San Blas, a distance of only seventy miles. There is, however, reason to believe that this vessel was badly handled.

It would be useless to give any more detailed account of this passage than will be seen in the preceding remarks. We generally got the sea-breeze about noon, with which we laid up for a short time W.N.W., and then broke off to N.W., and so to the northward, towards the end of the breeze, as we approached the coast. We generally stood in within a couple of miles, and sometimes nearer, and sounded in from fifteen to twenty-five fathoms. If the

breeze continued after sunset, we made short tacks, in order to preserve our vicinity to the land, to be ready for the night wind. With this we generally lay off S.W. sometimes W.S.W. and W., but only for a short time. After passing latitude 18°, the coast trended more to the northward, and a much longer leg was made on the larboard-tack, before we were obliged to go about. As we approached Cape Corrientes, in latitude 20°, the land-winds became more northerly, and the sea-breezes more westerly; so that, as the coast also trended off the northward, a more rapid advance was made.

On passing Cape Corrientes, the Tres Marias Islands came in sight; and if they be passed to the south-eastward, at the distance of eight or ten leagues, and a N.N.E. course steered, Piedra Blanca de Mar, off San Blas, will be readily got sight of. This is a round, bold, white rock, in latitude 21° 34¾′ north, and longitude 105° 32⅙′ west, and being one hundred and thirty feet high, forms an excellent land-mark. It lies exactly eleven and three-quarters of a mile nearly due west from the harbour of San Blas, which is pointed out by another white rock, bearing south, 83° east from the former. Close round this last rock, called Piedra de Tierra, on the eastern side, lies the anchorage. The coast between Cape Corrientes and San Blas is full of deep and dangerous rocky bights. It is little known, and ought not to be approached. Care should also be taken, in the night-time, to keep clear of a small cluster of low rocks, which lie twenty-two miles to the N.N.W. of Cape Corrientes. We made them in latitude 20° 43′ north, and longitude 105° 51′ 4″ west. Vancouver places them in latitude 20° 45′ north, longitude 105° 46′ 55″ west; an agreement sufficiently near. Our difference of longitude was ascertained by chronometers next day from San Blas, where the longitude was afterwards determined by the occultation of a fixed star.

Cape Corrientes lies in latitude 20° 24½′ north, longitude 105° 42′ 26″ west, or 23′ 59″ west from San Blas.

During our stay at San Blas, from the 28th of March to the 15th of June, we had light land-winds every night, and a moderately fresh breeze from west every day, with the thermometer always above 80°.

Towards the end of the period, the sky, which had been heretofore clear, became overcast; the weather lost its former serene character, becoming dark and unsettled, and, on the 1st of June, the periodical rains set in with great violence, accompanied by thunder and lightning, and fresh winds from due south. This was nearly a fortnight earlier than the average period. The heat and closeness of the weather increased greatly after the rains set in; but although our men were much exposed, no sickness ensued, excepting a few cases of highly inflammatory fever. The

town was almost completely deserted when we came away; the inhabitants having, as usual, fled to Tepic, and other inland towns, to avoid the discomfort and sickness which accompany the rains.

As soon as the rains subside, in the latter end of October, or beginning of November, the people return, although that is the period described as being most unhealthy, when the ground is still moist, and the heat of the sun not materially abated.

Naval Chronicle.

The experimental squadron, under the command of Rear-Admiral Paget, G.C.H., after touching at Plymouth, finally sailed from that place on the 12th Aug. for a cruize (as it is stated by the Hants Telegraph) 200 miles to the S.W. of Scilly. The ships mentioned in our last, with the exception of the Talavera, (which vessel is gone to Lisbon,) have been joined by the Minden. We abstain from repeating any reports at present of the sailing qualities of any of the ships, satisfied that official documents similar to that in our last number are the best. The Russell, 74, returned to Plymouth from Lisbon on the 27th July, having had a tedious passage of nineteen days, and met with much bad weather, in which she sprung her maintop-mast, and lost her topgallant-masts. The Scylla, after fitting at Sheerness, touched at Plymouth, and sailed on the 2d August, report says, for the West Indies. The Fly, 10, was commissioned at Devonport on the 25th July; and the Asia, 84, Capt. W. Fisher, has sailed for the Mediterranean. The Savage, 10, Lieut. Loney, was paid off at Plymouth on the 23d, and the Plover packet on the 27th July. The Malabar, 74, Capt. Sir W. A. Montagu, arrived at Plymouth on the 31st July; it is said she is to join Sir Charles Paget's squadron. The court-martial to which we alluded in our last number, was on a corporal of marines, for stabbing an officer of that ship. The court condemned him to suffer death, but the sentence has been commuted to fourteen years' transportation. The Ariadne is to proceed to Alexandria, and the Galatea to the West Indies, to be used as coal depôts.

A boat belonging to the Bonetta, on her way into harbour from Spithead on the morning of the 29th July, was unfortunately capsized, and two men drowned. The master of the Bonetta, the officer in charge of her, and two others, were saved.

Lieut. W. L. Rees, lately commanding the Cockatrice, was summoned before the magistrates at Plymouth on the 26th July, on a charge of having caused the death of John M'Donnell, a boy belonging to that vessel, on the 18th June. The boy it appears had been ordered to the masthead, to be kept from bad company and getting

liquor. He was however unfortunately in a state of intoxication at the time, and fell, which caused his death. It was proved that Lieut. Rees was not aware of this being the case, and he was fully acquitted of the charge.

Sir Edward Codrington has been presented with a piece of plate by the officers who served under him at Navarino, to mark their sense of his exertions in recovering the prize-money due to them.

The ordinary at Portsmouth and Plymouth have been placed in commission. For the officers appointed, see Appointments.

THE FALCON.—Lord Yarborough's ship-yacht, the Falcon, is actually sold, all standing, to a London merchant, for £5,500, and is destined for the South Sea trade. She left Cowes harbour on the 21st August, with a red ensign at her peak, no longer the pride of the Yacht Club, as she passed their vessels at anchor, the same that had so often unfurled their colours in her presence. She departed in silence before hundreds of spectators, who had assembled purposely to take this last farewell of their old commodore.

ROYAL NAVAL SCHOOL.—"Some squeamish people at Greenwich—a place which derives all its consequence from containing an hospital—have set up a loud and terrible howling against the erection of a school there for the education of the sons of naval officers, which it is proposed to establish by subscription. There is no such institution in existence, and we certainly know of no place more suitable than Greenwich; nevertheless, certain of the inhabitants profess to think that a neighbourhood in which, besides the hospital and the naval school, with all its hullabaloos and "jim-nastics," at present boasts of about fifty academies, seminaries, establishments, &c. for young ladies and young gentlemen, and, among them, one of the first private schools in the kingdom—is to be utterly damnified and destroyed by the addition of one more to the number.

"The King, we believe, has been graciously pleased to give the ground for the purpose; and we see that his Grace the Archbishop of Canterbury has subscribed £50 to its funds; Captain Meynell, the member for Lisburne, has subscribed £30; and we are quite sure that many persons, feeling nationally and gratefully towards the navy of England, will follow the liberal examples thus set them; and we still further venture to hope, that no influential persons at Greenwich will support any memorial against the establishment of the school there, inasmuch as a change of site might deprive the institution of the advantages derivable from his Majesty's kindness."

We have quoted the foregoing from the John Bull of the 22d instant, and are glad to find it true, that his Majesty has granted the ground necessary for the erection of the school, which has been temporarily established at Camberwell since the year 1833. We are also happy to find that the East India Company, with the liberality which generally characterizes them, has added £100 to the "Building Fund" of the Royal Naval School: a substantial proof of the opinion entertained by that body of the great importance of this national establishment; and we trust that so noble an example will

not be lost on those who have the power of promoting a design in the success of which the welfare of England, as a great maritime nation, must be materially concerned.

STEAM-NAVIGATION TO INDIA.—We observe that the subject of steam-navigation to India has been again taken up. A deputation lately waited on the Chancellor of the Exchequer, and submitted proposals, that his Majesty's Government, and the East India Company, should contract with them for the conveyance of their mails; the deputation stating that they should be conveyed on terms more advantageous in point of speed, regularity, and economy, by the Red Sea, than they could now be conveyed. £40,000 was demanded from the Government, and £25,000 from the East India Company. The subject was to be taken into consideration.

SURVEY IN THE PACIFIC.—It is stated that the Americans are about to send an expedition, consisting of a frigate, two brigs, and a tender, to explore and survey a part of the Pacific Ocean.

H. M. S. RALEIGH.—"In our last week's 'Journal' we informed our readers of the disaster which had befallen H. M. S. Raleigh; we are now enabled, through the kindness of a friend, to enter more minutely into the description of the effects of the typhoon, which, it may be remembered, overtook the Raleigh in the China seas on the 4th and 5th of August last, and during which she was thrown on her beam-ends and dismasted;—

"On the morning of the 4th, the weather was moderate and cloudy, but there was that chilling appearance in the horizon that presaged no good—bore no friendly aspect to man. Barometer at 29-30, and falling; the ship was soon made snug for a gale by getting studding-sail booms off the yards, jib-boom in, top-gallant masts on deck, and stern boat in on the poop, and shortened sail to fore and main try-sail and fore stay-sail, and battened the hatches down. At 8 P.M. the typhoon commenced, and night and the hurricane came mingled on—

'Deepening each other's gloom.'

The fore stay-sail was blown to ribbons, and the ship thrown over nearly on her beam-ends. At 10, with much difficulty, succeeded in close reefing and setting the fore try-sail, and unbent the main, typhoon increasing and veering all round the compass, with a tremendous cross-sea. At 11, the ship was making most dangerous lee lurches, took in fore try-sail; the first gig got adrift, which was immediately cut away.

"Midnight brought no cheering prospects. The Bar. fell to 29.4. The 5th, typhoon still increasing in violence, (at 3, Bar. 28.30.) the master, apprehensive that the ship would go down, recommended that the masts should he cut away. Captain Quin,

however, preferred parting with the guns and other heavy deck lumber, but stated his determination to hold on till day-light. During the whole of the middle watch, the ship was labouring much, and on one occasion it was observed she rolled 10 rattlins of the main rigging under water. Daylight at length broke, but brought no welcome to the worn-out crew—still it was welcome. The spare tiller was now shipped as a precautionary measure, and worked with the relieving tackles. As the cutter on the larboard quarter began to make the davits complain, and fearing, if it got adrift, it would most likely be blown up the mizen rigging, and increase the danger, an opportunity was taken for cutting her away. It was now resolved to part with 5 of the lee guns, which, with their carriages, shot, studding-sail booms, and other spars, were quickly launched into the deep. At 8 A.M. no alteration appearing, the ship rising with increased difficulty, the desperate remedy of throwing overboard the remainder of the guns became absolutely necessary, and eight more were accordingly launched overboard. At 9-30, the ship took a deep lee lurch; at the same moment she was struck by a heavy weather sea, carrying away both wheel ropes, and she went over literally on her beam-ends, her keel out of water, and her tops out of sight under water. In this awful state she lay about 10 minutes; during this period, most of the officers and crew got upon her broadside, and, with that cool and daring activity which can scarcely be appreciated but by "those whose home is on the deep," they succeeded in cutting the lan-yards of the lower rigging and backstays. At 9-50, the lower masts and bowsprit went by the board, and the Raleigh righted with 6 feet water in her hold. While she lay in the state just described, the pinnace and second gig were cut away from the booms, and they floated out of her while she was keel out. The rigging, &c. was then cut away, and the masts, &c. floated clear of the wreck; during this period two lives were lost, viz., Thomas Jacobs, private marine, and James Sparshot, boy. At 10-15 the only boat left was blown to pieces: the officers and crew had every thing perishable completely spoiled,—books, charts, nautical instruments, with clothes and provisions mixed indiscriminately together; the ballast was upset, and stove some spirit casks; the chain cables were thrown out of the lockers into the carpenter's cabin; in fact, imagination must supply that which defies description. On the 5th, it moderated, and rigged jury masts. On the 11th, she arrived a perfect wreck at Macao. The following letter from the Commander-in-chief will shew the estimation in which the gallant bearing of Captain Quin, the officers, and crew, is held:—

"Winchester, Trincomalee, 29th December, 1835.

"SIR,—I have to acknowledge the receipt yesterday of your letter to me, dated 17th of August last, reporting the circumstances

attending the total dismasting and other serious damage suffered by his Majesty's sloop Raleigh, under your command, on the 4th and 5th of that month, by a typhoon, in the China sea; and I consider it my duty to observe, after a careful perusal of that clear and precise report, that although the loss of life and property, as well as the sufferings of every one on board, are deeply to be deplored, I feel perfectly convinced that, as far as concerns your own conduct, in the very critical situation you were placed, every thing was done that prudence, zeal, and your acknowledged professional skill could accomplish; that your officers and ship's crew, animated, as they must have been, by the laudable example of their commander, and their own right spirit and feelings, behaved with the highest credit to themselves and the service; and that I shall have great satisfaction in bringing the united exertions and exemplary conduct of the captain, officers, and crew of the Raleigh, on that trying occasion, to the favourable notice of the Lords Commissioners of the Admiralty."

"I am, Sir, your humble Servant,

"BLADEN CAPEL,

"Rear Admiral and Commander-in-Chief.

"To Michael Quin, Esquire,
Commander H. M. Sloop Raleigh." *Plymouth Journal.*

WARRANT OFFICERS.—The gunners, boatswains, and carpenters in ordinary, are in future to be borne upon the books of the senior captain's ship, and a list of each class fit for service is to be kept. They are then to be divided into three classes as follows:—

1st class, those who have held warrants for ships of the line.
2nd do. . . . . 4th and 5th rates
3rd do. . . . . 6th rates and sloops.

Pay of the 1st class to be that of warrant officers of 2nd rates, viz.—£91. 5s. when in commission, and £76. 6s. when out of commission.

Pay of 2d class (hereafter to include warrant officers of 6th rates) to be that at present allowed to 4th rates, £71. 5s. 2d. in commission, and £56. 6s. when out of commission.

Pay of 3rd class to be that of warrant officers of 6th rates and sloops £61. 5s. 4d. in commission, and £46. 6s. out of commission.

Tool money to carpenters as heretofore.

Although immediately to be divided into classes, the alteration of pay will not operate until the officer is called into commission service in the class to which he belongs, or until established in the class, which is to be effected by reduction of the present lists to a certain number; but where officers hold a higher rate of pay than is assigned by the new arrangement, they will be allowed to retain it.

Mode of Advancement.—Every death or superannuation from 1st or 2d rates' present pay, and every two deaths or superannuation from 3rd rates' pay, one officer to be advanced from pay of 3rd rates to the pay of a 1st class.

Every death or superannuation from 4th rates' pay, and for every two deaths or two superannuations from 5th rates' pay, one officer from 5th rates' pay to the pay of the 2nd class.

Warrant officers on 6th rates' and sloops' pay to remain on the 3rd class' pay, until advanced to higher class.

Commanders-in-chief, on foreign stations, to retain the power of promoting to death-vacancies under their commands. The lords of the Admiralty also reserve to themselves the power of promoting deserving characters to the 3d class, and of advancing from lower to higher classes meritorious characters. In future, *sea time only* will be admitted to warrant officers, in the calculation of their time for superannuation.

Captain Landers, of the ship Forth, announces that on his voyage from Calcutta to China he discovered a hitherto unknown rock, off Pulo Sapato, distant 22 leagues eastward, in lat. 9 deg. 47 north, long. 110. 19. east, lying in the fair track of ships going down the China sea in the N. E. monsoon. The rock is very small, not larger than a long boat, keel up, and only visible in a heavy sea.

The crew of the Griffon, on paying off of that vessel, testified their gratitude to Mr. Alexander Bryson, assistant surgeon, for his attention to them when in a state of sickness, in the river Gambia, by presenting him with a full-dress coat, epaulette, and strap, cocked hat, and sword; the latter with an appropriate inscription.

We have much pleasure in quoting the following from the *Hants. Telegraph*:—"On Wednesday the 3rd inst. his Majesty's ship Comus, commander Hamilton, came into Hamoaze. We scarcely remember having seen a more beautiful sight of a British man-of-war under way. The ship sailed in under her top-sails and courses; the top-gallant and royal yards being manned, and the sailors dressed in white straw hats, and duck trowsers and shoes, had a very novel and pleasing effect. The Hoe and Mount Wise were crowded with spectators, amongst whom were a number of old officers, expressing their admiration at the general appearance of the Comus, and the excellent discipline of her ship's company. She had been anchored five days in the Sound, waiting for orders, during which time she was visited daily by numerous parties of ladies and gentlemen, from whom the captain received the most flattering compliments on the superior arrangements of all on board. On her passing Mount Wise, Lord Amelius Beauclerk and other naval officers remarked, "What a beautiful specimen of a man-of-war." On Thursday his lordship, as port

admiral, accompanied by his nephews, inspected the Comus, when the yards were manned; and his lordship's reception on board was conducted in a manner which exhibited the perfect discipline of the crew. After the men had gone through the gun exercise, and a number of manœuvres on the yards and masts, his lordship mustered the crew, and expressed his entire approbation in the following words:—"Captain Hamilton, I have not for many a year seen a ship more efficient, or in higher order and discipline, than yours, a circumstance which reflects the greatest credit on you and the officers, who, as well as the crew, appear to have their duty and business at their fingers' end; and I shall take care (as is my duty) to represent the high state of discipline to my lords commissioners of the Admiralty; and I have no doubt that every person will receive from the Admiralty that encouragement which is so highly merited, and which will ever be the greatest advantage to our service and country."—The Comus has been nearly four years in commission, on the West India station, during which she lay at Jamaica two sickly seasons, when not a man was lost from the effects of that unhealthy climate. No sickness whatever has prevailed on board, and the crew have a most healthy appearance (as has been justly remarked by the numerous visitors on board;) in fact, they look the picture of real happiness. This must be highly creditable to her commander, and it is to be hoped he will receive the due reward from its proper quarter, more especially when the fact is known that he has had no lieutenant since February, and the duties of the ship have devolved on him, and acting master, and one mate, with no more officers to assist in preserving discipline; and yet so very perfect is she in this respect, that it must prove the commander to be a high disciplinarian, and as such deserving that high reward from its proper quarter which is ever ready for the persevering and indefatigable in our service.

The coadjutors of Dean, the enterprising diver, now in Ireland, have lately recovered from the wreck of the Royal George, at Spithead, an iron 42-pounder gun; and between the buoy of this wreck and that of the Edgar, two extremely handsome brass pieces —one a 42, the other an 18-pounder; and an iron gun, with part of another of similar construction. The two latter are objects of great curiosity, and must be of great age; the entire one is 14 feet long. They are constructed of thin iron bars; both were loaded with a stone shot, about the size of a 32-pounder. The entire one rests on a wooden stock, the half of its circumference being embedded therein its whole length, and it had evidently moved on a slide. The two brass guns were cast in the reign of Henry the Eighth—the largest of them weighed 4,377lbs. was decorated with the royal arms, and with the rose and fleur-de-Lis alternately. The smaller one weighing 2,622lbs., was deco-

rated with the rose only, having under it the words (the only that can be deciphered,) "Colveryn Bastard." These pieces, with the iron-hooped one, were discovered on the same spot, resting on some wreck, which was so completely buried in the sand, that the diver could find nothing to which he could affix a rope.

A splendid four-oared boat has been built at the command of his Majesty, as a present to the Prince of Orange. She is 36 feet in length, entirely of oak, and is fitted up with considerable neatness, every thing that would tend to give her a gaudy appearance having been avoided. The cushions are green, with orange-coloured tufts, trimmed with gold lace.

THE SOUND.—A despatch has been received from his Majesty's consul at Elsinore, stating that the Danish government has stationed the Wilhelmina steam-vessel, of 96-horse power, in Elsinore roads, for the purpose of towing through the Sound such vessels bound to Baltic ports as may be detained at the entrance of the Sound by contrary winds. His Majesty's consul has, at the same time, transmitted a translation of the provisional tariff of the expense attending the towage of vessels through the Sound by the Wilhelmina steam-vessel:—"For a vessel not exceeding 50 lasts burden, 12 rix bank dollars, or £1. 7s. per hour; not exceeding 75 lasts burden, 13 rix bank dollars, or £1. 9s. 3d. per hour; not exceeding 100 or 125 lasts burden, 14 rix bank dollars, or £1. 11s. 6d. per hour; not exceeding 150, 175, or 200 lasts burden, 15 rix bank dollars, or £1. 13s. 9d. per hour; not exceeding 225, 250, 275, or 300 lasts burden, 16 rix bank dollars, or £1. 16s. per hour.—Explanations: It must be remarked, with regard to the application of the above tariffs:—1. That ships under 50 lasts pay for 50 lasts, the same as all those below 63 lasts; but exceeding 63 lasts they are charged for 75 lasts: and thus in the same ratio for ships of a greater burden, according to the difference of rates stated in the tariffs. 2. That the charge for ships exceeding 300 lasts is made progressively, according to the propositions laid down in the tariff. 3. That towage will not take place if more than 3 hours are required for performing the distance of a Danish mile, except in cases of distress, when a special agreement must be made for the assistance to be rendered. Remark—The last is reckoned at 4000lbs. or two tons. The Danish money has been reduced to 2s. 3d. per rix bank dollar.—FRANCIS C. MAGGREGOR, Consul.—*Elsinore, June* 1, 1836."

ADMIRAL MACKAU.—The Newburyport Herald contains a letter from Robert F. Chase, Esq., U.S. Consul at Martinque. It is dated St. Pierres, Mart. March 18, and states that Baron

De Mackau arrived on the 6th, and comes out as governor of the Island and the commander in chief of the French naval forces in those seas. The Baron arrived in the ship Jupiter, the frigate Terpsichore in company. On the 5th, the line-of-battle ship Algiers and frigate L'Artemise arrived. The squadron now on that station consists of two ships of the line, four frigates, two sloops of war, and two gun-brigs.

The keel of a steam vessel has just been laid down at Liverpool, 225 feet in length; she is to have two engines of 200-horse power each, and will be 1,200 tons burden. There are four of the same class to be built for one of the newly established Colonial Steam Packet Companies, to ply between this country and North America.

The ship Pennsylvania, which arrived at Liverpool a few days ago from the United States, on her first voyage, is an object of great attraction, and is daily visited by a great number of persons. She is considered to be one of the finest vessels that ever sailed from America, and there appears to have been no exertion or expense spared, to make her accommodations complete in every department. Her tonnage is 810 tons, 80 more than was carried by any other American ship, and on the voyage her average sailing was about 270 miles per day.

MOUNT'S BAY BREAKWATER.—Their Royal Highnesses the Duchess of Kent and Princess Victoria have been graciously pleased to signify, through Sir John Conroy, to Sir Charles Lemon, Bart., M.P., Mr. Pendarves, M.P., Mr. and Carteret J. W. Ellis, the Deputation for the Breakwater in Mount's Bay, their assent to the request that they would patronise this national undertaking. The assent was conveyed in the following letter:—

"Kensington Palace, July 27. Sir—I have had the honour to lay before the Duchess of Kent the memorial you forwarded to me relative to a Breakwater in Mount's Bay, and which was intrusted to you, Sir Charles Lemon, and Mr. Pendarves, having received upwards of five thousand signatures, with a view that the prayer thereof be submitted to their Royal Highnesses. I have now her Royal Highnesses's command to signify to you the satisfaction she feels in allowing her name, and that of her Royal Highness the Princess Victoria, to be associated with an undertaking so national, and calculated to afford such important results as must accrue from having a safe harbour so near the Land's End.

"I have the honour to remain, sir, your obedient humble servant,

"JOHN CONROY."

"Carteret J. W. Ellis, Esq."

Mr. Brown, Master Attendant at Woolwich Dock-yard, has been superannuated upon £380 per ann., and is succeeded by Mr. Teignmouth; Mr. Louthean succeeds Mr. Payne (superannuated) as First Master Attendant at Chatham. Mr. Walker is re-

appointed to the situation as second Master Attendant at Plymouth, with the increased pay. Mr. Gaze, first Master Attendant at Sheerness, has received a new appointment to that office under the new regulation, but retaining his former salary—with the understanding that his period of service will be only calculated up to the present time for superannuation.

The additional half-pay to Pursers of one shilling per diem, which commenced on the 1st July, and will be granted to such only as declare themselves fit and willing for active employ. To such officers as fail to satisfy the Admiralty of their inability to continue active service, either by infirmity or former service, the increase will not be granted; and each of such cases must undergo a fresh medical examination.

His Majesty has subscribed £100 for a new church in Newfoundland, and Government has also given £100. £440 are still required for this most desirable object.

The Lord Lieutenant of Ireland has conferred the honour of Knighthood on Commander H. E. Atkinson (of the Coast Guard), as a mark of respect for his attention on the occasion of steering his Excellency and Lady, in a six-oared barge, up and down the Blackwater river (on their visit to Youghall), one of the most intricate and dangerous rivers in Ireland.

Ship Launch.—A splendid steam-vessel, named the Countess of Lonsdale, of 700 tons burden, and 240-horse power, was launched on Saturday at the yard of Messrs. Wigram and Green, at Blackwall, built for the General Steam Navigation Company. The ceremony of naming her was performed by Lady Eleanor Lowther, who with a numerous and fashionable party attended the launch. She went off the stocks or, as a facetious American writer has said, "the aqueous lifting of this future floating cradle of humanity into her element took place," at three o'clock precisely in beautiful style. After the launch, the visiters inspected another steam-vessel of the largest class, also building for the General Steam Navigation Company at the same yard, which will be prepared to be launched on the 16th of this month. This vessel, of 800 tons burden, intended to be named the Clarence, excited by her appearance, as well as the vessel now launched, general admiration. A ship, precisely on the same model and size as the Countess of Lonsdale, is also in course of construction in the same yard for this company.

Parliamentary Intelligence.

Half-Pay Officers.—Sir Edward Codrington rose, pursuant to a notice long standing upon the order paper, to move for a return "of all officers, of whatever rank, who have been deprived of their half-pay without their consent, or the investigation of a court-martial, from the year 1790 up to the present period, with

the alleged reasons for such deprivation; also a return of any persons whose half-pay has been restored to them subsequently to to such deprivation, with the alleged reasons for such restoration." In support of the motion the gallant admiral mentioned several instances of great hardship, in which officers of long service had been deprived of their half-pay without any alleged cause, or at least without any proper inquiry.

On the question being put,

Sir F. Trench stated, that he objected to the motion, both as a soldier and a member of that house. Until another commonwealth were established in this country, he hoped never to see the discipline of the army subject to parliamentary control.

Mr. C. Wood, was decidedly opposed to such a motion, as it was calculated to injure the service materially. The government had undeniably the power to dismiss officers on full pay by calling in the aid a court-martial. Officers on half-pay could not be compelled to undergo the latter ordeal, but the power of dismissal remained the same. He would not consent to parade a list of all the cases and causes of dismissal for the last forty-six years; but he had no hesitation in stating that, as far as he knew, no officer on half-pay was ever dismissed except for conduct unbecoming a gentleman and a soldier. If the honourable and gallant member thought that any particular individual in the list of half-pay officers was really aggrieved, let him bring the case before the house, and he (Mr. Wood) would undertake to give him every information the nature of the case admitted.—(Hear.)

Sir S. Whalley thought that the honourable and gallant officer would have done better if he had confined his motion to specific cases, especially as the hon. gentleman (the Secretary for the Admiralty) had shown no disposition to deny proper and constitutional inquiry. He hoped, therefore, the honourable member would not press his motion.

Mr. Hume supported the motion, and deprecated the injustice done to honourable and gallant officers under the present system.

Sir C. B. Verge objected to any attempt to place the army and navy more under the control of the house than at present. He believed that cases of injustices which occurred under the present system, must be extremely rare.

Admiral Adam concurred with the Secretary of the Admiralty.

Sir T. Troubridge objected to the motion, as calculated to be injurious to the officers whom the gallant admiral wished to serve. If any individual case of hardship occurred, it was competent to any hon. member to bring it forward.

Admiral Codrington, would withdraw the motion, with the intention of bringing it forward in a more confined shape, viz., merely a return of those cases wherein the parties themselves were anxious to have it made.

Mr. C. Wood objected to the withdrawal of the motion, which was negatived accordingly.

SALVAGE.—Mr. Robinson said he had an important petition to present, but he was afraid that it came within the rule of the house as regarded money petitions. It was a petition from the underwriters and owners of specie saved in his Majesty's ship Thetis. The petitioners had been charged 13,000*l.* by the Admiralty for wages and provisions for the officers and seamen, and the wear and tear of his Majesty's ships engaged in that service, and they prayed that the said sum should be restored to them, or that the house would make such inquiry into the subject as it should deem fit.

The speaker said that this petition prayed distinctly for money, and that it could not be received without the consent of government.

Mr. Robinson hoped the secretary to the Admiralty would not refuse his consent.

Mr. C. Wood said he would not refuse his assent as far as the Admiralty was concerned, but on the part of the government he would not consent to such a precedent.

Lord J. Russell, on being also applied to by the hon. member, refused his assent.

Mr. Robinson said, that under such circumstances, he should endeavour to make some arrangement with the chancellor of the Exchequer, and that if he did not succeed, he would bring the subject before the house next session.

NAVY LIST.—Sir. E. Codrington presented a petition with reference to the motion of which he had given notice from Mr. Ronayne Milner, who complained that his name had been erased from the navy list, and praying that means should be afforded him of proving the injustice of the punishment inflicted upon him. The hon. and gallant admiral presented petitions to the same effect from Lieutenants Lee and Bryant.

Mr. C. Wood was happy to inform the hon. and gallant admiral, and the house, that circumstances had been brought to the knowledge of the Admiralty, which satisfied them that the charges made against Lieut. Bryant were wholly without foundation. As a matter of course, Mr. Bryant's name would be restored to the list.—(Hear.)

Sir E. Codrington said that this circumstance showed the propriety of the parties being brought face to face.—(Hear, hear.)

TREASURER OF THE NAVY.—Sir James Graham, before the house went into committee of supply, wished to ask a question of the government. Towards the end of last session, certain resolutions had been come to for the purpose of consolidating the office of treasurer of the navy, paymaster of the army, and master of the ordnance. They had now arrived at the last day of supply,

and he had seen the army and navy estimates, in which all provisions for these offices was omitted; and what he wished, therefore, to ask was, whether those regulations were prepared, whether any estimate was to be submitted to the house, whether the money had been paid on the 5th of July, and, if paid, out of what fund?

Mr. Baring, who was very indistinctly heard, said that the resolutions to which the right hon. baronet referred, required very great consideration; but he believed they were in such a state of preparation as would enable them to be shortly submitted to the house. With respect to the payment of the salaries it was quite true that, in accordance with the resolutions, they had been suspended; but as, under the circumstances, these resolutions had not been carried into effect, the proper course would be to submit a separate vote for the payment of those salaries.

Sir J. Graham thought it would be very irregular to pay money without a regular vote of that house; at the same time he must say that the postponement of these salaries would be a monstrous proceeding when it was no fault of the parties. He regretted that these regulations had not been laid upon the table, and, he would add, that he should be sorry to see the office of treasurer of the navy abolished, as it had been, in his opinion, an extremely well-conducted one.

THE EUPHRATES EXPEDITION.

THE following distressing intelligence of the loss of the Tigris was received too late for our last number. Painful as it is to contemplate the fate of our unfortunate countrymen, whose untimely end all must deplore, the prospect of the ultimate success of the expedition appears to be better than ever, and the sad catastrophe which has attended it has evidently nothing to do with the determination of the grand question in view:—

India Board, July 28, 1836.

A despatch has been received at this office from Col. Chesney, R.A., in command of the Euphrates expedition, dated, Euphrates steamer, Anah, May 28, 1836, of which the following, with its inclosure, are copies;—

"Euphrates Steamer, Annah, May 28, 1836.

"Sir,—It is with feelings of the deepest regret that I do myself the honour of informing you, that the Tigris steamer was totally lost during a hurricane of indescribable violence, which, after the short struggle of about eight minutes, sent a fine vessel to the bottom in five* fathoms water, and deprived his Majesty of fifteen valuable men, with five natives in addition.

* The last depth sounded; and we have since found three and a half fathoms on one side of the spot, and five on the other.

"My reports up to the 17th inst. at Deir, will have informed you that all was going on as successfully as the most sanguine could possibly desire. We found the Arabs well disposed, and quite ready to form depôts for us of wood, charcoal, bitumen, and lignite coal; all met with in abundance, and tried with complete success. In addition to these marked advantages, the survey has been carried five hundred and nine miles down the Great River, which seemed in all respects favourable; in short, all was continued prosperity up to the afternoon of the 21st inst., when it pleased God to send the calamitous event of which it is now my duty to give a feeble sketch.

"A little after one P.M. on that melancholy day, the flat boats being a little a-head, and the Tigris leading the Euphrates, a storm appeared, bringing with it, high in the air, clouds of sand from the north-west quarter. At this moment we were passing over the rocks of Is Geria, (deeply covered,) and immediately after we made a signal for the Euphrates to choose a berth, and make fast, which was done more as a matter of precaution, on account of the difficulty of seeing our way through the sand, than from apprehension that the squall would be so terrific. The Tigris was immediately directed towards the bank, against which she struck without injury, but with so much violence as to recoil a distance of about eight yards, leaving two men on the bank, who had jumped out to make fast. The wind then suddenly veered round, drove her bow off, and thus rendered it quite impossible to secure the vessel to the bank, along which she was blown rapidly by the heavy gusts, her head falling off into the stream as she passed close by the Euphrates, which vessel had been backed opportunely to avoid the concussion. The engines were working at full power, and every endeavour made to turn the vessel's bow to the bank. One anchor was let go, but the heel of the vessel made it impossible to get the other out, and she was then nearly broad-side to the wind, with the engines almost powerless, and the waves, rising to four or five feet, forcing their way in at the windows. Lieut. Cockburn, the Messrs. Staunton, and some of the men, made ineffectual attempts to keep out the water, for the fate of the vessel was already decided; and the fore-part of the deck being under water, Lieut. Lynch came to report that the Tigris was sinking; and the word was immediately passed for all to save themselves. At this very instant a momentary gleam of light faintly shewed the bank at the apparent distance of eight or ten yards, and, as there seemed every probability that the stern would touch it before she went down, Lieut. Lynch encouraged the people to remain steady until they reached the land. All were on deck at this critical moment, some clinging to the ropes of the awning, the paddle-boards, and funnel; but the majority were close to the tiller, and all behaving with the most exemplary obedience, until

the vessel went down all at once, and probably within half a minute after we had seen the bank for an instant.

"Lieut. Lynch, who was at my elbow, dived out underneath the starboard ridge rope, at the moment when there was about four feet water on the deck, and I had the good fortune to get clear in the same way, through the larboard side, and also to take a direction which brought me to the land, without having seen any thing whatever to guide me through darkness worse than that of night. When it cleared a little, I found around me Lieut. Lynch and Mr. Eden, (both greatly exhausted,) Mr. Thompson, the Messrs. Staunton, and several of the men. The hurricane was already abating rapidly, and as the distance from the vessel to the shore was very short, we indulged the hope that the rest of our brave companions had reached the bank lower down. For an instant, I saw the keel of the Tigris uppermost, near the stern. She went down bow foremost, and, having struck the bottom in that position, she probably turned round on the bow as a pivot, and thus shewed part of her keel for an instant at the other extremity; but her paddle-beams, floats, and parts of the sides, were already broken up, and actually floated ashore, so speedy and terrific had been the work of destruction. From the moment of striking the bank until the Tigris went down, it scarcely exceeded eight minutes, whilst the operation of sinking itself did not consume more than three; indeed the gale was so very violent, that I doubt whether the most powerful vessel, such as a frigate, could have resisted it, unless she were already secured to the bank; and for this, there was in our case little or no time, as it was barely possible, in the position of our consort, to make fast and save the vessel.

"I had little, or rather no hope, that the Euphrates could have escaped, but the intrepid skill of Lieut. Cleveland and Mr. Charlwood, enabled them to get out two anchors in the very nick of time; and by the united means of two hawsers, and the engines working at full power, the vessel maintained her position at the bank until the storm abated, as the enclosed letter (26th May) from Captain Estcourt will explain more fully; and as it required all the powers of a fifty-horse engine in the case of the Euphrates, to keep her hawsers from snapping, I infer, that the twenty horses of the Tigris would not have been sufficient to enable her to keep the position at the bank, even if the officers had succeeded in securing her along side of it.

"Lieut. Lynch and Mr. Eden continued cool and collected until the last moment; nor were any efforts wanting that skill or presence of mind could suggest to save the vessel in the first instance, and the lives in the second, when the former had failed; nor could any thing be more exemplary than their conduct, and that of all on board; scarcely a word was spoken, not a murmur was heard, and death was met with that exemplary degree of intrepidity and

resignation which have been displayed by every individual throughout the arduous and trying service in which we have been engaged since January, 1835.

"Having already given a faithful account of the short but eventful period of about twelve minutes, occupied by the beginning, the progress, and termination of the hurricane, I will conclude the painful part of my task by referring you to the inclosed return of the names of the valuable men who have been lost to his Majesty and their country for ever. Very different was the result, when a similar but less violent gale sent my little vessel to the bottom of this river in 1831, for I had not then the misery of deploring the loss of a single life, and my little schooner was afloat and continuing the descent in less than twelve hours; whereas all our efforts as yet have failed even to find the remains of the vessel; not a ripple, or the slightest trace of the unfortunate Tigris, marks the spot where she went down; but our search has not yet terminated, and if she should be found without having been dashed to pieces, I shall take measures to recover her, with the assistance of the diving-bell, and other means, especially as there are many valuable instruments on board, in addition to the hull and machinery, and particularly as the Arabs here are all well disposed.

"I am happy to say that the survivors of the expedition remain as much unshaken as ever in their confidence regarding the final success of this undertaking, as well as the manifest advantages, facilities, and cheapness of this line of communication. The hurricane has been, it is true, a most trying and calamitous event, but I believe it is regarded by all, even at this early day, as having no more to do with the navigation of the Euphrates, in other respects, than the loss of a packet in the Irish Channel, which might retard, but could not put an end to the intercourse between England and Ireland.

"We are therefore continuing our descent and survey to Bussorah, hoping not only to bring up the mail from India within the specified time, but also, if it pleases God to spare us, to demonstrate the speed, economy, and commercial advantages of the river Euphrates, provided the decision of ministers shall be, in the true spirit of Englishmen, to give it a fair trial, rather than abandon the original purpose in consequence of an unforeseen, and, as it proved, an unavoidable calamity.

"I have the honour to be, &c.

"F. R. Chesney,

"Colonel commanding the expedition.

"The Rt. Hon. Sir J. Cam Hobhouse, Bart.,
President of the Board of Control."

The letter of Captain Estcourt, and the returns of the officers and men lost:—

Annah, on the Euphrates, May 29, 1836.

The lamentable event which has befallen the Euphrates expedition, in the midst of its prosperity, renders it desirable that the truth should be as widely spread as possible, that, melancholy as the facts are, reports should not increase their sadness. The expedition, with the two vessels, the Euphrates and Tigris, was descending the river most prosperously. Fuel had become, from Beles, most abundant, consisting of wood, a bituminous coal, and charcoal. The state of the river was so favourable, that the Tigris, being the smallest vessel, was in the habit of leading, and, having a native pilot on board, there was no difficulty of finding the deep channel. The Arabs were friendly; they engaged to provide depôts of fuel, and entreated our protection.

On Saturday, 21st instant, we had brought up at midnight to a bank for fuel, and after the people had dined we cast off, meaning to steam to Annah, then distant about eighty miles. Scarcely, however, had we commenced our voyage, when a cloud of dust was seen to rise high into the air, on the right bank, threatening a squall of no ordinary violence. Preparations were immediately made to meet it, by furling the awnings, &c. Having passed over a reef of rocks, at this season far under the water, the signal was made from the Tigris, leading as usual, and having Col. Chesney on board, to choose a berth and make fast. Scarcely had we answered when the squall began. The Tigris was rounding to make fast, the Euphrates following. As we neared the left bank, I saw that the Tigris had failed to bring up; her head was falling outwards. The Euphrates was now obliged to back her paddles, to give room; an operation full of danger, lest she should be unable to gather way upon herself again against the current, and the violence of the gale. However, her power is great, and, again working the engines with all force, she came to the bank with some violence; but by the skilful management of Lieut. Cleveland, and the activity of Mr. Charlewood, and a most willing crew, a hawser and small anchor were got on shore; then a chain-cable and larger anchor; then a second chain-cable, and another anchor. All the time the paddles were kept working with their utmost power. Still, however, such was the violence of the hurricane, that the vessel drove, but fortunately it did not last above fifteen minutes, at the end of which time our danger was over and the vessel was safe.

But what had become of our consort? I had seen her cross our bows, driving down the stream, and unable to bring her head to the gale. The thick dust which then succeeded, excluded her from my sight; and from that moment I have never seen her since. In the midst of the hurricane, Mr. Fitzjames reported to me that he had seen her upset to leeward about three-quarters of a mile, and instantly after that she went down. A party was sent off along shore, to render what assistance they could, and another went by

boat. Some of the officers, namely, Col. Chesney, Lieut. Lynch, Mr. Eden, Dr. Staunton, Mr. Staunton, and Mr. Thompson, came walking towards us, much exhausted. They had swam and dived ashore. Some seamen and natives also followed them; but fifteen Europeans, of whom three were officers, namely, Lieut. Cockburn, Royal Artillery; Mr. Lynch, a passenger, and brother to Lieut. Lynch; and Mr. Sarded, an interpreter; were lost, besides five natives.

The hull of the vessel has never been found, notwithstanding all our efforts. She filled, and turned bottom up. All sounding has been in vain. Some bodies have floated even so low down as this place, and have been buried.

We have since continued our voyage thus far with our former success. The officers of the Tigris saved will return to England; but the expedition continues its course with the fairest prospects.

I am, &c., J. B. BUCKNALL ESTCOURT,
Captain 43d Light Infantry.

On board the Euphrates steamer, off Annah, May 26.

Return of officers and men belonging to the Euphrates expedition, who were lost on the river Euphrates, near Wordie,* by the sinking of the Tigris steamer, during a violent hurricane on the 21st instant.

Lieut. R. B. Lynch, 26th Regt. Bengal N. I., passenger; Ensoff Sardad, interpreter; John Struthers, engineer.

Royal Artillery—Lieut. Robert Cockburn; Acting Serj. R. Clark; T. Jones, gunner; R. Turner, do.; J. Moore, do.; J. Hay, do. Sappers and Miners—A. M'Donald, private. Seamen—B. Gibson, J. Hunter, T. Booth, T. Batty, G. Liddel. Natives—Aboo, Wasoo, Jacoob, Johir, Manneh, Pedros.

H. BLOSSE LYNCH, Lieut.

Extract of a Letter.—The Tigris on 21st May was near Nuha, in the Euphrates, when a violent tempest came on, and the atmosphere was clouded almost to darkness. The few efforts time would allow to put the vessel in condition to weather the gale were unavailing, and the steamer in a few minutes foundered. The commander and Lieut. Lynch (relatives) went down together, but in their struggles for life while in the water, the commander states, in his letter to his friends received yesterday, he shook the Lieutenant off, and was saved. He adds, that on recovering himself, he found that twenty of his brave crew had perished. A committee of officers had, as usual, sat to investigate the matter, and they had

* The reader will find at p. 205 of our last volume (No. 38) a map shewing the course of the Euphrates, with which we may trace the progress of the expedition. The "Wordie" stated by Lieut. Lynch is no doubt the "El Wardia" of the map below "Is Geria" rocks alluded to by Colonel Chesney.

reported in favour of the skill, intrepidity, and judgment of the commander, under the trying circumstances in which he had been placed.

The following very affecting extract is from a letter written by Lieut. Lynch, the commander of the Tigris steamer:—

"Euphrates St., off Town of Anah, in the River Euphrates, May 27, 1836.

"Poor Robert is no more! He went down by my side on the 21st of this month, in a dreadful storm that drove my vessel to the bottom in a few minutes, as we were running along, proud in leading the way over the unknown stream, and confident in our vessel and the band around us. All was blighted in a few minutes; even yet I can only look back with stupor to the dreadful event. Little did we think death was hovering so near. I saw the storm coming, and prepared for it; but preparations were of no avail; it dashed us before it, amidst a cloud of sand dark as midnight, and cleft to fragments, by the racking lightning, and echoing with the thunder that appeared to crash all around us, man's puny hand was powerless, the blast was irresistible, and the darkness passed away to leave a sinking wreck. We sunk together; thrice was I dragged down by some sinking sailor, and when I rose unencumbered from the last deadly struggle, nearly exhausted, I looked around in vain for Robert. A few minutes dashed me, clinging to the passing fragments, to the bank, where I climbed, not to find him; oh! we had parted for ever—he was never seen more. I cannot go on. Suffice it to say, though I have lost all, the storm could not leave any stain on our name. The committee of officers appointed as usual in such circumstances gave me, with eagerness, in their report to his Majesty's government, full credit for judgment to meet, and intrepidity to face danger, and avert it, as became an officer; and those who remain to mourn for their lost comrades are as eager to soothe my loss, by testifying their belief that they were led through the danger by an officer whom the appearance of death did not divert from his efforts to save them. Twenty of my fine crew went down with Robert; few comparatively were saved, not a third of the whole crew, which was above thirty-five in all; and when I was dashed to the shore, I had hardly breath to return thanks for my safety to that Power by whose hand alone I could have been saved. Adieu."

SOLID CHANNELS FOR SHIPS.

To the Editor of the Nautical Magazine.

SIR,—Observing in a recent number of your work allusion made to the Star packet, your readers probably may not be aware that she was fitted with the solid channels invented by me, and for

which I have a patent. I forward you herewith the copy of my letter to the Admiralty, in which you will perceive it stated, on the authority of the master and the carpenter of the Star, that her safety is attributed to the facility with which the solid channel allowed of the rigging being cut away in the very extremity of her dangerous condition. In a future number, I shall request permission to be allowed to describe the great advantages of this invention in the pages of the NAUTICAL, and to point out the benefit which ships may derive from its adoption, accompanied by certificates of its efficiency from competent judges.

I am, Sir, &c.

J. COUCH, Capt. Royal Navy.

SABLE ISLAND.—The following is extracted from the Quebec Gazette, and we take the opportunity of wishing Captain Darby that success which his meritorious exertions deserve. Such an establishment should meet with every possible encouragement from every nation whose flag is seen on the Atlantic.

Halifax, April 13th.—A friend put into our hands a few days since a 'new work,' and quite 'an odd volume,' being no less than THE LOG kept by Capt. Darby, the Superintendant of Sable Island. As the public have of late been terribly bothered with long yarns from all sorts of Logs, we shall only make from that before us one extract. It is the conclusion of the volume, the summing up of the year's proceedings, which we doubt not will be read by every man who pays towards the support of the benevolent establishment under Captain Darby's charge, with genuine satisfaction:—

"Thus ends the year 1835, and with us it has been a year of great labour and fatigue; our work has heaped upon us faster than we could clear it away. We have saved and shipped to Halifax property to an immense amount. The materials of five vessels, and the cargoes of two, have been mostly landed on the island by the establishment. Several tons of property have been carted over the island, some fourteen miles, and all re-shipped; and there is now on the island between two and three thousand pounds worth of property ready for shipping, besides as much more that was saved on the island, and taken to New York. One hundred and nine persons have been saved, and fed, some of them six weeks, and some of them three months and a half. An immense quantity of passengers' baggage has been saved, and shipped with them. Fuel has been collected in large quantities in three different parts of the island, for the mutual comfort of the inhabitants, and the unfortunate persons that may be thrown upon it. Food has been made and secured for upwards of sixty head of cattle, and eight

or ten horses; considerable quantities of vegetables have been raised, to the amount of 300 bushels. One large out-house has been built, and one small one; also, one large new addition. Two boats have been built, and several frequently repaired; one pair of new cart-wheels has been made, and three pair have been more than half made new, with new tires and new carts. Our vessel has been four times to the Continent, and has required a great deal of attention and care while here; one man was away from us eight or ten months. We have now 4 or 5,000 new shingles made, and lumber sawed to build another boat. One man exclusively attends the cattle, sheep, hogs, &c. We have six good pigs to kill. Some of us are sometimes sick; we generally work until ten o'clock at night; we are all desirous to make something extra by shingle making and boat building, which, if we can do, and not be thought unprofitable servants, I for one shall think myself fortunate.

"Hoping God will bless his Excellency the Lieutenant Governor of the province, the members of his Majesty's council, the gentlemen of the House of Assembly, the commissioners for this establishment, and all his Majesty's faithful and loyal subjects, I, their unworthy servant, as in duty bound, will ever pray.

(Signed) "JOSEPH DARBY."

RECORDS OF WRECKS.

THE FRANCIS SPAIGHT.—In our last we recorded the melancholy loss of the Francis Spaight, a timber ship from St. John's, and we find from the Times (the source from whence our information was derived) that this ill-fated ship drifted to the island of Fuerta Ventura, one of the Canaries, and was towed into Puerto Cabras by three fishing-boats about the latter end of May, the vessel having been abandoned in December. It appears that neither anchor nor cable were found on board; that she was a new vessel, this having been her first voyage. Perhaps the occasion of this wreck may be considered worthy the attention of the Shipwreck Committee.

THE HENRY OF CORK.—The following extract of a letter which we have received, although happily it does not contain the account of a wreck, so fully illustrates the working of the present system, that we consider it right to publish it. Our correspondent asks, "Is there no naval officer superintending emigrant ships at Cork, or is it 'justice to Ireland,' to leave the Irish at full liberty to be drowned in emigrant ships at pleasure?" It runs thus:—

"Ship Andromeda, bound to New York, 8th June, 1836.

"We had yesterday a most remarkable instance of the interposition of Divine Providence, making us the means of rescuing seventy individuals from a lingering death. It had been calm all

the morning till noon, when a breeze sprung up from the westward, which threw us out of our course; and about 2 o'clock P.M. we fell in with a brig which sent a boat on board us. She proved to be the Henry of Cork, bound to St. John's, New Brunswick, with sixty-four passengers, emigrants. She had been out fifty-three days, and was in great distress for provisions, having been reduced for the last six days to half a biscuit a day, many of the passengers not having even that. We supplied her with two casks of beef and pork, 5 cwt. of bread, tea, spirits, &c.; besides many of our passengers giving what they could spare out of their stock.

"The vessel herself appeared to be a wretched brig of 130 tons, ill found in every thing, and leaky; and the competency of the master to his charge may be judged of, when I tell you that he was *eight hundred miles* by his reckoning to the westward of his actual situation. The agents and owners were Messrs. Larry, Burke, and King, of Cove: and as such culpable neglect and barbarity should not be concealed, I think you would do well to make this account public. The place where we fell in with the brig was in latitude 40° 0′ N., longitude 51° 20′ W. Is it not disgraceful to the persons connected with this ship, that they should have allowed so many individuals to have embarked under so inefficient a captain?"

Here is another glaring instance of the manner in which British ships, under the present system, are liable to be navigated; and it is more than probable that, but for the providential meeting of the Andromeda, we should have had a tale to have told similar to that of the Francis Spaight, the horrors of it only aggravated by numbers. We sincerely hope that such instances as these will not escape the observation of the Shipwreck Committee. We must reserve further "records of wrecks" for our next.

MEMOIRE ON THE CURRENTS OF THE BRITISH CHANNEL, ST. GEORGE'S CHANNEL, and the GERMAN OCEAN, followed by Documents relative to the Navigation of *La Deroute* and *le Raz Blanchart*, and to the Currents which occur in those two passages. Published under the administration of M. L'Amiral Duperré, Secretary of State for the Department of the Marine and of the Colonies, by P. MONNIER, Ingenieur Hydrographe de le Marine, and Chevalier of the Legion of Honour. Paris. 1835.

In giving some account of this *memoire*, we may in the first place refer to the report upon it made to the Royal Academy of Sciences by M. M. Arago and Savary.

"The periodical currents of the channel, and the neighbouring seas," the reporters observe, "are for the most part very ill known. The elevation and depression of the waters, the most striking and simple part of the phenomenon, having almost exclusively caught the attention of observers, many persons still

suppose that the stream runs in the same direction as long as the sea continues to rise, and that the stream turns as soon as the sea begins to fall. But this is by no means the case. In the first hydrographical observations of M. Beautems Beaupré, this important fact is distinctly stated, that, between Calais and Ostend, at a certain distance from the coast, the stream of flood continues to run two or three hours after high-water, although the surface has by that time fallen considerably. This state of things, when the moment of the *turn of the stream* happens at a different time from the moment of *high-water*, is the general case; the coincidence of these two moments happens only as the exception, or rather the stream does not necessarily turn at once in the opposite direction, but assumes different directions and velocities in the course of about twelve hours, just as the surface rises and falls in the same period. Thus, it is observed between Cape la Hague and Alderney, the stream veers round the compass in twelve hours.

"Mr. Whewell, in a work known and justly esteemed, and M. Monnier following, in the memoir now under our notice, the considerations of this English author, both attempt to account for these apparently complicated changes in the direction of the currents, by means of the form of the coasts."

The reporters add, that M. Monnier's labours are of value to science, but especially to navigation, and recommend the memoir to be printed.

It may be worth while to give an example of the manner in which M. Monnier thus accounts for the changes which the streams of flood and ebb undergo.

M. Monnier, in order to account for the general circumstances by which these effects are determined, gives an account of the leading views contained in Mr. Whewell's "Essay towards a first Approximation to a Map of Cotidal Lines," published in the Philosophical Transactions for 1833. He then remarks, as the reporters have done, that the stream of flood continues to run, in most cases, for some time after high-water; and, that in the middle of the channel this goes on for half the time that the tide is falling, as observed and stated by Captain White. M. Monnier remarks also, that the rise of the tide is very different in different parts of the coast of the same sea, according to the form of the shore. Thus, the rise increases from twenty-eight to forty-five feet on the point of the coast of France, between le Four (near Ushant) and Granville, while it is only from eighteen to twenty feet on the south coast of England, from the Land's End to Start Point, fourteen feet at Portland Bill, and seven feet at Weymouth.

By combining these considerations, M. Monnier explains some cases apparently complicated.

"Let us begin," he says, "by examining what ought to take place at four or five leagues north of the isles of Guernsey and Alderney, and let us try to discover the changes which the currents then ought to undergo in twelve hours, beginning from the time of high-water, which, according to the journal, corresponds to the maximum velocity of the stream of flood. At this time, the current in the positions of which we speak, ought to follow the direction of the British Channel, that is, it ought to run E. or E. ¼ N.E. But when it is high-water on the coasts of Brittany and Normandy, from Brehat to the Cape of La Hague, the waters accumulated in the Bay of Cancalle, as well as on the side of Jersey and Guernsey, can only run off by the north; they thus occasion a current which, on account of the inequality of level, attains its greatest velocity at this period of the tide, and changes the direction of the stream in the open sea, turning it somewhat to the north. After high-water, the currents which prevail at a little distance from the shore, must evidently, as they lose their velocity, gradually work round from east to north; and when the stream

of flood changes, and runs to the north-west, these currents must set in the direction given them by the difference of level of the waters inshore, and in the open sea. They will then continue to veer round the compass, and will complete their circuit in twelve hours, always turning in the same direction. And this is the rule which M. White found to hold, in part, for the currents on the north of Alderney and Guernsey."

Other experiments made by Captain White seven leagues south-east of Start Point, shew, that in this position the currents follow nearly the same law as in the shore of Alderney and Guernsey, with this difference, that, instead of completing their circuit, they go backwards, beginning from high-water, and return, going round by the south, through all the points of the compass which marked their direction successively, from the moment of low-water, when they set to the west, to the moment of high-water, when they set E.N.E.

"In the position which we are now considering, and from this to Portland Bill, the stream of flood ought to set successively to the south, to the south-east, &c., because the waters are attracted by the gulf which opens between Brehat and Cape La Hague. But when it is high-water, its level being lower at seven leagues from Start Point than on the shore of England, the water accumulated from this cape to Portland Bill tends to run off towards the south, and the current which this occasions modifies successively those which prevail in the open sea, forcing their direction to incline more and more to the south. This is the reason why the currents which are observed at seven leagues from Start Point turn at high-water, and go back on the points of the compass which they traversed before."

Without assenting entirely to the whole of M. Monnier's explanations as satisfactory, we may observe, that it is undoubtedly by considerations of this kind that we must account for the changes and rotations of the currents, which are periodical with the tide; and complex and various as these phenomena may seem to be at first sight, we need not despair of explaining them fully when our knowledge of the tides is sufficiently complete.

M. Monnier's memoir also contains a collection of statements of the hours of high-water, and of the change of stream in the offing at some of the principal points of the coast, from the entrance of the channel to Cape Antifer, and other information of the same kind.

[We must request the indulgence of our publishing friends, with some of whom we are sadly in arrear. We might account for our neglect, but the best *amende* would no doubt be the *amende honorable* which we promise them to make in our next. Ed.]

Steam Navigation.—Steam navigation is fast superseding the use of the regular coasting vessels on the eastern coast of England, and bids fair, ere long, to drive them out of the trade. Dundee, which until the introduction of steam communication had six first-rate smacks trading with London, has now but one; and Aberdeen, which formerly had in all eight smacks in the same trade, has now none. Many of the Leith smacks frequently leave London in ballast. The present competition in steam navigation and cheap travelling has spread even to the remote Hebrides. At present passengers are taken from Oban to Staffa and Iona, and back again, for 2s. 6d. The charge last year was 30s.

PROMOTIONS: COMMANDER—Lord Frederick Gordon.

APPOINTMENTS: ASIA, 84: *Col. Vol.* G. A. Wale.—BEACON, Surv. Ves.: *Lieut. Com.* T. Graves—BELLEROPHON, 80: *Lieuts.* C. Godby, J. Campbell.—BONETTA, 10: *Lieut.* H. Deschamps.—BRITANNIA, 120: *Mate*, J. G. Harrison; *Assist. Surg.* J. Todd.—CALEDONIA, 120: *Lieuts.* J. P. Davey; H G. Ayscough.—COAST GUARD: *Coms.* D. Peat, at Hastings; J. M'Hardy, at Deal; J. Bowen, vice W. C. Browne; *Lieut.* J. Pollard.—CORNWALLIS, 74: *Assist. Surg.* D. Bowen; *Mid.* C. J. P. Glinn.—DUBLIN, 50: *Capt.* R. Tait; *Com.* R. Smart; *Lieut.* W. Chambers; *Sec. Mast.* W. Chambers.—EDINBURGH, 74: *Assist. Surg.* F. Mansell, M.D. —FLY, 18: *Lieut.* C. J. F. Campbell; *Master*, W. R. Madge; *Surg.* A. Millar; *Purser*, W. Young; *Assist. Surg.* R. Grehame.—HERCULES, 74: *Mid.* D. Sinclair. —HOPE, Packet: *Master*, P. C. Bean.—HENRY PORCHER, Conv. Ship: *Surgeon*, Gilbert King, M.D.—IMOGENE, 28: *Mate*, J. Borlase; *Schoolmr.* R. Inskip.— INCONSTANT, 36: *Lieut.* A. L. Montgomery; *Surg.* J. Chartres, M.D.; *Mate*, Sir T. W. E. Nicholson, Bart.; *Mids.* H. A. Hollingsworth, J. A. Dunbar, H. B. Hankey, G. A. West, J. F. Tottenham, H. V. Haggard; *Mast. Assist.* C. T. Manfield; *Assist. Surg.* E. Newman, M.D.—MADAGASCAR, 46: *Assist. Surg.* W. Bayne; *Mid.* C. A. Vansittart.—MAGNET, Packet: *Mast.* F. Hale.—MINDEN, 74: *Lieuts.* E. Lewin, E. H. Kenney.—ORDINARY: *Portsmouth*, see Victory; *Plymouth*, see San Josef; *Sheerness*, *Lieut.* J. Simmonds; *Mast. Attendt.* J. Napier.—PARTRIDGE, Tender: *Lieut.* P. Bisson.—PIQUE, 36: *Capt.* Hon. H. J. Rous; *Lieut.* T. P. Thompson; *Master*, J. K. Martyn; *Surg.* W. Folds; *Purser*, W. Brown; *Mates*, R.D. Aldwick, A.W. Wood, F. Bourchier; *Mast. Assist.* J. King; *Sec. Mast.* J. W. King; *Mids.* W. Hawkins, G. R. Hamilton, H. N. Burroughs, H. B. Paget, T. Anson, A. Paget, E. Maunsell, C. W. Bonham, R. Sutton, G. E. K. Gore, A. Tower; *Assist. Surg.* R. J. B. Chambers; *Clerk*, F. Henna.—RODNEY, 92: *Lieut.* H. Gittings.—ROYAL ADELAIDE, Yacht: *Lieut.* H. Lyster; *Assist. Surg.* J. Ramage, M.D.—ROYAL GEORGE, Yacht: *Assist. Surg.* W. Bailey.—SAN JOSEF, 120: *Capt.* R. Thomas; *Com.* J. Robertson; *Lieuts.* W. Parker, E. Knapman, J. Derriman, C. Hall; *Master*, W. Brodie; *Surg.* J. E. Risk; *Purser*, J. Elliott; *Chaplain*, W. R. Payne; *Assist. Surg.* T. Ball.—SCYLLA, 16: *Lieuts.* E. Battersby, J. Markett; *Mast.* C. Gahan; *Surg.* T. Gibson; *Purser*, D. J. Simpson; *Assist. Surg.* C. T. S. Kevern; *Clerk*, J. Lindesay.—THALIA, 46: *Lieut.* J. Price; *Mid.* E. Wills.—TRIBUNE, 24: *Mate*, A. La Touche.—VICTORY, 104: *Capt.* T. Searle, C.B.; *Com.* H. Drury; *Lieuts.* R. Lowcay, G. L. Wolley, J. Jeayes; *Surgeon*, C. Maybery; *Purser*, J. D. Jones; *Chaplain*, F. Ferris; *Sec. Mast.* C. J. Parker; *Assist. Surg.* S. Mason.

Births.

On the 24th July, at Mere, Wilts, the wife of John-Jones Dyer, Esq., of the Admiralty, of a daughter.

At Cadlington House, Horndean, Hants, the lady of Capt. Michael Seymour, R.N., of a daughter.

Lately, at Priske, near Helston, the lady of Capt. Head, R.N., of a son.

On the 28th July, at Allonby, Cumberland, the lady of Lieut. Robinson, R.N., of a son.

At Rosbeg House, county Mayo, Ireland, the lady of Commander William Shallard, of a daughter.

On the 14th Aug. in Winifred Dale, the lady of Commander Jervois, R.N., of a daughter.

On the 2d Aug., at Carthagena, the lady of Matthew Carter, Esq., his Britannic Majesty's Consul at that place, of a son.

At Strete Raleigh, the lady of Commander T.W. Buller, R.N., of a daughter.

Marriages.

At Woodstock, near Toronto, Upper Canada, 4th April, Robert Riddel, Esq., to Elizabeth, eldest daughter of Rear-Admiral Vansittart.

On the 14th July, at Plymouth, Mr. J. Hannaford, maltster, of Batson, near Kingsbridge, to Mary, eldest daughter of Commander W. Wood, of the same place.

On the 21st July, at Plymouth, Carteret J. Kempson, Esq., of Abingdon-street, Westminster, to Elizabeth Love, eldest daughter of the late Capt. W. H. Douglas, R.N.

At Camberwell, T. Williams, Esq., of Queen-square, Bloomsbury, to Marianne, daughter of the late Capt. Ravenscroft, Royal Navy.

At St. Sidwell's, Lieut. Lavers, R.N., to Miss Sanders, daughter of T. Sanders, Esq. of Exeter.

July 23, G. Ogle, Esq., of Brompton, to Philippa Wallis, eldest daughter of the late Capt. J. Lamb Popham, R.N., of Falmouth.

On July 28th, at Stonehouse, Plymouth, Capt. Hill, 32d Regt., only son of Captain Sir John Hill, R.N., Superintendent at Deptford, to Miss Fanny Scoble, daughter of the late Joseph Scoble, Esq.

On the 31st of July, at the house of her son, George-Gatton Hardingham, Esq., solicitor, Millman-street, Bedford-row, Georgiana, widow and relict of John Haxby, Esq., of Worthing, and formerly the wife and widow of Josaphat Davy Hardingham, Esq., R.N.

In Dublin, R. Jocelyn Otway, Esq., Lieut. R.N., nephew to Sir R.W. Otway, to Anne, daughter of the late Sir Hugh Crofton, Bart., of Mohill, Leitrim.

At Kingston church, Edmund Ironside, Esq., to Miss Marianne Murray, second daughter of the late Lord Cringletie, and niece of Admiral Sir P. Durham, G.C.B.

At Bishopwearmouth, J. G. Harrison, Esq., R.N., to Jane, daughter of the late W. Hindmarsh, Esq., Bishopwearmouth. And A. J. Moore, Esq., of Sunderland, to Ann, second daughter of the late W. Hindmarsh, Esq., Bishopwearmouth.

At Chudleigh, by the Rev. G. Burrington, Captain Bond, of the Madras Infantry, to Lucy, third daughter of the late Capt. Arscott, R.N.

At St. George's, Hanover-square, Captain the Hon. Arthur Duncombe, R. N., second son of the Right Hon. Lord Feversham, to Delia, youngest daughter of John Wilmer Field, Esq., of Heaton Hall, in the county of York.

On the 9th July, at Beckenham, Kent, Lieut. Brothers, R. N., of Norwood, Surrey, to Harriet, second daughter of Paul Storr, Esq., of Beckenham.

July 20th, at Clifton, Lionel Olive, Esq., of Rodney-place, Clifton, to Elizabeth-Charlotte, eldest daughter of Capt. Sir William-George Parker, Bart., R.N.

At Gloucester, James Lloyd, jun., Esq., to Elmira, daughter of the late Lieut. J. Page, R.N.

At Budock, Mr. J. B. Kinsman, to Elizabeth, daughter of Lieut. Pawle, of H.M. packet Mutine.

Deaths.

Aug. 5, at Tetbury, Gloucestershire, the Rev. H.C. Davies, of Sydney College, Cambridge, only son of Captain H. T. Davies, R.N.

On the 11th July, at Bayswater, Commander Richard Burton.

At Deal, Lieut. T. Kingston, R. N., aged 51.

At Derryguin Castle, Kerry, Com. Massey H. Herbert, R.N. (1819.)

At Gloucester, Henry-John-Revely Mitford, Esq., R. N., second son of John Mitford, Esq., Barrister at Law, aged 27.

Lately, at Wimborne, Lieut. W. H. Mayne, R.N. (1830.)

At Exeter, most deeply lamented, in the 63d year of her age, Arabella, wife of William Ashford, Esq., and daughter of the late Captain Beckinoe, R.N.

On the 21st July, at Bath, Lieut. Charles-Hurst Gardiner, R.N. (1818.)

At Durham, Mary, eldest daughter of Captain A. Lapslie, R.N.

Suddenly, on 14th Aug. at Falmouth, aged 31, Jane, the beloved wife of Lieut. J. F. Browne, R.N., and second daughter of Captain W. Bore, Superintendent of Quarantine at Plymouth, leaving four young children to bewail her loss.

On 15th Aug. at Kingston, aged 79 years, John Peake, Esq., Purser, R.N. (1788), brother to the late Sir Henry Peake.

Drowned, while bathing at Woolwich, Charles, youngest son of Capt. J. Dick, R.N., Cadet, Royal Military Academy, aged 15.

On the 16th Aug., at Southampton-row, Russell-square, J. S. Foster, Esq., late of the Navy-office.

In the East Indies, in an attack by some rebellious natives, Lieut. Richard Bromley, of the Company's Artillery, second son of Richard Bromley, Esq., Purser of H.M.S. Edinburgh.

At Burnt-island, S. Grindlay, Esq., late Commander of the revenue cruiser Princess Royal.

At Mallow, Cork, Commander H. C. Coxen, of Eltham-place, Kennington, in his 66th year.

On the 13th July, retired Commander Matthew-Bowles Alt, in his 75th year.

In Princess-street, after a painful illness, Mrs. Collins, wife of Mr. John Collins, Purser of H.M.S. Thunderer, in the Mediterranean, leaving a large family to lament the loss of a beloved parent.

On the 3d Aug. at the residence of Dickins Buckle, Esq., Medina Cottage, Isle of Wight, Hannah, wife of Matthew Buckle, Esq., of Norton House, near Chichester, and only daughter of the late Admiral Buckle.

On his passage to England, Charles Maggs, Esq., R. N., of his Majesty's dockyard at the Cape of Good Hope.

After a short illness, Mr. Robert Penman, Boatswain of the sheer-hulk, at Plymouth.

At Falmouth, the infant son of Capt. G. M. Nichols, of the Sir Francis Drake steamer.

On Sunday the 17th July, at the house of his uncle, Mr. Geo. Stebbing, Mr. D. H. Cox, of London, in the 36th year of his age.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

JULY, 1836.

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.
		in. dec.	in. dec.	°	°	°	°						
1	F.	30·11	30·13	72	82	61	83	E.	W.	2	2	Bcm.	Bc.
2	S.	30·19	30·21	76	82	64	84	S.W.	W.	2	3	Bv.	Bv.
3	Su.	30·23	30·23	65	79	54	80	W.	W.	3	3	Bc.	Bv.
4	M.	30·26	30·24	74	84	56	87	S.W.	S.E.	2	2	B.	Bcl.
5	Tu.	30·15	30·10	77	85	62	86	S.E.	N.E.	3	4	Bc.	Bcl.
6	W.	30·05	30·11	74	76	66	79	S.W.	N.	2	4	Bctlr (2	Bc.
7	Th.	30·22	30·22	64	72	55	74	S.W.	S.W.	4	5	Bcm.	Bcm.
8	F.	30·28	30·29	65	71	56	72	N.W.	N.W.	4	3	Bc.	B.
9	S.	30·23	30·21	72	76	55	77	S.W.	S.W.	4	6	Bc.	Qbc.
10	Su.	30 14	30·12	72	80	55	82	S.W.	W.	2	3	Bc.	Bc.
11	M.	30·12	30·08	73	81	59	83	S.W.	S.W.	3	4	B.	Bclt.
12	Tu.	29·73	29·80	65	72	62	73	S.W.	S.W.	4	4	Od (2)	B.
13	W.	30·04	30·01	63	71	52	72	S.W.	S.W.	4	4	B.	Bc.
14	Th.	29·96	30·00	65	69	58	72	S.W.	S.W.	5	5	Bc.	Bc.
15	F.	29 88	29·76	59	64	52	66	S.W.	S.W.	5	6	Qp (2)	Qor (3
16	S.	29·74	29·80	60	68	49	69	W.	S.W.	5	5	Bc.	Bc.
17	Su.	29·91	29·96	63	71	58	71	W.	W.	6	6	Qo.	Bcq.
18	M.	30·10	30·08	61	69	54	70	W.	.	5	5	B c.	B.
19	Tu.	29·90	29·77	63	67	50	70	S.W	S.W.	7	8	Qo.	Qor (4)
20	W.	29·54	29·41	53	53	52	56	S.E.	N.W.	5	5	O r (2)	P (3)
21	Th.	29 62	29·64	57	59	44	62	S.W.	S.W.	5	5	Qp (2)	Bcptl 3)
22	F.	29·76	29·80	58	58	48	64	S.W.	S.W.	3	2	Bc.	Bcp (3
23	S.	30·05	30·06	59	62	51	64	N.W.	S.W.	2	2	Bcm.	Bcmp (3
24	Su.	29·83	29·69	53	63	50	64	S.	S.W.	3	4	Or (2)	Bcp (4)
25	M.	29·77	29 84	55	65	49	65	W.	N.W.	4	4	Opd (2)	O.
26	Tu.	30·10	30·11	62	70	54	72	S.W.	S.W.	2	2	Bc.	Bc.
27	W.	30 14	30·15	63	74	59	75	S.W.	S.W.	3	3	O.	B
28	Th.	30·06	30·00	70	76	54	77	S.	S.	3	4	Bm.	Bc.
29	F.	29·68	29·60	62	68	61	69	S.	S.	7	6	Qor (2)	Qod (3
30	S.	29·96	30·14	58	61	54	62	S.W.	S.W.	7	5	Qo.	Qbcp (3)
31	Su.	30·38	30·40	57	64	48	65	N.W.	W.	2	2	Bcm.	Bcm.

JULY—Mean height of Barometer = 30·001 inches; Mean Temperature = 63·7 degrees; Depth of Rain fallen = 1·55 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

ABACO LIGHTHOUSE

Lighted from 1836

GUN CAY LIGHTHOUSE

Lighted May 1836.

London Pub.d for the Proprietors of the Nautical Magazine by Simpkin & Marshall 1838

ORIGINAL PAPERS.

October, 1836.

New Bahama Lighthouses.

With our present number, we present our subscribers with a view of the two new lighthouses erected on the Bahamas, and their appearances as seen at a distance, from drawings by Mr. Lawrence, of H. M. surveying vessel Thunder. The positions of the lights have been well determined by Com. R. Owen of that ship, and the local dangers also critically surveyed. The experience and judgment of this officer have also been of much service in completing the various arrangements of these important establishments. The following is the description of them:—

Hydrographic-Office, Admiralty, Sept. 1, 1836.

His Majesty's Government having established two new lighthouses in the Bahama Islands, the following particulars of them are published, for the information of mariners:

Gun Cay Revolving Light.

At two hundred and fifty yards from the southern extreme of Gun Cay (a narrow ridge of coral which stands on the western edge of the Great Bahama Bank) this lighthouse has been erected, in 25° 34′ 30″ north latitude, and 79° 18′ 24″ west longitude. Its base is twenty-five feet above high-water, and the height of the tower is fifty-five feet. The light revolves once in every minute, and may be seen in all directions, except between the bearings of S. by W. ½ W. and S. ¼ E. (magnetic,) where, at the distance of about eight miles, it will be intercepted by the Bemini Islands.

When within five miles' distance, vessels should not bring the light to the southward of south-east, as the chain of cays and reefs project in a curve to the westward, and as they lie within a mile of the outer edge of the bank, there might be scarcely time to obtain soundings. The flood-tide also sets strongly to the eastward through the intervals of the cays, where it is high-water at full and change at 7 h. 30 m., and the tide rises three feet.

The light being eighty feet above the level of the sea, it will be visible in clear weather at the distance of

12	miles to an	eye elevated	10 feet.
13	do.	do.	20 do.
15	do.	do.	40 do.
17	do.	do.	80 do.

Abaco Revolving Light.

At one-third of a mile from the Hole in the Wall, (as the south-east point of Abaco Island is called,) this lighthouse has been

erected, in 25° 51′ 30″ north latitude, and 77° 10′ 45″ west longitude. Its base is eighty feet above high-water, and the tower is eighty feet high. The light revolves once in every minute, and may be seen in all directions, except where the high parts of the island intervene; and being 160 feet above the level of the sea, it will be visible in clear weather at the distance of

15	miles to an eye elevated	10	feet.
17	do.	do.	20 do.
19	do.	do.	40 do.
21	do.	do.	80 do.

There is good anchorage (during ordinary winds) in ten and eleven fathoms, with the lighthouse bearing E. by N. about half a mile from the shore. The time of high-water at full and change is at 8 h. 0 m., and the tide rises three feet.

Directions for Entering the Port of Rio Grande, Brazil.

To the Editor of the Nautical Magazine.

Liverpool, August 9, 1836.

Sir,—As I believe there are no proper charts or directions published for entering the port of Rio Grande de San Pedro, (the southernmost port in Brazil,) all those which I have seen being for a channel which has long since closed up, I beg leave to send you the following, if you think it worth your attention, premising that no vessel ought to go there drawing more than ten and a half or eleven feet water, and that she must have a leading wind to cross the bar.

The land ought to be made to the north-east of the bar, in about lat. 32° S. There is no difficulty in doing this, as the soundings are perfectly regular; about sixty fathoms at sixty miles' distance, and shoaling very gradually. When in ten or eleven fathoms, you will see the land. It is not advisable to get inshore to the southward of the bar.

The coast is little known; and I never could get any of the coasters or pilots to give me any information about the shoals said to exist thereabouts. In general, but not always, the bottom is mud to the southward, and abreast of the bar, whilst it is usually sand to the northward; and if to the southward of the port, the land will not be seen till you are in seven or eight fathoms. I do not know of any marks to tell how far you are from the port, as the whole shore consists of low sand-hills, interspersed with bushes, and these hills alter their shapes with every gale of wind. The town of Estreito lies about thirty miles north-east of the bar, but you must be close inshore to see it. This is the only object which breaks the sameness in the appearance of the coast for many miles. The latitude is the best guide.

After making the land run down at a convenient distance, till you see a square white tower which stands at the entrance of the harbour, in lat. 32° 9′ S. This is a very conspicuous object, makes like a sail at a distance, and may be seen some time before the land about it. On the top of this tower (which shews a bad light at night) a man is stationed, who, as soon as he perceives a vessel, hoists a red flag, when the pilot-boat goes out to sound the bar. As soon as you see the tower distinctly, hoist the signals corresponding to your draft of water at the fore. When you get down to within three or four miles of the tower, haul inshore into four fathoms and a half, if a commanding breeze, or you may bring the tower to bear W. by S. ½ S. and steer for it; when you will soon see the boat at anchor on the bar, with the signals corresponding to the depth of water on the bar flying at her masthead.

Should there not be sufficient water for you, the red flag on the tower will now be hauled down, when you must haul out to sea, and cruise off and on till the water rises. Sometimes a vessel gets down near the bar before the boat gets out. In this case the red flag will be hauled down, and you must keep off and on till she arrives at her station: you will probably see her beating out, but do not attempt to run for her until the red flag is up again. Do not lie to, as there is usually a strong lee current. The boat not being out in time seldom happens now, as the pilots are much more attentive than they used to be. As soon as the flag is up again, steer for the boat.

Particular attention must now be paid to a man in this boat, who will wave a small red flag on the end of a long pole, in the direction you are to steer. Thus, if he wants you to steer more inshore, he will point towards the shore, and keep it pointed in that direction till your course is altered sufficiently, when he will lower it; and vice versa. Luff to, or bear away immediately, according to the signals he makes. When you get near the boat, he will weigh his anchor, and proceed ahead of you. Follow in his wake, still paying attention to his signals, and you will soon pass a second boat at anchor: here the water deepens, but the channel is not a cable's length broad. After passing this boat, you haul more up towards the guard schooner, and choose your anchorage anywhere to the westward of, and near her, (till you are out of quarantine,) in from four to eight fathoms, excellent holding-ground. Do not go to the eastward of her as she lies on the edge of the bank. Have an anchor ready the moment you are over the bar, as it frequently falls little wind when you open the river, with a strong current setting out over the banks. I have sent you enclosed an eye-sketch of the bar, and likewise the signals used for indicating the draft of water. I believe the sketch, without pretending to absolute correctness, will be quite sufficient to point out the whereabouts of the bar, which has been moving gradually for some years past from

the south-west to the north-east. It has moved about a quarter of a mile to the N. N. E. since I have known it, viz. about two years. It is therefore probable that this sketch will, in four or five years more, be as useless as the charts are at present. The coast line was taken from an old chart altered a little, and the banks sketched partly from the top of the tower, and partly in a boat.

There are no regular tides in the Rio Grande; the current commonly runs with the wind; and, as in the river Plate, and I believe all along this coast, south-west winds raise the water, and north-easters depress it; consequently a vessel may load in the port to twelve feet, as there is almost always plenty of water with the south-west wind, which blows right out over the bar. The south-west storms, called Pamperos by the Buenos Ayreans, and Rebojos by the Brazilians, blow furiously here in winter, about the full and change. They usually come on in a sudden gust, though the appearance of the sky gives sufficient warning for some time first, and blow very hard indeed for five or six hours, when the wind decreases, and a few days of very fine weather succeed. Sometimes they draw round to south and south-east before the wind abates, which renders it highly dangerous for a vessel near the coast. As the water is shoal, there is a deep ground-swell which sets a ship very fast inshore. It may be as well to observe, that in consequence of the disturbances in the province, the red flag was hoisted in April last at the guard-ship's masthead, instead of on the tower, and was so when I came away in June last, as a party of the revolutionists had gone there, plundered the pilots' houses, and pulled the flagstaff down, but without further injury to the tower. It is to be supposed that this state of affairs will not last long. The flag is not quite so well seen at the guard-ship's masthead, and the look-out man cannot see a vessel quite so far off as before: this makes the only difference. The signals are made in palms, each palm being nine English inches. I am aware that the proper Portuguese palm is somewhat less; but nine inches is always the calculation made here for the draft of water.

Wishing your useful periodical all success,

I remain, Sir, your most obedient servant,

JAMES HARRISON,
Brig General Wolfe.

Signals to be hoisted at the fore-topgallant masthead, on making the tower of Rio Grande de San Pedro:—

A white pendant signifies 7 palms, or 5 ft. 3 in. English.
A blue pendant—8 p. or 6 ft.
A red pendant—9 p. or 6 ft. 9 in.
A white flag—10 p. or 7 ft. 6 in.
A blue flag—10½ p. or 7 ft. 10½ in.

A red flag—11 p. or 8 ft. 3 in.
A white flag over a blue flag—11½ p. or 8 ft. 7½ in.
A blue flag over a white flag—12 p. or 9 ft.
A white flag over a red flag—12½ p. or 9 ft. 4 in.
A red flag over a white flag—13 p. or 9 ft. 9 in.
A blue flag over a red flag—13½ p. or 10 ft. 1½ in.
A red flag over a blue flag—14 p. or 10 ft. 6 in.
A blue pendant over a white flag—14½ p. or 10½ ft. 10½ in.
A white flag over a blue pendant—15 p. or 11 ft. 3 in.
A blue pendant over a blue flag—15½ p. or 11 ft. 7½ in.
A blue flag over a blue pendant—16 p. or 12 ft.
A blue pendant over a red flag—16½ p. or 12 ft. 4½ in.
A red flag over a blue pendant—17 p. or 12 ft. 9 in.

[We hope to hear again from our valuable correspondent, Capt. Harrison. The above clear directions for a harbour of which we possess scarcely any other information, will be most acceptable to his brother seamen, and no doubt induce them to imitate his useful example. We have taken the earliest opportunity of publishing them, as we always shall do any important information which the commanders of our merchant shipping may forward us, for each other's benefit and advantage. ED. N. M.]

THE MERCHANT SERVICE.* *By a Member of the United States Naval Lyceum.*

HAVING seen much of the merchant service, and witnessed the want of system and economy in its administration, I have thought that some suggestions on this important subject, might be acceptable to such of the readers of the Nautical Magazine as are connected with the mercantile interests of the country.

I have always entertained the opinion, that the owners, masters, and crews of merchant ships, would be mutually benefited by the adoption of a uniform system of equipment and disbursement, and the idea recurred to me more forcibly very recently, when we had reason to anticipate a war with a great and powerful nation; in the event of which those vessels that ventured beyond our ports, unattended by convoy, must of necessity have been well armed and manned; and the want of that order and discipline so indispensable in armed vessels, would have rendered the precaution of

* We have reprinted this article from the Naval Magazine, published at New York, the subject being one of a most important nature, and more particularly so now, when (it is to be hoped) the late inquiry into the cause of shipwrecks may produce some improvement in the condition of the whole system. As far as Jack is concerned, our readers will find he is treated much the same at New York as he is at Blackwall.—ED. N. M.

arming them almost useless. Although there is now but little prospect of war with any power, yet as some benefit may be derived from the discussion of the subject, I shall endeavour to point out such improvements as may tend to the interests of the owners, and essentially promote the comfort of all concerned.

No one can find fault with the construction, the masting, the rigging, or the internal arrangement for the accommodation of the officers and crew, or the stowage of the cargo of our merchant ships; they are admirable in all these respects, and are generally commanded by experienced, gentlemanly, and faithful men. In their outfit and discipline there are many imperfections, which may easily be corrected, and grievances on the part of the officers and crew, which ought to be removed.

I do not intend to impute to ship-owners any contracted or sordid views. As a class, I believe them to be high-minded and liberal, and I am convinced that they would most readily adopt any suggestions calculated to ameliorate the condition of that devoted class, to whose patient industry, and exposure to perils and privations, may be mainly ascribed the unparalleled prosperity of our commercial interests. As one familiar with the merchant service, but in no way connected with it, I trust that my remarks may be received in the spirit of fairness by which they are dictated.

I propose here to suggest such ideas as occur to me on the subject of enlisting men, and their condition while on shore, reserving for a future occasion the subjects of their moral improvement and instruction, and their discipline and treatment ashore and afloat, embracing the collateral points of provisions and clothing.

With regard to the mode of enlisting men, a prominent evil prevails, in the correction of which the most serious obstacles are presented. It would be found difficult, under existing circumstances, to rescue sailors from the influence and rapacity of their landlords, or, as they are more usually termed, crimps, and at the same time secure the services of these men, in the prompt enrolment of crews for outward-bound ships; even in the naval recruiting service, with all the checks that are systematically put in force to protect the interest of the sailor, it is not unfrequently the case that a recruit is taken to the receiving ship, after having been fleeced of the earnings of his last voyage, and brought in debt to the whole amount of his wages advanced at the moment of enlistment.

The writer has known instances in which sailors have been discharged from ships of war, with abundance of clothing, and balances of three and four hundred dollars in their pockets, and in four days have presented themselves at the rendezvous for reshipment, without money or clothes, and with a bill against them equal to their three months' advance. Many attempts have been

made by officers, to induce these misguided men to save their wages, and they have succeeded so far as to prevail on many to deposit considerable sums in the savings bank; but the moment they have been separated from the influence of the officers, they have been persuaded by the harpies around them, to withdraw the whole, and expend in a few days the hard earnings of as many years.

It would be easy to fill a volume with a relation of the various tricks put upon sailors, to rob them of their money. Jack is aware of the character of his enemies, but heedlessly abandons himself to their wiles, spends his few days of comparative wealth in drunkenness and riot, and awakens from the debauch pennyless, and suffering all the torments of the "horrors."

Sometimes we see an old tar, who has been many a time cheated by these scoundrels, steering clear, as he imagines, of the "land sharks;" but, instead of being fleeced by his landlord, he is robbed by coachmen,* and other idle rogues, who hang about the taverns and grog-shops frequented by sailors; so that, in the same short time, his money disappears.

All sailors are fond of coach-driving, and many aspire to the more adventurous exercise of riding on horseback, to them the very extreme of daring; and a few have even attained the high privilege of riding their own horse. A well-known sailor in the navy, Jack Hamilton, often laid aside a large portion of his wages for the purchase, on his return from sea, of a horse. He imagined himself an excellent judge of horse-flesh, but, like many others of

* This was verified only the other day in our own metropolis, as will appear by the following extract from the *Times*:—

JACK AND THE CABMAN.—At the Mary-le-bone police-office, on Wednesday, a red-faced jolly-looking son of Neptune, who gave his name Jack Robinson, was brought up in custody, on the charge of having refused to pay the legal fare for the time of the cabriolet No. 735. Jack, on being asked why he objected to pay complainant his demand, placed his arms a-kimbo, and said, "My noble lord and gentlemen, the plain truth of the matter, without any gammon or nonsense at all, is this here: I came over in the Spartan from New York, and landed at Bristol, when I directly brought myself to an anchor a-top of a stage, and got into London yesterday. Well, I happened somehow or another to be steering along Ratcliff-highway, where I had just spoke with a shipmate, when up comes this land-lubber and axed me if I wanted a ride, so I set sail in his craft, and told him to cut on like lightning to Tottenham-court-road. But afore I got into my berth I says, says I, 'Now, mate, what's the price of my passage?' And he agreed to land me for two bob, with the understanding, my lord, on the road I was to stand grog for us both, which I did; and when I got out I offered him the blunt, but he wouldn't have it, and said he should charge for time, instead of distance. 'Avast there, my lad,' says I, 'I shan't pay it, so you may do your best and be d—d;' and with that he calls this blue-coated fellow, (pointing to a policeman,) who locked me up in a little square crib worse than a black-hole at Calcutta. This, my lord, (making a profound bow, and scraping his foot on the floor in true sailor-like style,) is the whole truth, and no gammon whatsomdever."

Jack Robinson was discharged.

the same pretensions, was invariably cheated. At last, however, he secured possession of a steed which soon won all his affection. This was an old, broken-down, black coach-horse, with a long tail. On this trusty animal—trusty, because he was sure never to put in bodily fear his lord and master, by any extraordinary feat of activity—Jack was wont to display himself in Broadway, about noon, making his quaint remarks upon the belles and beaus, as they drifted up and down the side-walks. But this happiness could not last long; his money was soon gone, and he must go to sea for more. He could not think, however, of permitting his favourite black to fall again into the hands of land-lubbers. So he put him out to board, and left a half-pay ticket for his support, while absent on another three years' cruise. He had forgotten, however, or perhaps never knew, that the age allotted to a horse was not threescore and ten; and, as the nag was sinking into the vale of years when he became the property of his last and kindest master, he did not survive to welcome him back from sea.

Jack, on his return, gave to the memory of the old black a few sighs, and has since continued to prove the sincerity of his affection, for he has never bestrode another steed. He was his last love, and he has remained as true to him, to use his own language, "as the needle to the pole."

It is a singular trait in the character of sailors, that those who are the most economical at sea, are proportionally improvident when they get ashore. I knew many years ago a fine old seaman, captain of the waist on board one of our frigates, who, when on shipboard, was a very pattern of parsimony, and by saving had accumulated a large amount of wages. His period of service happened to expire while the ship was at New-London, and he demanded and received his discharge. He went on shore with several hundred dollars, but when there knew not what to do. There were no villanous crimps in that quiet place, to help him to spend his money, and he wandered half-drunk about the streets, amusing, by his humorous sallies, the staid people of the town. At last he purchased an old wheel-barrow, into which he emptied the contents of the neighbouring cake and candy shops, adding a goodly supply of toys and ribbons: thus charged, he perambulated the streets with a crowd of laughing children in his wake, all willing to become his customers, since he distributed his wares gratis. In trundling his barrow about the wheel was broken, but this annoyed him but little; he soon cleared away the wreck, and substituted as a jury wheel in its stead, a large white-oak cheese, purchased of the nearest grocer.

With this rig he continued his route. In a few days he had exhausted this source of amusement, as well as the contents of his purse, when he returned on board, and resumed with cheerfulness

his former occupations, commencing again to lay up money for another cruise on shore.

Knowing, as we do, the character of these simple and confiding men, we can easily account for the influence exercised over them by their landlords. So long as their money holds out, they are permitted to do as they please; but the moment the last dollar is expended, they become the slaves of these ruffianly tyrants. To procure food and drink, they must have money or credit; and they soon contract a debt, which can only be liquidated by the advance usually paid to those engaging on a new voyage. Their clothing has probably been sold or pawned for liquor, and they embark with hardly sufficient raiment to cover their nakedness. Being debtors to the landlords, these men have an unbounded control over their movements; they can prevent their shipping, and, by combination among themselves, detain vessels for want of hands.

There has always been more or less difficulty in getting the crews on board of outward-bound merchant ships. Many are put on board drunk, and incapable of performing any duty for hours after the pilot has taken his departure. In the southern ports it is infinitely worse than at New York. At New Orleans, for instance, sailors, in the expectation of obtaining higher wages, generally desert from the ship in which they are engaged to perform a voyage: and such is the want of energy in the administration of the laws in regard to seamen, that punishment is rarely inflicted upon them for the most open infractions of engagements, to which the most important of our national interests require that they should be bound, at least, as rigorously as any other class of men. Ships, in this way, are left without crews; and, to enable them to prosecute their voyages, others must be obtained upon the emergency, at any cost of trouble or expense. To this end, the services of the landlords, the very men who harbour the runaways, are put in requisition; and these wretches, after trumping up a bill against the deluded sailor, thrust him into his new ship drunk and half naked. Thus he changes from one ship to another, after spending a week of debauchery in some filthy place of concealment, where he contracts a debt to his seducer, which he is constrained to work out by his last contract, unless he can contrive to desert again, and pass another week of riot.

Most vessels now sailing from New Orleans are towed by steamboats to the mouth of the Mississippi; and as each steamer takes several at a trip, the hour of departure is well understood, that all may be in readiness at the appointed time. It therefore behoves the captains to have their respective crews on board. To effect this the crimps are busy in bringing forward their men; but it often happens that some of the number have strayed from their dens of concealment, and are not to be found when the ship to which they are assigned is to depart, and it becomes necessary to have others

in their place. It matters little to the landlord who he substitutes. Sometimes, when embarrassed, they will seize on any one in sailor's garb they may chance to meet; perhaps some drunken boatman of the river found asleep on the Levee. In the hurry and confusion of departure, which usually takes place in the evening, the trick is not discovered; and the poor wretch, when roused from his insensibility, finds himself at sea, perfectly unconscious of the voyage he is to make.

It is difficult to suggest any effective remedy for these and similar abuses. To improve the character of the landlords appears to be the most efficient course; and this can only be done by the merchants, by countenancing and employing the few among them who are conscientious and well-disposed, and by visiting upon the much larger portion, the vile and dishonest, the full penalties of the law, whenever these evil practices can be detected.

In a great city like New York, whose commercial wealth is second only to that of London, there should exist a competent court, devoted exclusively to that portion of the community connected with shipping, steamers, and river craft. It should be made the province of the magistrates of this court to have cognizance of all misdemeanors committed, either on board vessels in the stream, or at the wharves, to keep a register of all seafaring men, and to exercise a general supervision over the conduct of landlords, crimps, sailors, and watermen. But, in default of this useful tribunal, which it is not probable will very soon be established, the merchants, as a body, might constitute an agent to look after these concerns, whose duty it should be to superintend the enrolment and discharge of seamen; the arrival and departure of ships; the suitable supplies and stowage of provisions and water; the getting the crews on board outward-bound vessels; assisting in securing those just arriving; and, in a word, to watch over the mutual interests of the merchants, masters, and sailors.

The well-directed efforts of these agents, when put forth in concert with those of the "Bethel and Seamen's Friend Societies," would have an extraordinary tendency to defeat the artifices of the landlords, and benefit immeasurably the moral and religious character of seamen. We should no longer hear of combinations among them for higher wages; merchants would, of their own accord, pay them with a just liberality suitable to the exigencies of the times; nor would ships be detained when ready for sea, at a great expense, with the frequent loss of a fair wind.

The abuses which exist can, and ought to be corrected. Captains and mates are not so much in fault in the case, as owners and their agents. We are constantly reading in the public papers, of large donations by merchants to various objects of benevolence at home, and in distant countries, but rarely, very rarely, do we hear of any having for their chief object the benefit of those neglected men, to

whose hardy toil they are indebted for their princely fortunes. Do they fulfil to these the duties enjoined upon them as faithful masters, watchful over the moral and religious condition of their servants? Do they give proper attention to their health and comfort? The answer must be in the negative. This neglect ought not perhaps to be ascribed to a want of any sentiment of justice or liberality towards seamen, among ship-owners. They would doubtless most promptly promote any measure that should promise benefit to the sailor. Let them understand by what means this desirable object may be attained, and they will cheerfully lend their best influence to the work. Of this we feel assured; for, among them, if there be a few ready to plunder Greek or Turk, Jew or Gentile, there are others as generous and open-hearted with their wealth, as the most heedless sailor in their employ.

Y.

SLYNE HEAD NEW LIGHTHOUSES.

THE Corporation for Preserving and Improving the Port of Dublin, &c., give notice, that two lighthouses have been built on Slyne Head, west coast of the county Galway, from which lights will be exhibited on the evening of the 1st of November, 1836, and thenceforth will be lighted from sun-set to sun-rise.

Specification given of the position and appearance of the lights by MR. HALPIN, *Inspector of the Irish Lighthouses.*

The two lighthouses erected on Illaan Imul, the most western of the chain of rocky islets forming Slyne Head, bear from each other N. by E. and S. by W., distant asunder 415 feet, and kept in line lead outside of all rocks between Galway bay and Clew bay. The northern, a revolving light, having one *red* and two *bright* faces, may be seen all round, and will make a total revolution in six minutes, or two minutes to each face. The southern, a fixed *bright* light, will be illuminated seaward from S. E. ¼ E. to E. b N.

The northern lighthouse bears by compass from

(Var. 28½° W.)

Branach isl.	(W. end of Gt. Arran isl.)	N. b W	dist. 21	sea miles
Skird rocks	(off ent. to Birterbuy bay)	N. b W. ¼ W.	12	do.
Myle rock	(do. do.)	N. b W. ¼ W.	9¾	do.
Carrigarone	(off entr. to Ardbear bay)	S.W. b W. ¼ W.	5¾	do.
High island	(west point)	S. S.W. ¼ W.	8¾	do.
Innishark	(west point)	S. b W. ¼ W	12¼	do.

The towers are circular—coloured white; the lanterns are elevated over the mean level of the sea,

of north lighthouse, 112 feet,
of south lighthouse, 104 feet,

and may be seen at distances of 14 and 16 miles in clear weather.

By order, H. VEREKER, Sec.

Ballast Office, Dublin, 30th June, 1836.

REPORT OF THE SELECT COMMITTEE ON SHIPWRECKS—*Presented on Monday, August 15.*

THE select committee appointed to inquire into the causes of the increased number of shipwrecks, with a view to ascertain whether such improvements might not be made in the construction, equipment, and navigation of merchant vessels as would greatly diminish the annual loss of life and property at sea, and who were empowered to report their opinion thereupon, together with the minutes of evidence taken before them, to the house, have examined the matters referred to them, and agreed to the following resolutions:—

I. *Extent of Loss in Property and Lives at Sea.*

1. That the number of ships and vessels belonging to the United Kingdom which were wrecked or lost in the periods specified below, appears, by a return made to the committee from the books of Lloyd's, to be as follows:—

Number of vessels stranded or wrecked—1816, 343; 1817, 362; 1818, 409: total, 1,114.—1833, 595; 1834, 454; 1835, 524: total, 1,573.

Number of vessels missing or lost—1816, 19; 1817, 40; 1818, 30: total, 89.—1833, 56; 1834, 43; 1835, 30: total, 129.

Making a total of 1,203 ships or vessels wrecked and missing in the first period of three years, and a total of 1,702 wrecked and missing in the second period of three years.

2. That, taking the number of vessels wrecked and lost in the two periods named above, at the assumed value of £5,000 for each ship and cargo, on the average of the whole, the loss of property occasioned by these wrecks would amount in the first three years, to £6,015,000, being an average of £2,005,000 per annum; and in the last three years to £8,510,000, being an average of £2,836,666 per annum.

3. That the number of ships in each of the years above specified of which the entire crews were drowned, though the exact number of each crew is not stated, appears, by the same return made to your committee, from the books of Lloyd's, to have been as follows:—

Number of vessels in each year, of which the entire crews were drowned—1816, 15; 1817, 19; 1818, 15: total, 49.—1833, 38; 1834, 24; 1835, 19: total, 81.

Making a total of 49 in the first period of three years, and a total of 81 in the second period of three years.

4. That the number of persons drowned in each of the years specified, in addition to the above, and of which the number drowned belonging to each vessel is distinctly known, appears, by the same return from Lloyd's books, to be as follows:—

Number of persons drowned in each year by ships named—1816, 945; 1817, 499; 1818, 256: total, 1,700.—1833, 572; 1834, 578; 1835, 564: total, 1,714.

5. That, assuming the average number of persons in each of the vessels of which the entire crews were lost to consist of ten individuals, including officers, seamen, and passengers, it would appear, that in the first three years the number of persons drowned were 588 in the forty-nine vessels whose crews were entirely lost, and 1,700 in the vessels of which the exact number in each was known, making a total of 2,228 lives, or 763 per annum; and that in the *last* three years the number of persons drowned was 972 in 81 vessels whose crews were entirely lost, and 1,710 in the vessels of which the exact number in each was known, making a total of 2,682 lives, or 894 per annum.

6. That among the special cases of loss by shipwreck on particular parts of the coast, it has been stated, that during the last four years 272 ships were lost belonging to the port of Tyne, averaging 68 vessels per annum; the whole number of vessels registered in that port being about 1,000 sail; that these 272 vessels measured 60,489 tons; and assuming these to have been total losses, and the average value of the whole to be £10 per ton, the loss of property from this single port would be £604,890 in four years, or £151,222 per annum, while the number of lives lost in these 272 vessels during the same period was 682; the number of widows and orphans left for relief 147; and the amount of money paid out of the funds of the Seaman's Association at Shields, for relief of members of that society only, amounted to £1,935. 15s. 9d.; the ships employed from this port being principally colliers, which perform eight or nine voyages in each year, and are continued in occupation during the winter as well as summer along a dangerous coast.

7. That during a period of 16 months, from January 1, 1833, to May 1, 1834, the number of vessels reported in Lloyd's books as missing or lost, and which have never since been heard of, amounted to 95 in number; and these ships being principally engaged in foreign voyages, the calculation made on their value, and the number of their crews, including officers, seamen, and passengers, assuming £8,000 as the lowest average value of ship and cargo throughout, and 15 persons as the average number of persons on board, the whole gives a total loss in these missing ships only, within the short period of 16 months, of £760,000 sterling in property, and 1,425 lives.

8. That these results do not embrace the whole extent of loss in property or lives, occasioned by shipwrecks, even among those vessels only which belong to the United Kingdom, inasmuch as these returns include only the losses entered in Lloyd's books, from which the returns adverted to were made out; whereas it is

well known that many vessels and lives are lost by wreck or foundering at sea, of which no entry is made in Lloyd's books, and of which, as no record is kept, no return can be produced.

9. That the whole loss of property in British shipping wrecked or foundered at sea, may therefore be assumed as amounting to nearly three millions sterling per annum; the value of which property, though covered by insurance to certain parties, is not the less absolutely lost to the nation, and its cost paid for by the British public, on whom its loss must ultimately fall.

10. That the annual loss of life, occasioned by the wreck or foundering of British vessels at sea, may, on the same grounds, be fairly estimated at not less than one thousand persons in each year, which loss is also attended with increased pecuniary burdens to the British public, on whom the support of many of the widows and orphans left destitute by such losses must ultimately fall.

II. *Principal Causes of Shipwreck.*

11. That among the various causes of shipwreck, which appear susceptible of removal or diminution, the following appear to be the most frequent and the most generally admitted:—1. Defective construction of ships. 2. Inadequacy of equipment. 3. Imperfect state of repair. 4. Improper or excessive loading. 5. Inappropriateness of form. 6. Incompetency of masters and officers. 7. Drunkenness of officers and men. 8. Operation of marine insurance. 9. Want of harbours of refuge. 10. Imperfection of charts.

12. *Construction of Ships.*—That the defective construction of ships appears to have been greatly encouraged by the system of classification, which, from the year 1798 up to the year 1834, was followed at Lloyd's, by which the age of a vessel and the port at which she was built, were made the chief tests of her strength and safety; and by which all new vessels, however slightly constructed, were entitled to be registered in the first class for a given number of years, varying from six to twelve, after which the strongest ships were placed on a level with the weakest, being excluded from the first class when the prescribed period of years had expired; the tendency of this system of classification being to induce shipowners to build their ships in the cheapest manner, and with the least degree of strength that was sufficient to sustain their vessels through the shortest period named (some having foundered and others having gone to pieces on their first voyage), after which period their value would be greatly reduced by their exclusion from the first class.

13. *Equipment, Repair, and Loading.*—That the frequent replacing of such vessels as had thus passed into the second class, by building new ones to occupy their stations in the first class, led to an increased supply in the number of new ships beyond the healthy or profitable demand for them; while the vessels which

had run out the short term prescribed for their continuance in the first class, being sold at very reduced prices, and the purchasers having no inducement to put them in an efficient state of repair—since no amount of reparation would restore them to their original position—such vessels were navigated on a less capital and at less freight than others, and by thus competing on lower terms with the already superabundant number of ships afloat, contributed to produce such general depression of freights and profits as to compel the most rigid economy in the outfit and expenses of shipping generally, and the greatest efforts to make a moderate interest on the capital employed, which too frequently led to the inadequacy of equipment, the imperfect state of repair, and the improper and excessive loading, enumerated among the causes of shipwreck.

14. *Foreign Competition.*—That in addition to this operation of severe competition among different classes of shipping belonging to the United Kingdom, the British shipowner had also to meet the competition of foreigners, in the ships of Continental Europe, who, from the many advantages enjoyed by them in the superior cheapness of their materials for building, equipping, and provisioning their vessels, and the lower rate of wages paid to their crews, were enabled to realize profits on terms of freight which would not even cover the expenses of British ships.

15. *Forms of Ships.*—That the inappropriateness of form in British merchant vessels, which often incapacitates them from beating off a lee shore, and consequently leads to their being wrecked, has been partly the result of the nature of British maritime trade, and partly of the defective systems of measurement, and the heavy tonnage duties formerly levied on British ships; many vessels being necessarily constructed of a flat form of bottom, to adapt them to the shoal harbours of England, and enable them to lie in safety while aground; but though these last are causes which no system of fiscal regulations could remove, yet it is established and admitted that the system of admeasurement and heavy tonnage duties which formerly existed presented a strong inducement to shipowners to build their ships of such forms and dimensions as should unite a small nominal tonnage by admeasurement, with a large actual capacity for carrying a cargo considerably above the tonnage at which she might be registered; which united qualities could only be obtained at the sacrifice of speed, buoyancy, celerity of evolution, and consequent incompetence to escape from the dangers of a lee-shore.

16. *Classification of Ships.*—That the system of classificatio has been very greatly improved by the formation of a new association entitled "Lloyd's Register Society for British and Foreign Shipping," the basis of whose regulations appears to be a *bona fide* attempt to classify vessels according to their real and intrinsic merits, including their age, construction, materials, workmanship,

and stores; but though there is good reason to believe that the ultimate result of this new system of classification will be to effect a great improvement in the general character of the ships of the United Kingdom, yet the society possesses no authority beyond that of any other private association, to enforce the observance of such rules as may be necessary to secure the greatest degree of strength and safety desirable to be attained in merchant ships.

17. *Admeasurement of Tonnage.*—That though the system of admeasurement, as recently changed, may define, with sufficient accuracy, the cubic space of the ship's hold, it is a problem well worthy of attention, to discover some method that shall fix the admeasurement of tonnage at the actual amount of dead weight which a ship can carry without sinking, a fixed proportion of which might be deemed the registered tonnage; in order to remove every inducement to build ships of inappropriate forms, with a view to lessen their tonnage duty.

18. *Incompetency of Masters and Officers.*—That the frequent incompetency of masters and officers appears to be admitted on all hands, this incompetency sometimes arising from the want of skill and knowledge in seamanship, but more frequently from the want of an adequate knowledge of navigation; it being proved that some masters of merchant vessels have been appointed to command after having been for a very short time at sea; that others have hardly known how to trace a ship's course on the chart, or how to ascertain the latitude by a meridian altitude of the sun; that many are unacquainted with the use of the chronometer, and that very few indeed are competent to ascertain the longitude by lunar observations; while some are appointed to command merchant vessels at periods of such extreme youth (one instance is given of a boy of 14, all of whose apprentices were older than himself,) and others so wholly destitute of maritime experience (another instance being given of a porter from a shipowner's warehouse, who was made a captain of one of his ships), that vessels have been met with at sea who were out of their reckoning by several hundreds of miles, and others have been wrecked on coasts, from which they believed themselves to have been hundreds of miles distant at the time.

19. *Drunkenness and Use of Spirits.*—That drunkenness, either in the masters, officers, or men, is a frequent cause of ships being wrecked, leading often to improper and contradictory orders and directions on the part of the officers; sleeping on the look-out or at the helm, among the men; occasioning ships to run foul of each other at night, and one or both foundering; to vessels being taken aback or overpowered by sudden squalls, and sinking, upsetting, or getting dismasted, for want of timely vigilance in preparing for the danger; and to the steering wrong courses, so as to run upon dangers which might have othewise been avoided.

20. That the practice of taking large quantities of ardent spirits

as part of the stores of ships, whether in the navy or in the merchant service, and the habitual use of such spirits, even when diluted with water, and in what is ordinarily considered the moderate quantity served to each man at sea, is itself a very frequent cause of the loss of ships and crews; ships frequently taking fire from the drawing off of spirits, which are always kept under hold; crews frequently getting access to the spirit casks, and becoming intoxicated; and almost all the cases of insubordination, insolence, disobedience of orders, and refusal to do duty, as well as the confinements and punishments enforced as correctives, both of which must for the time greatly lessen the efficiency of the crews, being clearly traceable to the intoxicating influence of the spirits used by the officers and men.

21. *Experiments in American Vessels.*—That the happiest effects have resulted from the experiments tried in the American navy and merchant service to do without spirituous liquors as an habitual article of daily use; there being at present more than 1,000 sail of American vessels traversing all the seas of the world, in every climate, without the use of spirits by their officers or crews, and being, in consequence of this change, in so much greater a state of efficiency and safety than other vessels not adopting this regulation, that the public insurance companies in America make a return of five per cent. of the premium of insurance on vessels completing their voyages without the use of spirits, while the examples of British ships sailing from Liverpool on the same plan have been productive of the greatest benefit to the shipowners, underwriters, merchants, officers, and crews.

22. *Marine Insurance.*—That the system of marine insurance, though affording the means of protecting individuals from excessive loss, has nevertheless a tendency, by transferring the pecuniary responsibility for such losses from the owners of ships to the underwriters who issue them, to induce less care in the construction of ships, less efficiency in their equipment, and less security for their adequate management at sea, inasmuch as the risk of such loss to the shipowners can be covered by a fixed premium of insurance, which, being charged on the freight, and then re-charged on the goods conveyed, fixes the real responsibility and real loss ultimately on the public; as all the parties actually engaged in the transaction can secure themselves from any participation in such loss by the aid of marine insurance.

23. *Harbours of Refuge.*—That there are many portions of the coast of Great Britain in which the want of harbours of refuge has led to the loss of many vessels that might have been easily saved had such harbours existed; of which the two following instances may be named:—In three different gales of wind which occurred in the years 1821, 1824, and 1829, there were lost on the east coast of England, between the Humber and the Tees, 169 vessels, of

which 73 were wrecked on the rocks off Redcar, where peculiar facilities exist for constructing a harbour of refuge, by which the loss of nearly all these vessels might have been avoided. In the present year, 1836, no less than 39 vessels were seen on shore in Holyhead Bay at one time, 20 of which were totally lost, with all their crews on board; and within the same period many vessels have been wrecked between Holyhead and Liverpool, where an excellent position exists for forming a harbour of refuge between the Great and Little Orme's Head, near the entrance of river Dee, at which, had such a harbour been formed, the greater number of these vessels might have been saved.

24. *Imperfection of Charts.*—That the imperfection of charts is more particularly the cause of shipwreck in the newly-opened regions of the Eastern Archipelago and the China seas, where, notwithstanding the highly valuable labours of the East India Company's maritime officers, and the zealous perseverance and ability of their distinguished hydrographer, the late Captain Horsburgh, whose directory and charts of the Eastern seas have been invaluable safeguards to life and property in those regions, there yet remains much to be achieved towards obtaining correct nautical surveys of the islands and coasts.

III. *Remedies Proposed or Suggested.*

25. *Mercantile Marine Board.*—That it is a matter of the first importance to authorize, by enactment, the formation in London of a mercantile marine board, to direct, superintend, and regulate the affairs of the mercantile marine of the United Kingdom, on such a plan of organization and control as shall unite a due regard to the private interests of the shipowners, merchants, and underwriters, whose individual property may be embarked therein, with an equal attention to the public interests in the preservation of the national capital from destruction at sea; and, above all, in securing as far as possible the safety of the lives of those who may be engaged in navigating the ships and conducting the maritime commerce of the country.

26. That this mercantile marine board should be so constituted as to embrace a competent number of experienced officers of the Royal Navy, and masters in the merchant service, united with experienced shipowners and ship-builders, assisted by a skilful hydrographer, a professor of nautical astronomy and navigation, and one or more men of eminence in the legal profession, the election of such members to be vested in certain proportions in the Admiralty, the Trinity Board, and the shipowners, and to be irremovable from office except by the concurrence of the three bodies named; and that to such a board should be intrusted the power to carry into effect, both in London and the outports, under the sanction and authority of parliament, the following primary objects:—

27. *Code of Maritime Law.* The compilation and consolidation

of a code of maritime law, embracing so much of the existing common and statute law of the realm as should appear to the board to be most important to be adopted and made generally known, adding thereto such other provisions as might seem necessary to the completion of such a code as should clearly and accurately define the relative duties and obligations of shipowners officers, and seamen; with a view to supply the remarkable defect under which Great Britain now labours, in being almost the only maritime country of the world in which no such special code of maritime law exists.

28. *Nautical Improvement.*—The promotion and encouragement of nautical improvement, by receiving, examining, and reporting upon plans presented to them for that purpose, whether in science, art, or discipline, embracing therefore subjects connected with nautical astronomy and navigation, hydrography and surveying, naval architecture, seamanship, rigging, stowage, sailing, regulation of crews, and other matters conducive to the improvement of British ships and British seamen.

29. *Classification of Ships.* The perfecting a system of classification of ships, to the utmost attainable point of accurately defining, by such classification, the real state and condition of every ship registered.

30. *Building, Surveying, and Equipment.*—The collection of information as to the best methods for building, surveying, fitting out, equipping, loading, and furnishing with the requisite supply of men, provisions, water, and boats, all ships built and registered in the United Kingdom; and the suggestion of the best means of giving practical efficiency to the information thus acquired.

31. *Examination of Officers.*—The formation of certain standards of qualification in seamanship and navigation, to be attained by officers before they should receive licenses of appointment to particular grades in the merchant service; and certain higher standards of qualification in seamanship, navigation, and nautical astronomy, to be attained by masters before they should be entitled to receive licenses of appointment to the command of vessels of different classes and for different voyages.

32. The appointment of examiners in seamanship, navigation, and nautical astronomy, for the public examination of all candidates for appointment as officers or commanders, with power to remand all who should be deficient in the requisite degree of knowledge for the class to which the candidate might aspire, and with a power also to grant licenses to officers of superior skill and knowledge, authorising each class to wear a uniform, as was done in the late mercantile marine of the East India Company, differing from the uniform of the navy, but at the same time sufficiently marked for the purpose of distinguishing the persons wearing it as passed officers of the merchant service.

33. *Savings Banks and Asylums.*—The preservation of the health, strength, and moral character of seamen, which are material elements in the efficiency of ship's crews, and tend to lessen the risk of shipwrecks by the establishment of savings banks for the wages of seamen, and asylums for the reception of the men and their effects, either in ships to be moored afloat, adapted to their reception, or in buildings erected on shore; for the purpose of saving these seamen, as far as may be found practicable, from the misery and degradation into which they are so constantly plunged almost immediately after their return from sea, when, being made intoxicated, and sometimes stupified by drugs, they are robbed and plundered by crimps who make them their victims, and who hold them in actual bondage till all their wages are drained from them, when they are often taken in a state of intoxication to a ship, of the officers and crew of which they know nothing, and their advance of wages, instead of being applied to the purchase of an outfit for the voyage, is seized by their original betrayer for a real or pretended debt incurred while in his custody.

34. *Registry Offices.*—The formation of registry offices for merchant seamen, at which certificates of the name, age, capacity, and character of every seaman (which, by the late Act for the Registration of British seamen, must be granted to all seamen demanding the same from their commanders at the time of their discharge) may be deposited and recorded in a register book to be kept for that purpose; such registry offices to be bound to furnish, free of expense, authenticated copies of such certificates of character to all seamen applying for the same; in order to afford the requisite facility for the selection of the best men; and to furnish inducements to commanders, to engage at early periods of the vessel's fitting out, the actual crews by which their ships are to be manned for the voyage.

35. *Nautical Schools.*—The establishment of cheap nautical schools, either in ships afloat adapted to the purpose, or in appropriate buildings on shore, in which the practical duties of seamanship and the elements of navigation should be taught to the young apprentices who are training up for the sea; and in which, under proper directions, some attention should be paid to their habits of cleanliness, order, and sobriety, and the preservation of their moral characters, all of which are at present unhappily neglected

36. *Courts of Inquiry.*—The arrangement of a plan for the institution of courts of inquiry, to examine into the circumstances of every shipwreck that occurs as far as may be practicable, with power to pronounce a verdict of censure on the owners or commanders of all those vessels where the result of the inquiry should establish the fact of such wreck being occasioned by any fault or deficiency on the part of either, as well as to acquit honourably the owners and commanders of those ships against whom no fault

could be proved, and to make the evidence and verdict in each case public in every port of the kingdom; with further power to suspend, for a given time, the licenses or certificates of such officers and seamen as should be proved guilty of gross incompetency or gross neglect of duty; and to reward, either by reimbursement of their loss of wages and effects, or by gratuities, or medals of honour and distinction, those officers and men who should have particularly distinguished themselves by their skill, courage, or humanity, in preserving the lives and property of others, whether actually belonging to the ships that were wrecked, or coming to their assistance from other vessels or from the shore.

37. *Settlement of Disputes.* The formation of special tribunals for the cheap, speedy, and open trial and adjudication of all questions arising between shipowners, officers, and men, relating to claims for wages, breaches of discipline, and such other matters of dispute as might be fitly submitted to summary jurisdiction in order to avoid the great delay, expense, and uncertainty attending such trials in the ordinary courts of law and police, as at present constituted, the effect of which is often sufficient to deter parties from seeking redress, and thus to defeat the ends of justice, equally to shipowners, officers, and seamen.

38. *Funds from Fees.*—That the funds for the support of the Mercantile Marine Board in London, and its auxiliary establishments at the principal out-ports, might be raised by the payment of moderate fees on the registration of ships, and on the granting of licenses and certificates to officers and commanders, aided by such contributions from the public revenue as the institution might require.

39. *Assistance of Government.*—That, while the Marine Board should be engaged in carrying out the principles and accomplishing the objects hereinbefore enumerated, there appear to this committee to be others well worthy the attention of the Government, by the promotion of which they can render material assistance towards the improvement of British ships, and the relief of British seamen, more especially the following:—

40. *Reduction of Duties.*—The gradual reduction of all the duties, imposts and taxes which press in the first instance on shipping, and which tend to enhance the cost of their building, equipment, and navigation, so as to enable them the better to meet the severe competition to which they are now subject with the ships of other nations.

41. *Diminished Use of Spirituous Liquors.*—The encouragement, in his majesty's navy, of the system,—so happily followed both in the ships of war and merchant vessels of America, and in some instances in the merchant ships of England, with the best results in every case,—of discontinuing the daily supply of spirits to the seamen as an article of necessary use, and substituting the

more nutritious and wholesome beverages of coffee, cocoa, chocolate, or tea; so as to restrict the quantity of spirits supplied as stores, to the amount required for special and urgent occasions, to be served under the direction of the commander and medical officer of each ship, and at such periods only as they might deem necessary.

42. *Loading and Provisions.*—The prevention, by such means as may be deemed most efficient, of the practice of carrying any portion of a ship's cargoes on deck, by which vessels are frequently upset and water-logged or sunk; and the securing the reservation of an adequate portion of the provisions and water for the crew, to be kept in some part of the vessel that shall be accessible in such cases of peril, to prevent the dreadful scenes of hunger, misery, and lingering death, to which so many are subjected every year, for the want of some such securities as those proposed.

43. *International Negotiations.*—The opening a negotiation with all the maritime powers of the world with which Great Britain has either political or commercial relations, in order to effect, if possible, a comprehensive treaty with each and all of them, to use their best endeavours for the preservation of the lives and property of those who may have the misfortune to be wrecked on their shores, first securing the lives, and affording sustenance, shelter, and protection to the persons, of those who may be cast upon their coasts, and then disposing to the greatest advantage of the property saved, holding the proceeds for a given period at the command of the lawful claimants, if any should appear; and after such period, should no claimants apply, transferring the amount to a shipwreck fund, out of which to defray the expenses incurred in the preservation of life and property saved on their coasts; in order to supersede, if possible, the present barbarous practice of plundering the ships and men thrown by misfortune on dangerous shores, as well as to transfer the proceeds of such wrecks from the funds of the droits of the Admiralty and lords of the manor, to a fund for the relief of shipwrecked mariners, and the restitution to its lawful owners of shipwrecked property.

44. *Plans and Models.*—That among the various plans and models of proposed improvements in the construction of vessels, which have been submitted to the committee, there appear to be none more worthy of serious attention than those which show the great superiority, in strength and powers of resistance, of the solid bottoms for ships, as evidenced in the case of his Majesty's ship Pique, over the ordinary method of construction in merchant vessels, by which open spaces are left between every pair of timbers. They conceive, also, that the apparatus of Captain Manby, for conveying a rope communication from the shore to the ship, in cases of wreck, and the apparatus of Mr. Trengrouse, for conveying a rope communication from the ship to the shore, or from one ship to

another, are deserving of national encouragement, as calculated to rescue many lives from destruction, wherever speedily and judiciously applied.

45. *American Shipping.* That the committee cannot conclude its labours without calling attention to the fact, that the ships of the United States of America, frequenting the ports of England, are stated by several witnesses to be superior to those of a similar class amongst the ships of Great Britain, the commanders and officers being generally considered to be more competent as seamen and navigators, and more uniformly persons of education than the commanders and officers of British ships of a similar size and class trading from England to America; while the seamen of the United States are considered to be more carefully selected, and to be more efficient; that American ships sailing from Liverpool to New York have a preference over English vessels sailing to the same port, both as to freight and to rate of insurance; and, higher wages being given, their whole equipment is maintained in a higher state of perfection, so that fewer losses occur; and as the American shipping have increased of late years in the proportion of 12¼ per cent. per annum, while the British shipping have increased within the same period only 1¼ per cent. per annum, the constantly increasing demand for seamen by the increasing maritime service of the whole world, and numbers cut off by shipwreck, and the temptation offered by the superior wages of American vessels, cause a large number of British seamen every year to leave the service of their own country, and to embark in that of the United States, and these comprising chiefly the most skilful and competent of our mariners, produce the double effect of improving the efficiency of American crews, and, in the same ratio, diminishing the efficiency of the British merchant service.

46. *Legislative Enactments.*—That it is therefore the opinion of this committee, that the earliest opportunity should be taken, in the next session of Parliament, to call the attention of the Legislature to the present state of British ships and British seamen, with a view to the introduction of such enactments as may be best calculated to elevate and improve the general character of the British mercantile marine, and to place it in such a state of safety and efficiency, as to make its ships the most perfect structures that art and science can form, its officers the most distinguished for their competency and skill, and its seamen as respectable in character, and as happy in the enjoyment of adequate remuneration for their toils, as their devotion to their country in war, and their services to commerce in peace, so justly entitle them to expect.

J. S. BUCKINGHAM, Chairman.

[The foregoing Report of the Shipwreck Committee is one of the most important documents ever yet offered to the attention of the British legislature. There is enough for grave and deliberate consideration in every line of it, and it bears ample testimony throughout to

the unwearied zeal and diligent inquiry with which the Committee, to their lasting honour and credit, have performed their duty. The evidence on which the report is founded, has not yet appeared. We have little doubt that it will present some curious specimens of the working of the system on which our mercantile marine is at present conducted, and we shall not fail to lay some of them before our readers. But we trust that the next session of Parliament will see some steps adopted towards a regeneration of that system, by the adoption of the Committee's recommendations, and that the British Merchant Service will not then be left in that deplorable condition in which it has so long remained, at once a reproach to the British public, and a tax on their pockets.—Ed. N. M.]

Lights in the Road of La Hougue,—*Department of La Manche.*

(Received from the French Government.)

Hydrographic-office, Admiralty, Aug. 20, 1836.

From the 1st of September next three small lights will be exhibited all night on the eastern coast of the department of La Manche, to facilitate the entrance to the road of La Hougue, viz.

The 1st light on the Redoubt of Reville (Point de Saire), lat. 49° 36′ 26″ N. and long. 1° 13′ 41″ W. of Greenwich.

2d. On the Mound of Morsaline, in lat. 49° 34′ 13″ N. and long. 1° 19′ 18″ W.

3d. On the southern extremity of Fort La Hougue, in lat. 49° 34′ 19″ N. and long. 1° 16′ 16″ W.

In fine weather these lights may be seen at the distance of three leagues.

The Reville light, in one with the revolving light on Cape Barfleur, gives a line which must not be crossed to the westward by vessels working at night to the southward, when abreast of Tatihou island.

Morsaline light and Fort La Hougue light, when in one, shew the northern limit of the channel by which large vessels should enter the road; and this line of direction just touches the southern side of the shoalest of the Ouest-Drix rocks, on which there are only 14 feet at low water spring tides.

To approach the anchorage in large merchant vessels, it is necessary, when proceeding from the point where the two above-mentioned lines of direction meet each other, to steer so as always to keep Fort la Hougue light open some degrees to the northward of Morsaline light, which is easily distinguished from that of La Hougue by being much higher.

A ship of the line having reached the point where the above-mentioned two lines of direction meet, should steer W.S.W. (mag.) for the anchorage in the Great Road. On this course she will pass between the Ouest-Drix and the north point of the bank de la Rade.

The fishing boats of St. Waast, as well as the small coasting vessels which seek shelter at night in the little road of La Hougue, and which are apprehensive of falling to the southward of the best

sheltered part of the anchorage, may steer exactly in the direction of the lights when the water is smooth. These vessels may even haul into the northern part of the road without running the risk of falling on the rocks of La Dent and Le Gavendest, by keeping Morsaline light open some degrees to the northward of that on Fort la Hougue.

LIGHT ON THE ISLE DE BAS, *Department of Finisterre.*

FROM 1st October next, the tower recently erected on the western side of Isle de Bas (lat. 48° 44′ 45″ and long. 4° 1′ 29″ W. of Greenwich) will be distinguished during the whole night by a light which will be eclipsed once every minute.

The light will be placed 131 feet above the surface of the ground, and will thus stand 223 feet above the level of high-water spring-tide.

In fine weather the light will be perceptible at a distance of nine marine leagues, and the eclipses will not appear total until beyond four leagues.

SHOALS IN THE CHINA SEA.

The China Sea is full of shoals, and navigators should lose no time in laying down the following on their charts.

To the Editor of the Nautical Magazine.

Liverpool 8th, Sept. 1836.

SIR—I beg to give you the following information, which I received when lying at Whampoa in December last, from Captain French, of the "Sabina" of New York.

"Making the Palawan Passage, I fell in with the Royal Captain Shoal, and, passing very close to it, I was induced to stand still further on, on the starboard tack, wind generally N.E., in hopes that I might fall in with some of the "Pennsylvanias" laid down as, "position uncertain" in Horsburgh's Charts, should there be such places. At 10. 30, A. M. we saw from the mast-head very high breakers, so that I stood on laying up N.N.W. to N. by W. ½ W., and a little before noon hove to the wind close to the southward of them, and now could see the rocks and the sea breaking tremendously and very high; I got the latitude, which made us in 9° 39′ N., the rocks bearing North two miles, which makes their lat. 9° 41′ N.; and by two very good chronometers, which Captain French had navigated the China seas with on former voyages, he made their longitude 116° 40′ E.; he then made sail on the larboard tack, and stood S. E. by E. ½ E., and made the Bombay Shoal, and his chronometers perfectly agreed with the place assigned to it in Horsburgh's Chart, so that I think

there can be little doubt that this is one of the "Pennsylvanias Shoals," positions of which is laid down "uncertain."

There is also a shoal passed over by the "Fairie Queene," of Liverpool, Captain Holmes, in lat. 10° 32′ N. long. 117° 59′ E. soundings got from 9 to 25 feet, ship going 5 knots per hour, and was 45 minutes passing over it; coral rocks seen plainly under the ship's bottom. I do not know whether Captain H. has made this public, as he has sailed before my arrival, but as, at the time he gave me the information, we were at Whampoa together, I think there is little doubt that there are a great many dangers undiscovered in those seas; and, from the numerous vessels now navigating it, you may expect to hear every day of something new.

I remain, Sir, your obedient servant,

46, Castle-street. W. SWAINSON, Lieut. R. N.
Commanding barque Enmore of Liverpool.

Captain Swainson has rendered a service to navigators in thus giving the accurate position of one of the numerous "Pennsylvanias" in the China Sea; and it would be equally desirable if the other places where they are laid down as doubtful, were looked at on any favourable opportunity, that the term "uncertain" may be removed.—ED.

SCARBOROUGH AS A HARBOUR OF REFUGE.

"Then, oh, protect the hardy tar;
Be mindful of his merit." *Old Song.*

To the Editor of the Nautical Magazine.

SIR,—When you congratulated your seafaring brethren, who are daily braving the formidable dangers of our eastern coast, on a Select Committee being appointed in Parliament, to inquire into the alleged deficiency of protection for ships on the north-eastern coast of England, and the propriety of admitting the contribution of passing tolls, for the maintenance of harbours of refuge on that coast; I confess that my hopes, with those of many others of my brother seamen, were raised in no small degree, that the result of that inquiry would not only demonstrate what, as you justly observe, "every one knows," that that deficiency really does exist, but that a body of men selected from among the senate of this country, for such an important purpose, would point out the best means of supplying a remedy for that deficiency. But when I read in your August number the report of that committee,† I confess that my hopes were miserably disappointed. Every one has

* P. 242, No. 50. Under the head of "Asylum Harbours."
† P. 496.

read the fable of the mountains in labour, and the comparison may be well applied to the labours of this committee. For assuredly the harbours which they *have* taken under their especial patronage, compared with one which they *have not*, bear about the same ratio to it, in points of size and importance, as the mouse did to the mountains. In a former number, I addressed you on the subject of the harbour to which I allude, namely, that proposed to be constructed at Redcar,* a plan of which has already appeared in your work; and as the report of this committee, together with the evidence on which it was formed, are now before the public, I propose, with your permission, to consider some of the facts which they contain.

We find by the first and second clauses of the report, that the committee consider there is no such thing as a harbour of refuge from the Frith of Forth to the mouth of the Thames; that all are tidal harbours, or those which dry at certain times of tide, and that vessels on that coast are particularly exposed to winds from north to south-east.

It is unnecessary to say any thing on this subject; every one seems to be as well satisfied as the committee, of its truth. The third clause introduces the harbours of Whitby, Scarborough, and Burlington, as having been long maintained, under the authority of often-renewed acts of Parliament, by a small passing toll on coal. As Scarborough appears to put forth more pretensions than the others to be considered a harbour of refuge, I will commence my observations with it; and, to such of your readers who have not a local acquaintance with these several places, I will give their description from the reports and evidence of engineers, who have been employed in their formation or improvement.

Sir John Rennie, in his able report to the commissioners of Scarborough harbour, dated so late as September 26th, 1834, describes the inner harbour as having an area of nine acres at high-water spring-tides, with two entrances, one of sixty-seven feet and one of one hundred feet width, and four feet six inches *above* low-water spring-tides.

He says, "The outer harbour was commenced in 1732 by the formation of a breakwater, to shelter the eastern pier of the inner harbour," and "its area is five acres and a quarter." "The depth where this outer pier or breakwater was made was originally in twelve feet at low-water; but from the great accumulation of sand in it, brought in by the inshore currents, or northerly eddies, it is rarely or ever used, which is much to be regretted."

Relative to the inner harbour, which Sir John Rennie has already described as being four feet six inches above low-water mark of spring-tides.† He also observes, that it cannot therefore, under

* Vol. II.

† Spring tides only average sixteen feet of rise, and neaps eleven, at Scarborough.

any circumstances, be termed accessible for vessels drawing more than eight feet water, until two-thirds flood at a medium tide, one-half flood at an equinoctial tide, and high-water at a neap-tide: so that vessels drawing more water must either wait until a later period of the tide, or, if it happen at neaps, must seek refuge elsewhere. But, as it frequently happens that the heaviest seas set in with the flood-tide, and vessels seeking shelter crowd one after another in fleets, by the time that they reach the harbour, (if there is sufficient water to enable them to enter,) great confusion, and frequent accidents, take place; and the harbour, even when full, cannot accommodate above fifty or sixty square-rigged vessels, which is far too little, and those which cannot find entrance must trust to their anchors and cables outside, or keep to sea, at great risk of being wrecked, which unfortunately too often happens."

"The accumulation of sand from the northerly outset of the counter or eddy current, bringing with it the deposits from the upper end of the bay, and the adjoining shores, is, as might naturally have been expected, considerable; and various measures, such as making openings in the outer piers, to keep up the circulation of the tide, have been attempted without success, and the plan of removing it artificially, by means of excavation, has been resorted to, as the best means of insuring a sufficient depth. The quantity of deposit removed annually in this mode, and carried away by lighters, amounts to 7,020 tons."

"The defects therefore of the present harbour, from what has been said above, may be briefly summed up under the following heads:—

"First. Difficulty of entrance, and want of tranquillity during storms.

"These in any case, but particularly in an asylum harbour, form most important objections.

"Secondly. Deficiency in depth of water.

"This is very objectionable, both with reference to tidal and low-water harbours, inasmuch as it prevents them from being used at the time they are most required.

"Thirdly. Want of space.

"This is objectionable, inasmuch as it reduces the accommodation for those vessels which find entrance during storms, so that others which make for the harbour, where there is no accommodation for them, frequently receive much injury."

So says Sir John Rennie, as the engineer to Scarborough; and it will be but justice, before we proceed with the other pets of the committee, namely, Whitby and Burlington, to see how the evidence accompanying their report agrees with Sir John's opinion. With regard to depth of water in the harbour generally, we need not trouble ourselves much about it, for all are agreed that Scarborough is a tidal harbour, or one that dries at certain times of

tide. We may therefore content ourselves with Sir John Rennie's statement—"the entrance is four feet above low-water of spring-tides." But we will suppose the harbour fitted with such vessels as can get into it, amounting to fifty, which Captain Hewett* very much doubts to be practicable, even "if they lie aground" by the side of each other, which they must in that case do; but what is to become of those outside? Sir John Rennie says they must trust to their anchors, and Captain Hewett says this is certain destruction in an easterly gale, as every seaman knows. But new works are projected at Scarborough to obviate all this; the entrance is to have a depth of six feet at low-water; the harbour is to contain 170 vessels; and the chairman† of the committee appeals to Capt. Hewett for his opinion, as a practical man, whether "such a scheme could be adopted." Now, if Captain Hewett had been asked whether it were practicable to establish a fishery in the silver pits in the North Sea, he would have been more at home with the question as to locality, weather, &c.; but upon an engineering subject of this kind, he at once admitted the difficulty, although he readily saw that "there is an extensive space between these two piers which is entirely filled up by sand, and is not used as a place of refuge even for boats;" and when asked whether the harbour "would be liable to block up with sand," he answers, "I think it undoubtedly would." So thought Sir John Rennie, when he pointed out in his report the effects of the "northerly outset of the eddy or counter current," which, notwithstanding 7,020 tons of deposit have been removed annually, Scarborough has remained what it is—a tidal harbour. That it is likely to remain so, seems to be the opinion of Mr. G. F. Brown, a ship-owner of Scarborough, whose knowledge of the subject, as it concerns his business, is entitled to attention. Sir John Johnstone‡ asks him, "Then you are of opinion that a great many of the disadvantages of Scarborough harbour at present would be obviated by the new improvement." The answer of Mr. Brown was perhaps unexpected. He briefly replied, "I think all that can be remedied would be remedied; it would still remain a tidal harbour."

But, with regard to the improvements of Scarborough, considered in the light of the benefit they would afford to the passing trade, Mr. Dall, superintendant of the harbour and docks at Leith, affords some curious testimony. The following questions and answers pass between him and Sir John Johnstone:—"Are you acquainted with Scarborough?" *A.* "I am." *Q.* "What is your opinion of it in its present state?" *A.* "In its present state I think it very defec-

* See evidence accompanying report, p. 6. Captain Hewett commands H.M. ship Fairy, and has been employed many years in the North sea.

† Mr. Bethell, member for Yorkshire, East Riding—see p. 4.

‡ Member for Scarborough, and added to the committee, in lieu of Mr. Duncombe, who retired.

tive." *Q.* "Will you state why?" *A.* "The piers are not sufficient to shelter the vessels, and it is also dangerous in a north-east wind." *Q.* "What would be the advantage of the new plan as compared with the old?" *A.* "Vessels could safely remove with a N. E. and a N. N. E. wind into a place of safety; their canvass would carry them into it." But Mr. Hutt, a member of the committee, comes to the point at once, and briefly asks, "Would it be a harbour of refuge at all times, with a long off-shore gale?" Now this was a plain sensible question, and the answer to it just what might have been expected for a tidal harbour. Mr. Dall confirms the opinions previously delivered, by replying, "No, it would not at low-water." Not even with those improvements which are to give Scarborough six feet depth at the entrance at low-water! it will still remain a tidal harbour, and can be no harbour of refuge. But Mr. Dall appears to be of opinion that every part of the harbour will not be safe, as vessels (when it is enlarged) can move themselves into "a place of safety." Surely this is saying little for the intended improvements of the harbour of Scarborough, accessible to small vessels "three to four hours every tide, or, from six to eight hours in the four-and-twenty." Truly Mr. Dall's evidence says but little for Scarborough, although he does admit the position of it to be favourable for a harbour of refuge, if one could be constructed there, "upon a small scale." But Mr. Dall is a wary man, and I shall have occasion to allude to a part of his evidence hereafter, which proves, that, although he appears to wish well to his brother mariners engaged in the eastern trade, he would rather see them take refuge in Leith than any other harbour on the coast, and, considering that, besides being superintendant of the docks there, he is also one of the elder brethren of the Trinity House, he may be right in a nautical, as well as a financial point of view.

As to the intended improvements of Scarborough, it appears there are other opinions regarding them besides those of their projectors. Captain Andrew Walker, commanding a vessel employed by the Carron company, trading from the Forth to London, thinks them altogether unnecessary. He moreover entertains a correct opinion of an asylum harbour, which the committee on harbours of refuge, before whom he was examined, might have availed themselves of. He is asked by the chairman, "Should not an asylum harbour be capable of being safely entered at all times of the tide?" and says very properly, "Yes, that is the only value that I would set upon a harbour upon that coast for wind-bound vessels; that they could get in at all times of the tide, and with plenty of room." This being Captain Walker's opinion on a harbour of refuge, accounts for the following: He is asked by Mr. Hutt, *Q.* "Did you ever think there was any particular reason why a passing toll should be collected for the benefit of Scarborough, and not for other harbours?" *A.* "No, I cannot see any." *Q.* "You

cannot see any special reason?" *A.* "No." *Q.* "You see no reason for improving Scarborough harbour, and not improving the mouth of the Humber and Tyne?" *A.* "No." And in reply to another question, he says, "I set no value upon a harbour that you cannot get into, the worst of weather." Now, this obstinate "no" of Captain Walker, and his contempt for all harbours that are not available at all times as harbours of refuge, was very provoking. Mr. Aaron Chapman, one of the members of the committee, who thinks it "desirable to keep up harbours already made, where the expenditure is so moderate," notwithstanding they are proved to be unavailable at all times; he could have told Captain Walker that the passing toll collected for Scarborough on a cargo of coals, in a vessel of 291 tons, from Sunderland amounts to three shillings and eight pence, which spread over the metropolis, is four pence per annum; while the passing toll collected and spread in the same manner for Whitby, amounts to seven pence halfpenny. "So that the most splendid house in Grosvenor Square* pays for this tax to Whitby 7½d.," and to Scarborough only 4d. Here was ample reason for a committee on harbours of refuge, surely, Captain Walker, why Scarborough should be kept up; first, you know it is a dry harbour. But never mind that, it is a cheap one; although the tax does fall "hardest on London," still those who live in London can afford it. However, such considerations as these were far from Captain Walker's mind; and he, no doubt, was considering the advantage which Scarborough improved harbour would afford as a harbour of refuge, for the safety of seamen and their ships; and his brother seamen thank him for it. But, besides Captain Walker, there are four other masters of vessels whose evidence is recorded in the minutes, and who appear to entertain the same seamanlike opinion of Scarborough harbour. Captain G. Marr, Mr. A. Watson, Mr. M. Anderson, and Mr. W. Anderson—all examined before the committee—do not see any use that Scarborough would be, at which Mr. Hutt, perhaps rather surprised, says, "You do not think that (Scarborough) would be of great use?" "No," they reply, "not Scarborough;" and "why not?" asks Mr. Hutt. "Because it is shallow water, and you are not able to get into it more than four hours in the twenty-four."

It is not a little amusing to consider the conflicting testimony given by different witnesses examined in the evidence. Thus, we have seen that Mr. Dall throws a doubt on a vessel being safe in every part of Scarborough harbour; while Mr. Chodwick, a shipowner of London, says, "I look upon a vessel in Scarborough harbour as safe in all winds," although it is "not available in all winds." But what says Mr. Francis Hill, who has been agent for Lloyd's at Scarborough for twenty-four years? He is asked by the

* See minutes, p. 68.

chairman, "At present Scarborough harbour, during the prevalence of easterly winds, is dangerous?" "Oh, no," says Mr. Hill, "there is nothing to make it dangerous in entering the harbour; there are neither rocks, nor any thing else to take the ships." No narrow entrance, Mr. Hill, of 100 feet—no rocks—no want of water—and the position of the piers the best possible for ships entering? But Mr. Hill is agent for Lloyd's at Scarborough, and there is "nothing like leather." What do Mr. George Booth and Mr. Joseph Straker say to this, when Sir John Johnstone asks them, "Are you not aware that both Scarborough harbour and Bridlington have been the cause of safety to vessels frequently under such circumstances?" alluding to vessels being leaky, &c. "My experience," they each reply, "goes to this—the ships have more frequently received damage there than escaped it." What a pity that there are not more agents for Lloyd's at Scarborough!

This brings me to a part of the report which is so important that I must request your particular attention to it. In the fifth paragraph of this report it is stated, "That it appears to your committee that there is no safe roadstead at Scarborough in an onshore wind; that, although in the present state of the harbour the entrance, in a severe gale of wind on shore, is attended with great danger, yet as many as one hundred and seventeen vessels have taken refuge there during one storm; and that in the course of fifteen years 184 vessels have found refuge there in a disabled state, most of which, but for the existence of the harbour, must have been lost." I quote from the report itself, so that I am sure of being right; but your readers may refer to page 497 of your work, where they will find it. It appears then to be admitted that there is no safe anchorage at Scarborough; and, notwithstanding the evidence of Lloyd's agent there, it is also agreed that the entrance is dangerous. But as a set-off to this, it is gravely said, that "as many as a hundred and seventeen vessels have taken refuge there during one storm." This part of the report appears to be founded on the evidence of Mr. G. F. Brown, who thinks that 250 vessels might find room in Scarborough. But neither Mr. Brown nor the report of the committee tell us the size of these vessels. Captain Hewett thinks that it would contain, improved, not more than fifty or sixty, and he was surprised to find that in its present state it is supposed to hold fifty. No wonder that the chairman was surprised when Mr. Brown said he had seen 117 vessels there. The two harbours together contain 14¼ superficial acres at high-water, which, if they were all available, there would be no doubt ample room; but it is well known that this is not the case; and as Scarborough is not a dock, it would be curious to ascertain how many herring-boats make up this number of 117.

It is generally stated in the report, that in the course of fifteen years 184 vessels have found *refuge in Scarborough, most of which,*

but for the existence of the harbour, must have been lost. In page 29 of the evidence appears the document on which this assertion seems to be grounded, and it is presented by no other person than Mr. Hill, the Lloyd's agent. This gentleman is asked by Sir John Johnstone respecting it as follows:—"Is that a correct return of the number of vessels put into Scarborough harbour, and placed under your care, from April, 1821, to April, 1836, there being no other harbour on the coast which could have afforded them safety under their particular circumstances?" Now this is a straightforward question, and put as favourably for Scarborough as it well could be. Mr. Hill answers, "Yes; numerous other vessels have also received similar advantages." Now let us consider this precious document. The date, name of vessel, master, where belonging, all appear, together with a column of the number of vessels, to save the reader the trouble of casting up such a quantity as 184 vessels. Vessels they are also, no doubt, but their tonnage is kept out of the way as superfluous and unnecessary. But we will admit the whole of this statement, which makes out that 12 vessels annually, for the last fifteen years, have put into Scarborough, and been placed under Mr. Hill's care. The return, however, before us contains another column, headed the "cause of coming into Scarborough piers," in which some curious information appears, that upsets all my calculation. In this column it appears, that of the 184 vessels (without tonnage) placed in Mr. Hill's care during the last fifteen years, eight were "lost," two were "wrecked," and twenty-six were "stranded;" two of the latter being also acknowledged as sunk; and we may guess what became of the rest. So much for Mr. Hill's care, of which he tells us numerous other vessels have also partaken. It is not a subject for levity, otherwise the manner in which Mr. Hill distinguishes the fates of the thirty-six unfortunate vessels by the terms of "lost," "wrecked," and "stranded," is amusing enough; and this, after all, is the "correct return of the number of vessels put into Scarborough harbour, and placed under your care" (Mr. Hill) from April, 1821, to April, 1836. I hope that the vessel which I command may never have the misfortune to fall "under your care" and protection. Why did not Mr. Hill, if he wanted the form of a return, take that of Mr. Mathews, the harbour-master of Lowestoffe. The return made by this gentleman is an honest document, and gives not only the particulars above-mentioned, but the equally important ones of the tonnage and draft of water of each vessel. But Lowestoffe never set up pretensions to be considered as a harbour of refuge; although the return shews that forty-two vessels, averaging about eighty-five tons,* have absolutely taken refuge there since 19th

* The greatest was the Royalist of 217, and the least the Maria Darlington of 22 tons.

Dec. 1835; being more than in three years have gone into Scarborough for the benefit of Mr. Hill's protection.

Now, sir, there stands the document which I have quoted in page 29 of the evidence of the committee; and, allowing that the twenty-six "stranded and sunk" were taken into Scarborough, what became of the eight that were lost, and the two that were wrecked? and yet, with this document before them, bearing these facts on its face, this committee gravely say in their report, that 184 vessels have found refuge in Scarborough, "in a disabled state, most of which, but for the existence of that harbour, must have been lost"! leaving the unwary to infer that those 184 vessels were saved, although "in a disabled state"! It were all very well for Mr. Francis Hill to put forward such a statement, in his zeal to serve Scarborough as Lloyd's agent; and he has acted honestly enough, he has stated the reasons why these vessels came to Scarborough; but it would have been well for the character of the committee to have looked into a document, from whatever quarter it might come, before they founded upon it one of the leading statements of their report. I wish well to Scarborough, and I rejoice to see it thriving as a watering place, and its trade increasing; but when it is put forward as a harbour of refuge, and a heavy sum of money recommended to be expended on it, its pretensions must be sifted; it must undergo the ordeal of inquiry as to its capacity and local circumstances. And whatever may have been the feeling of the committee towards it, as a body of *British senators*, to whom was confided the investigation of a subject of the most important nature to a large part of the trade of this country, it is much to be lamented that the report, professing to contain the result of their inquiries, a document deliberately and dispassionately drawn up, should not, either through inadvertence or otherwise, be *free from the blemish of a grave mistatement*, the tendency of which is to make that appear to be true which their own evidence shews to be not so!!

From the parliamentary returns which accompany the evidence before the committee, it appears that during the last twenty-nine years, or from 1807 to 1835, not less than £68,800. 2s. 7½d. have been levied, in the shape of passing tolls and harbour dues, and expended in improving the tidal harbour of Scarborough. From the evidence, it seems that a new pier is to be constructed, in order to enclose a few more acres of sandy beach, and a little shallow water, which, like the enclosure made by the outer pier, or in fact like all that has hitherto been done at Scarborough, must, from the same existing causes, (so clearly defined by Sir John Rennie,) be liable to be filled up. On this new work the sum of £49,000 is recommended to be laid out, and for which the public are to be saddled, in the shape of that passing toll which eventually falls upon them. Giving the promoters of this project, as I am very

willing to do, every possible advantage, and deciding by the facts advanced by their own engineer, I cannot but come to the conclusion, that it would be far better to allow the present harbour of Scarborough, by those operations of nature continually going forward, to be converted into an esplanade for the recreation of the visitors of that watering-place; and that many valuable lives would be saved by its being no longer held out like a wrecker's torch for the destruction of vessels and their crews.

A British Seaman.

London, 1st Sept. 1836.

A few more Words on Popular Superstitions.

While writing our former article on popular superstitions, we omitted to mention one of the most senseless of them; one which, to say the truth, we really supposed to be fairly laughed out of existence. We have just now, however, been very completely and disagreeably undeceived. An advertisement in one of the leading London papers announced for sale, the other day,—what think you, reader?—"A child's caul, in excellent preservation!"

Yes, in the nineteenth century, when the human mind has made so many and such noble steps towards improvement, and when so many high-hearted and hopeful philanthropists are exerting themselves in every direction to dispel the clouds of ignorance, and to render the mass of mankind happier by rendering them wiser;—yes, even now there are persons weak enough and impudent enough to pretend that sea-going people can insure safety from drowning by the facile act of carrying with them a child's caul!

Even the impudence of imposture must, one would fain suppose, be considerably abashed and held in check by the very great increase which has every where been made to the general store of intelligence, and to the mode as well as the materials for thinking. It is probable, therefore, that as the demand for cauls has decreased, so the impudent price demanded for those utterly worthless articles has been abated. The advertisement to which we have referred affords us no date upon which to form a correct opinion upon that point. No price is named, so the modest advertiser will very likely content himself with the utmost sum he can cajole some silly person to pay; but even within our own remembrance it was by no means uncommon for such a sum as from fifteen to twenty pounds to be demanded.

Seriously to argue upon the insultingly gross imposture which ascribes to the caul the property of averting death by drowning, would be dishonest towards our readers, as uselessly occupying their space; and disrespectful, as implying a supposition of their absolute destitution of common sense. But while the superstition

itself is utterly beneath any thing like refutation, the impudence of giving it publicity, and endeavouring, by means of it, to extort money from the ignorant, calls for serious and severe reprobation. Independent of the baseness of defrauding people of their money, there are two other considerations which call for remark. The credulous and ignorant seaman, who is deluded into expending his money to secure the protection which the caul is alleged to be capable of affording, is of course thoroughly confiding in the assurances made to him by the ignorant or guilty vender. Being thus thoroughly persuaded that the caul will protect him against death by drowning,—is it at all assuming too much to say, that the proverbial gallantry and imprudence of the seaman will be almost inevitably increased to the uttermost recklessness? We think not. We think that, under such circumstances, the seaman would not fail to be thrown completely off his guard; and thus to add, by his own imprudent venturing, and want of proper precaution, to the many perils which, unhappily, are inseparable from his useful and laborious way of winning his means of subsistence. And, most assuredly, should loss of life take place under such circumstances, the victim of imposture on the one hand, and credulous ignorance on the other, would be, morally speaking, as completely *murdered* by the impostor's false representations, as he would be by his knife, did he stab him to the heart! The consideration of even this single fact, which the slightest reflection should suffice to make obvious, ought surely to prevent the conductors of every respectable paper from allowing such advertisements to appear in their columns. There is not one of those conductors who would not shudder with horror at the thought of being instrumental in causing the murder of a fellow-creature by shot or steel; how then can they aid in periling the lives of a whole ship's company by aiding in propagating what *they*, at least, must know to be a falsehood so gross, that it would be absolutely ludicrous, if its mischievous tendency did not render it shocking;—how, we ask, can they lend their aid to such perilous imposture as this, and yet hold themselves guiltless? Certainly they can only do so in utter want of reflection upon the subject. And, then, look at the injury done to the minds of many by this trap set to delude some one! How many thousands of our peasantry there are, for instance, who, seeing such an announcement in a "London paper," would thenceforth be absolutely contemptuous, in their indifference to any efforts at removing so gross an error from their minds. You might as well attempt to persuade them to disbelieve their own existence!

And what must intelligent foreigners think of us? At what a low amount must they rate either our understanding or our honesty? Let us only fancy such an announcement in a respectable London newspaper, read before an assemblage of educated

Germans. How they would despise the intelligence of the English press, on the supposition of the editor having allowed such an announcement to appear in his paper, from being ignorant of its imposture; and how they would turn in very loathing from contemplating the venal subserviency which they would infer from the deliberate circulation of a known falsehood, for the sake of the paltry payment of certain sterling shillings!

We do, in all sincerity and warmth, entreat our contemporaries, whose fine talents no one can hold in higher reverence than we do, to preserve their columns, in future, from being disgraced by any such aid to imposture. As for the people who advertise, we would make extremely short work with them. To sea they should go, on the first stormy day; or, if they declined entrusting their safety to the boasted caul, they should forthwith be allowed to amuse themselves with a twelvemonth's solitary confinement, diversified with bread and water, and as much hard work as would make them remember their punishment during the remainder of their lives.

We have copied the foregoing from that excellent weekly publication, "*Pinnock's Guide to Knowledge*," and have often regretted, that our limited space has prevented us from quoting some of the highly useful and instructive matter which it contains. On this occasion, however, we cannot help repeating the appeal here made to the British seaman, and consider it our duty to second the endeavours of the worthy editor to remove such a scandal from his door. The editor of the "*Guide*" has only stated the fact of the advertisement having appeared, but having ourselves met with one in the Times only last month, we will insert it:—

"To Captains of Ships, and others going to Sea.—To be Sold, a Child's Caul, at a very low price, £10. Apply to —"

The address, of course, here followed; and perhaps the advertiser has sold his caul, which, although it may not be "in excellent preservation," he would, no doubt, persuade the purchaser that it possessed the same qualities as if it had been, and was well worth to him the sum of £10.

Now, we cordially hate such gross deception as this; and we lament, for the character of our fellow-seamen, that in the present enlightened age they should continue to be the dupes of it. Sailors are proverbially said to be superstitious, and in the dark ages which have recently gone by, there was to be found some shadow of an excuse for it. But to whom is the advertisement addressed? why, "to *Captains of Ships;*" and *others* are also included, they being, no doubt, as welcome purchasers. But surely captains of ships are enlightened men! We entirely agree with the sentiments expressed by the editor of the Guide to Knowledge; but whatever he may think about not allowing such advertisements to appear, he may depend, that they always will appear while a

demand for such trash exists. And that it does still exist among captains of ships, must be inferred from the appearance of one now. In a word, we will tell our brother seamen, the "CAPTAINS OF SHIPS," and "OTHERS," too, that if they feel no shame at such an address to them publicly, it is high time they did; and that if they wish such an imputation to be removed from them, they must discontinue the practice of keeping cauls. Thus there will be no purchasers; the cauls will find their way to the place most fit for them; and the advertising columns of our London journals will no longer contain the proofs of a disgraceful superstition among a class of men known for their bravery and generosity, and who ought to be as enlightened as the generality of their fellow-countrymen.

Naval Chronicle.

EXPERIMENTAL SQUADRON.—The squadron under Sir Charles Paget, G. C. H., consisting of the Bellerophon, Vanguard, and Pembroke, accompanied by the Scylla, put to sea from Plymouth on the 14th Sept., to continue the course of experiments on the various qualities of the respective ships. We give the following extract from the *Times*, as conveying a tolerably good idea of their sailing qualities, premising that the Vanguard, as a man-of-war, is doubtless the superior ship:—

Different versions as to different results, are invariably given by different parties, each version favouring the vessel to which the "reporting" party belongs. The officers of the far-famed Vanguard "are always in the Vanguard ahead upon all occasions—to windward of every wake. The ship too behaves like a lady, and though sometimes, when 'going large,' rolls 'deep' as a drunken lord; is always, when sailing by the wind, as stiff as a steeple, and as steady as a church." Those of the Bellerophon assert that "the *Billy-ruffin* is the best of the bunch; that though a *leetle crank*, for want of a *leetle* more beam, still, when blowing fresh on a bowline, she fore-reaches on the broad-beamed Vanguard, and could always cross her, if permitted to tack." Then the people of the Pembroke aver, that "a better ship for her size never stood up to her sticks; that did she only possess the beam of the Vanguard, and the length of the Billy-ruffin, she would beat both by, or large, take the lead of all, and out-carry every other craft in commission." Again, the heroes of the Hercules declare, "that if the ship had but clean copper, and less ballast, she would walk in the wind's eye of the fleetest of the fleet, and, instead of looking small when 'going large,' would be sure, in the event of a 'general chase,' to be foremost in fight, and 'first in for the brush.'"

It will be time to devote more attention to this subject when the

official report is before us. But it is stated that the Scylla, 16, built as a brig, and rigged as a ship, beats the whole squadron.

MOVEMENTS OF H.M. SHIPS IN COMMISSION—*At Home.*—Since our last, the Comus, 18, Com. W. P. Hamilton, has been paid off, and the following vessels commissioned:—Dolphin, 10, Lieut. Com. J. L. Roberts; and the Harlequin, 16, Com. J. E. Erskine, at Sheerness: the Volcano, steam-vessel, Lieut. Com. W. M'Ilwaine; and the Conway, 28, Capt. C. R. Drinkwater. The Bonetta, 10, Lieut. Com. H. P. Deschamps, sailed on the 31st July for the Cape; the Buffalo, Capt. J. Hindmarsh, on the 4th August, for Australia; the Imogene, 28, Captain H. W. Bruce, for South America; the Madagascar, 46, Commodore Sir John Peyton, on the 15th Sept. for the West Indies; and the Fairlie, with His Excellency Governor Sir John Franklin, attended by his private secretary, Captain Maconochie, R.N., and Lieut. Burnett, R.N. as Nautical Surveyor, sailed on the 29th of August for Van Diemen Land.

LAUNCH OF THE DON JUAN.—A steam-ship of the first class, intended for the service of the Peninsular Steam-Navigation Company, was launched on the 10th Sept. from Messrs. Fletcher and Fearnall's dockyard at Limehouse. The Baron de Moncorvo, the Portuguese ambassador, with his lady, attended the ceremony, the Baroness giving the name in the usual form to the vessel, which is called the Don Juan, in honour of M. Mendizabal, the Spanish Minister. After the launch, the company partook of an excellent cold collation at Lovegrove's, the West India Tavern, Blackwall. This is the second new steam-vessel which has been built for this company, and, when at sea, will make the sixth engaged in their service. All of them are remarkably well appointed, and the Iberia, which is just ready to commence working, is fitted up in a truly splendid manner. This undertaking is worthy of the special notice of the public, for the rapid improvement, or rather complete reform, it has brought about in the communications with Spain and Portugal; and being conducted by a few men of property, who have associated for the purpose, it has assumed altogether a trading character, and has never become a subject of speculation, or even been known at the Stock-Exchange. The present line of operations by this company embraces the whole coast of the peninsula, from Corunna to Cadiz and Malaga; and it is not unlikely, if the plan of a steam-communication with India by way of Egypt is brought to bear, that they will form the connecting link with Alexandria, and greatly lessen the cost of such an undertaking, by confining the expense to the smaller class of vessels which are required for the navigation of the Mediterranean. Another service this company will probably render to the public is, that of over-

throwing the clumsy and inefficient system of the Lisbon packets from Falmouth, which can barely maintain themselves now, and cannot long stand under such competition. A negotiation is already on foot for making over to them the conveyance of the mails. As a private undertaking, it is almost without parallel for the magnitude of it; and it is a striking example of the spirit and enterprise by which British merchants are distinguished.—*Times.*

Royal Naval School.—We have perused the address of the head-master of this establishment to the council in June last, and the reports of the professors by whom the students were examined. Nothing can be more satisfactory than these documents, or can tend to raise its already well-established reputation; and we strongly recommend them to the attention of those who would desire to see the school extended as it should be. By an advertisement in one of our late numbers, our readers will have observed that a building fund has been commenced, which we are glad to find is gradually increasing; and the last addition we have heard of to it is the donation of £100 from Admiral Sir Isaac Coffin, being the second of the same amount given by this officer. The following letter, by which it was accompanied, deserves to be read; it is an appeal which needs no comment from us now, whatever it may hereafter:—

To the Editor of the Naval and Military Gazette.

"Cheltenham, 7th Sept., 1836.

"Mr. Editor,—I should sooner have replied to your call for a subscription to the intended building for a naval school, but that my pocket has been empty. The moment my half-pay is received, you shall have a remittance for 100*l.* on Messrs. Coutts and Co.

"When Vice-President of the Institution, thinking the nobility of this country held in *grateful* remembrance the aid afforded them last war in retaining their titles and estates by the naval force, I addressed a letter to *all* the dukes in England and Scotland, soliciting their kind attention to the institution. *Not one* of these potent nobles condescended to notice my application, except the duke of Bedford, who sent me fifty guineas. Being personally acquainted with the dukes of Norfolk, Cleveland, and Northumberland, I applied a second time, asking relief for the orphans of us poor mariners. No answer followed, and I gave up the plan of obtaining assistance from those who, while imminent danger was staring them in the face, were incessantly thanking in parliament the navy for their heroic deeds, and seem now to have forgot altogether that we were nearly invaded by one of the ablest Generals of the age, who, had he once landed his Army, would have been in London and Westminister in a week, plundering both; and though he might have been eventually subdued, yet, in the mean time, every man acquainted with military affairs knows what would have happened. Now, who prevented this disaster? *The navy alone*, under Nelson, Sir Sydney Smith, and the immortal Owen,—so called by the seamen from commanding *L'Immortalité*. The Channel force once subdued, England would soon have been a prey to the invaders; but we had then a *firm* board of Admiralty under Earl Spencer and the heroic Earl St. Vincent, who singled out officers adequate to the perform-

ance of the most arduous duties. And here I would advise the nobility and gentry of the United Kingdom to follow the example of our benevolent King; he is a father to the navy, and knows its value well. He has never blasted our fair fame by calling us a *dead weight*, as a certain chattering Scot has done in the House of Commons, whose origin is as obscure as Shem who came out of Noah's Ark.

It may be asked why I stand forth as the champion of the British Navy, when there are so many others who have superior claims, silent. I humbly add, having 63 *years* been in the service, (10 of which, from 1773 to 1783, I was constantly employed,) having served under the following admirals:—John Montagu, Edwards, Arbuthnot, Lord Graves, Digby, Rodney, Hood, Rowley, Roddam, Cosby, Sir P. Parker, R. Cotton, Sir T. Wallace, Sawyer, and Hughes, and being nearly at the head of the list of Admirals, give me a right to advocate the interest of the service in which I have had such good fortune. *Exploits* I have none to boast of. My associates, Nelson, Exmouth, and Collingwood, would testify my unabated zeal for the service, were they now living. Those who remember me at Lisbon, Corsica, Minorca, Halifax, and Sheerness, will, I trust, give me credit for unabated activity. When my flag was up at Portsmouth for four years, I did my best, under my invaluable friend, the late Sir George Montagu, whose father brought me into the service. I have endeavoured to follow the example they set me. Finally, before I am placed under the sod, I shall endeavour to do all in my power to advance the interests of the Naval School.

"I am, Sir, your humble servant,

"ISAAC COFFIN, Admiral.

The Hon. Lady Craven has generously presented the fine yacht belonging to her deceased husband, with all its elegant fittings, bedding, and all other stores, boats, &c., to the captain and mate, to compensate them in some slight degree for the loss of their generous master.—*Southampton Advertiser.*

FALMOUTH PACKETS.—The Lisbon mails, which have of late years been conveyed by men-of-war brigs, are now to be taken by the regular packets, the number of which is being increased. A portion of them will carry the Lisbon mails regularly for three months, and then be succeeded by others.—*Ibid.*

ERECTION OF AN ALMSHOUSE FOR SEAMEN.—Mr. Richard Wilson, of Scarborough, with a spirit truly worthy of imitation, is building, at his own expense, fourteen almshouses for old seamen, in the ground adjoining Nesfield brewery.—*Hull Packet.* Why are not these almshouses more general in this maritime country?—ED. N. M.

ST. PETERSBURGH, Aug. 27.—An interesting ceremony took place at Moscow on the 4th of this month. The famous bell, the largest and handsomest in the world, was raised from the ground, where it had long lain. It was cast in 1733, by order of the Empress Anne, by Michael Motoren, a Russian metal-founder. Its height is 21 feet; its diameter, 23 feet: its weight, 12,000 poods, 480,000lbs. (432,000lb. English weight.) The beauty of the form, the bas-reliefs with which it is adorned, the value of the metal, which is a composition of gold, silver, and copper,

render it remarkable as showing the advanced state of the art of casting in metal in Russia at that early period. It was raised by a very ingenious contrivance of M. Montferrand, and is placed for the present on a pedestal.—*Hamburgh paper.*

THE TIGRIS.—We learn by advices, by way of Alexandria, from his Majesty's Consul at Alexandretta, that her hull has been recovered. She was found with her keel upwards a few days after the accident, without having suffered material damage. The last accounts from Col. Chesney state the expedition was doing well.

NEW ORDER IN COUNCIL.—In any civil appointment after the 15th of July, 1836, no further time served by those who have held and are still holding their appointments shall be allowed to increase their retirement. And no naval officer appointed subsequently to the 16th of July, 1836, shall be allowed any retirement until he has served five years; then, if he does not continue to hold his situation, he will revert to his half-pay, with an addition of 1s. per diem. But although every appointment issued now is during pleasure, and five years is named as the maximum for the addition of 1s. per day to his half-pay, instead of his retirement as formerly, it by no means follows, nor is it meant to be so understood, that an officer who has held an appointment for five years must, as a matter of course, vacate; he will, if found effective and efficient, be re-appointed.

A notice has been given to all naval officers holding civil appointments, that they are to hold their situations for five years only; but they will be eligible for re-appointment. If put on half-pay, they will be entitled to one shilling extra per diem, but superannuations as heretofore, are to be discontinued to such officers.

THE NAVY AND MERCHANT SERVICES.—The number of men that entered the navy from July 1, 1834, to June 30, 1836, who had previously served in king's ships, was 1673, and of boys, 1163; of men who entered the navy for the first time, 5638; of boys, 560. Died in hospital, 65 men and 6 boys; died on board of ship, 233 men and 9 boys. Discharged with disgrace, 118. Pensioned as invalids, 129 men and 7 boys. Pensioned for long service, 213. The number of men that entered the navy from 1st July, 1835, to 30th June, 1836, who had previously served in king's ships was 1165; and of boys, 934; of men who had entered the navy for the first time, 3935; and of boys, 384. Died in hospital, 63 men and 11 boys; died on board of ship, 166 men and 20 boys. Discharged with disgrace, 63. Pensioned as invalids, 241 men and 4 boys. Pensioned for long service, 260.

The number of seamen in the merchant service of the United Kingdom, made up prior to the passing of the 5th and 6th William IV., was 138,265. The number of seamen registered up to the same period was 78,239. The number of apprentices in the merchant service to the same time 5429. The number of apprentices which, according to the 6th Geo. IV., ought, in proportion to tonnage, to have belonged to the merchant service, was 13,605 at the passing of the 5th and 6th William IV. The number of apprentices whose indentures have been registered since the passing of the same act is 7853. This number, added to 5429 before mentioned, makes the total number of apprentices registered up to the present time, 13,282.

YACHTS.—The Royal Yacht Squadron is, we are sorry to say, near a close, both Commodore and Vice-Commodore, having sold their yachts; the Duke of Norfolk also has offered his yacht Arundel for sale; and further, the Secretary has given notice to Mr. Goodwin, the proprietor of the Club House, to quit as soon as the lease is out, which will be about next July, the tenor of the lease being a twelve months' notice from either party.

ERICSSON'S LEAD.—His Majesty's brig Partridge, Lieut. Bisson, sailed from Plymouth on the 12th Sept. with Captain Ericsson, to try in Channel soundings and in deep water, beyond the Bay of Biscay, a new sounding machine which Captain E. has invented, and a description of which was given in our July number. The Partridge is expected afterwards to join the squadron.

MOUNT'S BAY BREAKWATER.—In our last number we alluded to this noble undertaking, as having received the special patronage of their Royal Highnesses the Duchess of Kent and the Princess Victoria, and we intended, in this number, to have called the attention of our readers to it more fully than our present limits will permit. We must therefore content ourselves now in pointing it out especially as one of the most important projects now going forward; one well becoming our character as a maritime nation—and one which should therefore meet with the firm and immediate support of all who wish to protect the lives of seamen, and to advance the prosperity of their country.

LIGHT ON CAPE SPEAR, NEWFOUNDLAND.—Extract of a letter from the agent of Lloyd's at St. John's, Newfoundland, dated August 24, 1836:—

"We have this day received from the Secretary to the Commissioners of Lighthouses in the island a communication to the following effect:—'That a light will be exhibited in the lighthouse recently erected on Cape Spear, on the evening of Thursday, the

1st of September next, and henceforth continued every night from sunset to sunrise. The character of the light, which will be seen at an elevation of 275 feet above the level of the sea, will be that of a powerful revolving light, shewing a brilliant flash at regulated intervals of one minute. The stationary light on Fort Amherst, at the entrance of this port, will be continued as heretofore."

SAN SEBASTIAN.—The following is an important notice to vessels frequenting the harbour of San Sebastian, on the north coast of Spain. It is translated from the Bolletin de Guipuzcoa of the 25th of August last, transmitted in an official letter from Commodore Lord John Hay, in the Castor:—

"The light of Port San Sebastian hitherto on the summit of Mount Igueldo has been discontinued, and a new one on the opposite side of the port has been established in its stead.

"The new light is situated on Mount Orgullo, nearly a mile to the eastward of the old one, in latitude 43° 19′ 33″ N., and longitude 1° 54′ 19″ W.

"It is a fixed light, without eclipses, 205 feet above the level of the sea, and may be seen on a dark night distant about fifteen miles.

"It will be lighted henceforward during the winter months, from the 14th Sept. to the 3d of May, and was first lit on the 14th of the present month. "JOSE DE RESUETA.

"*San Sebastian, 15th Aug.* 1836."

Navigators will therefore see that the light is thus to be kept on the *larboard* hand, instead of the *starboard*, when entering the port.

A RETURN OF THE NAMES OF ALL MATES AND MIDSHIPMEN, now actually serving, who have passed their Examination for Lieutenants previous to the 1st of January, 1835, and distinguishing the year in which they were examined.

1816.—G. Matthews.
1817.—T. S. Coppinger.
1819.—J. B. Kooystra; M. Peppin; W. Robinson; J.W. M. Wills.
1820.—P. B. Stagg.
1821.—L. F. A. Newman.
1822.—J. L. Carthew; W. M. Shearman.
1823.—F. Drew; R. F. Lewis.
1824.—F. W. Foote; W. Reid; H. M. Tylden.
1825.—J. Allen; E. May; H. Booth; C. G. Wilkey.
1826.—R. Duncan; W. Ellis; B. Jeffery; E. B. Penny; J. C. Robinson; H. Wall; G. W. Wilkinson; J. F. L. Wood.
1827.—J. C. Bynow; A. Derbyshire; J. H. Downes; G. B. Hooke; A. H. Ingram; W. C. Lindsay; J. Loury; F. Maule; R. B. Miller; C. G. Phillips; D. Reid; R. Symons.

1828.—W. Coles; W. T. Disney; H. Dumaresq; H. C. Hawkins; P. A. Helpman; F. Higginson; T. Lewis; V. A. Massingbird; W. T. Newenham; J. H. Norcock; R. O'Brien; J. Sibbald; P. B. Stewart.

1829.—W. Austin; E. Barnard; J. F. Carroll; W. V. Collins; A. Crawley; R. R. T. Davies; J. S. A. Dennis; S. Fowell; J. H. Genneys; A. G. Glascott; G.Gore; H. B. Gray; J. F. Guyon; R. S. Hewlet; J. Hoseason; E. M. Hogg; R. K. Jenkins; H. S. Laye; J. B. Massie; D. R. B. Mapleton; J. A. Mends; W. B. Moneypenny; W. Morris; C. W. R. Price; H. Rea; J. A. A. Riddell; J. G. Robins; C. Starmer; H. Stoyle; W. T. Standridge; R. W. Suckling; J. S. Tetley; R. J. Furner; W. Webster; G. W. Winlow; G. B. Williams; J. V. Willyams.

1830.—G. Curtis Adams; James Adams; Whaley Armitage; G.W. Bentham; W. H. Bridge; D. A. Buchan; F. Byron; W. Campbell; J. Compton; H. L. Cox; W. Coffin; W. Crawford (*a*); W. P. Crozier; M. De Courcy; J. Dunsterville; R. J. W. Dunlop; R. Ellis; T. Etheridge; W. F. Fead; J. G. Harrison; G. Harper; J. E. Katon; G. Kenyon; A. Kennedy; J. B. Kinsman; O. P. Knott; W. Lilley; H. Lincoln; R. J. L. M'Clure; T. H. Mason; A. C. May; W. B. Miller; J. G. Moore; H. G. Morris; A. Murray; A. M. Noad; M. Nolloth; C. D. O'Brien; C. G. E. Patey; J. E. Patterson; C. C. Powell; J. Ramsay; H. J. Robins; R. M. Robertson; T. C. Ross; W. Rowlatt; H. D. Rogers; H. T. Ryves; S. F. Short; J. A. Shears; G. J. R. Snow; P. Somerville; R. Studdert; J. L. Stokes; Hon. C. St.Clair; T. H. Stevens; J.J.C.H. Tracey; C. B. Warren.

1831.—T. Adge Aldridge; John Allen; Vashon Baker; R. J. Bevians; Nevinson D. Blennerhasset; J. Borlase (*a*); B. H. Bunce; C. J. Burslem; P. Campbell; C. R. Carter; J. C. Caffin; J. Clavell; J. W. Conway; C. F. Collett; R. Curtis; J. Daly; G. B. Dewes; C. F. Doyle; W. H. Dobie; J. W. Drake; Don P. Dumaresq; M. Falcon; J. O. Freeland; F. W. Gambier; E. A. Glynn; A. S. Gordon; J. S. W. Grandy; G. A. Hire; J. B. Hockley; C. L. Hockin; E. L. Hoblyn; C. Jackson; G. Johnston; R. C. Kevern; M. Knox; J. Lodwick; N. E. J. Locker; F. Lowe; J. M'Dougal; J. Maling; F. W. Mant; A. Millersh; W. Need; C. F. Newland; T. H. Page; G. G. Philipps; C. J. Postle; E. R. Power; C. G. Rigge; W. F. Robinson; F. Scott; S. Stirling; T. B. Stewart; J. Strettell; F. H. Stanfell; E. Tatham; J. Watson; W. H. Walters; G. E. Walford; R. Williams; J. Wood.

1832.—Zackery Andrew; R. L. Atkinson; H. E. B. Bennett; J. M. Boyd; J. Borlase (*b*); W. H. Broad; J. H. Bridges; C. Bul-

len; T. B. Christopher; E. R. Connor; J. H. Craig; C. G. Crawley; O. Cumberland; D. B. Dawes; E. C. T. D'Encourt; J. Fellowes; J. J. B. E. Frere; W. Greet; P. Gubbins; E. H. Gunnell; F. H. Harper; H. C. Harston; A. Heseltine; T. Head; J. R. C. Helpman; W. J. H. Hutchinson; G. Johnston; O. J. Jones; E. H. Kennet; E. Little; E. Lloyd; J. B. Maddon; S. T. Maddock; W. C. Metcalfe; J. Nourse; M. E. Noble; J. Palmer; R. Pridham; W. W. Pridham; J. E. F. Riske; R. J. Rouse; A. Lansum; E. W. Sanders; T. Sibbald; J. M'Dowall Smith; P. H. Somerville; W. Thorp; G. Westron; W. L. White; R. D. White; R. Wilford; W. C. Wood; J. H. Wodward.

1833.—Henry Ainslie; Philip Aylmer Allen; John Astle; C. Ross Bamber; F. L. Barnard; R. B. Barwell; W. Bligh; G. Blane; F. Bourchier; M. Bourchier; J. P. Branch; C. R. G. Braddyll; C. Y. Campbell; J. Cashman; W. H. Church; F. Church; W. Clayton; J. M. Cooke; H. Croft; W. G. J. Cunningham; A. C. Davies; J. R. Dalyell; G. A. Ellerman; J. C. S. Field; P. Fisher; R. D. Fowler; W. C. Forsyth; J. Gordon; H. L. Griffiths; G. T. Graham; P. W. Hamilton; R. B. Harvey; J. Hancock; E. A. F. Harene; J. Hamilton (*a*); E. Holmes; T. Hodgkinson; J. C. Hughes; W. P. Jamison; G. C. J. Johnson; A. B. Kingston; H. H. Kinsman; C. Knighton; R. T. J. Levinge; L. Maitland; G. Morritt; C. Moore; H. H. N. Mottley; R. S. Moore; F. S. Murray; J. A. Paynter; G. E. Patey; G. Phillpotts; R. Pipon; J. C. Pittman; R. Robertson; E. F. Roberts; B. Sharp; C. F. A. Shadwell; F. Slade; E. C. Smith; R. S. Smith; W. R. Smith; J. Stoddart; J. N. Strange; R. Synge; E. Sympson; E. B. P. Von Donop; B. A. Wake; R. C. Whyte; T. C. O. Whipple; F. Wilson; W. S. Wiseman; S. O. Wooldridge; J. Willcox.

1834.—Herbert G. Austin; H. G. Ayscough; Willen Bailey; H. Bacon; C. J. Balfour; E. K. Barnard; H. W. Baugh; Edwin R. J. Balfour; R. T. Bedford; J. C. Bennet; J. G. Bickford; A. M. Bingham; J. C. Blacket; S. Bradly; L. P. Burrell; W. P. Chapman; B. S. Clarke; H. B. Davis; F. Denison; J. B. Dickson; S. B. Dolling; J. W. Dorville; W. M. W. Douglas; C. Dyke; R. Edwards; J. Elliot; W. A. Fellowes; B. Fox; W. H. Gennys; G. Gifford; A. C. Gladstone; G. E. W. Hammond; B. F. Helpman; F. W. C. Hickey; J. A. Hodgskin; C. E. Hodgkinson; A. Jeffreys; G. B. Jeffreys; C. R. Johnson; F. E. Johnston; J. Irving; J. H. Kay; W. Kendall; W. H. Kennedy; M. Kerr; E. M. Leycester; A. Little; H. Lloyd; D. M. M'Kenzie; E. M. Mathews; G. P. Mends; W. W. Morris; W. Mould; G. J. H. Monro; Sir F. W. Erskine Nicolson; G. Ogle; G. Y. Paterson; F. P. Porteous; J. A. Pritchard; H. Probyn; B. P. Priest; L. de T.

Prevost; S. Reeve; F. E. Rose; A. Royer; W. F. Sanders; J. Sanderson; M. R. Scott; C. F. Schomberg; A. D. Shafto; P. F. Shortland; F. B. Sleeman; J. C. Snell; W. H. Solly; H. Stokes; R. D. Stupart; H. Temple; J. R. Thompson; H. G. Veitch; H. Warren; C. J. Walton; G. G. Wellesley; R. R. Western; R. H. Wharton; H. E. S. Winthorp; A. P. E. Wilmot; A. J. Woodley; W. H. Webb; Alfred Young; B. Young.

THE BRITISH ASSOCIATION.—We have watched the proceedings of the late meeting of this Society at Bristol, with much interest, and regret that our confined limits* preclude the possibility of doing justice to those subjects which would interest our own readers. We shall, however, give such extracts from them as a due regard to their wants will allow, so as not to interfere with other important matters in the pages of the Nautical.

MR. LUBBOCK'S REPORT OF RECENT DISCUSSIONS OF TIDE OBSERVATIONS.—From the discussion of the Liverpool tides by Mr. Dessiou,† (master in the Royal Navy,) he finds the diurnal inequality at Liverpool very considerable. The errors of prediction at Liverpool and London being classified, the result obtained by Mr. Daussy confirmed the influence of atmospheric‡ pressure on the tides. The law of the intervals, when the discussion is instituted with reference to the transit immediately preceding the time of high water, whether at London, Liverpool, or Brest, depends partly upon the phenomena as deducible from Bernouilli's equilibrium theory, and partly upon the law of the intervals between the moon's successive transits. The general conclusion of Mr. Lubbock, from an adequate discussion of tide observations by Mr. Jones and Mr. Russell, is, that the equilibrium theory of Bernouilli satisfies the phenomena nearly, if not quite, within the limits of the errors of the observations, and that it leaves little, if any thing, to be accounted for otherwise.

Professor Whewell observed, that it appeared from Mr. Bunt's calculations (the gentleman engaged in recording the tides at

* We have before now regretted being thus limited, but we are in great hopes of shortly increasing the number of pages of this work without increasing its price. Our subscribers can enable us to do it.—Ed. N.M.

† We have much pleasure in recording our testimony of the laborious exertions of this gentleman on the subject of the tides. It is about six years since this subject, so important to seamen, was taken up by those eminent philosophers, Mr. Lubbock and Professor Whewell; and an immense mass of calculations to prove the various parts of their theories, have been made by Mr. Dessiou, which do infinite credit to this gentleman, and shew him as devoted to the interests of his profession in his later years on shore, as he was in his earlier years afloat.

‡ The question of atmospheric pressure affecting the tides, we believe, was suggested by Mr. W. Walker, Master, R.N. of Plymouth, a short time ago.

Bristol) that though the observed laws of the tide at Bristol might be made to agree with Bernouilli's theory of equilibrium tides, by referring them to a certain anterior transit, so far as the changes due to parallax are concerned; yet that this anterior period is not the same for parallax as for declination; so that there is no one anterior period which gives theoretical tides agreeing with the observed tides: and the Bristol tides do not altogether, at present, appear to confirm the result obtained by Mr. Lubbock from the London tides.

Professor Whewell reported respecting the committee appointed to fix the *relative level of the land and sea*, with a view to determine its permanence. He observed, that the committee had not taken any practical steps for the purpose for which they were appointed, having found difficulties which required consideration; but it was stated, that it was intended to prepare to re-appoint a committee for this purpose, with instructions grounded upon the views at which the members of the committee have arrived, namely—1. To strike level lines for considerable distances along the land; as, for example, from Bristol to Ilfracombe, and from Bristol to Lyme Regis, with great accuracy; the permanence of these two lines (independently of reference to the sea) would determine the permanence of the relative level of the points. 2. To refer the extremities of these lines to the sea at each extremity, the tides at the extremities being of any different amount, the observations would decide whether a level line agrees with low water, mean water, or high water; and, thus, what is the true level of the sea.

Larch Timber.—Some experiments have lately been made at Pembroke Dockyard, to ascertain the relative strength of Larch grown in different parts, but particularly that from the Buccleuch and Athol estates: the latter was proved very superior to any other. Pieces cut from the heart of the stick, four feet long, and four in square, were supported by piles of timber, resting about three inches on each end. To the centre, weights were then hung: some pieces broke with 18 cwt., and the Buccleuch bore 25 cwt. before it gave way. The Athol with 35 cwt. (1 ton 32 quarters), bent so as to form a bow equal to its own thickness (4 in.), and, on a quarter hundred being added, the fibres, 7 or 8 only in number, started, but the wood did not give way, but was so much bent as to slip off its supporters!—*From a correspondent.*

Important to Captains of Ships, especially to those going long voyages.—It is a well-known fact, that the present general custom of cooking on board ship is by piercing the meat in various places with some sharp instrument, and putting it into boiling water. This method invariably lets all the succulent and most

nourishing part of the meat boil out into the water, or *slush*, as it is termed, and thus left hard, dry, and almost indigestible, through which many a sailor gets the scurvy, and the provision merchant gets continual curses heaped upon his head. The slush, which is the perquisite of the cook, is thus rendered more valuable.

To obviate this great and fatal evil, the meat must never on any account be pierced; and instead of being put into boiling water, it must be put into cold water, and gradually and properly boiled. It is impossible to conceive what a difference this will produce, both as regards the comfort and also the health of the crews; and it might be advisable to allow the cook a certain sum in lieu of the slush, to prevent a temptation to this practice. Captains and mates of vessels will do well strictly to enforce this regulation, and provision merchants should cause a direction to the above effect to be written or *printed, and nailed to the head of every provision cask*, that the sailor—the bulwark of our country, and the mainstay of our commerce—may receive the comfort and benefit it is intended to impart. A SAILOR.

London, September, 1836.

SHOAL IN THE PACIFIC OCEAN.—*Caution to Navigators.*

We lose no time in laying the following account of a dangerous shoal, before our readers:—

To the Editor of the Nautical Magazine.

SIR,—The great probability of ships passing more frequently than they have hitherto done, through those seas lying to the eastward of New Holland, has induced me to give publicity, through your excellent Magazine, to the exact position of a dangerous shoal, which I fell in with on the night of the 16th of March, 1835, and not then exhibited on any chart. Running with the bark Betsy, of Leith, at the rate of five knots per hour, to the westward, (wind being easterly,) for the passage through D'Entrecasteaux reefs to the north of New Caledonia from the New Hebrides, I very fortunately saw the breakers in time to save my own ship, with another but a little distance astern, both of considerable value. We could with difficulty clear the shoal, hauling upon a wind, the currents setting so strong in their direction. When clear, I hove to, and ascertained the latitude and longitude by meridian altitudes of the stars, and good sets of distances east and west of the moon, corroborating the latitude by Lynn's Horary Tables, after the sun arose. The N.E. extreme lies in lat. 18° 32′ S. and long. 164° 20′ E. We could not discern any part of the reefs above water, though I should think just verging, their extent appeared about eight miles S.E. and N.W. The east side steep to, but the western side seemed to have shallow water running off to the westward nearly eight miles from the north-west end. In moderate weather the breakers will give but little warn-

ing, consequently ships should be cautious how they approach this latitude and longitude.

This shoal, no doubt, is of the coralline formation, as I have seen these seas extensively covered with the mollusca tribe, collected here by the constant currents, and pent up by the barrier reefs of New Holland and New Guinea.

I am, sir, your obedient servant,

PETER PETRIE, Lieut. R.N.

UNITED STATES OBSERVATORY.—The following passage on the deficiency of an observatory appears in the report of the Secretary of the Navy in January, 1836:—"A national observatory, although not immediately necessary to the defence of our country, is remotely so; and, considered with reference to the bearing it would have upon our navy, our commerce, and scientific pursuits, it assumes an importance worthy the consideration of Congress.

"It is hardly to be doubted, that we shall at some future period make such an establishment, and I will venture to express an opinion, that no time can be more propitious for such an undertaking than the present. It would not be attended with any great expense. It is necessary now, to keep our maps and charts, to regulate our chronometers, and to preserve all mathematical and philosophical instruments required for the naval service; and buildings are necessary for these purposes.

"These duties would properly devolve upon the superintendant of an observatory, and the buildings necessary to such an establishment would be amply sufficient for the preservation of our maps, charts, and instruments."

VOYAGE OF H.M.S. COVE, CAPTAIN JAMES ROSS, IN SEARCH OF THE LOST WHALERS.*

WHILE the Cove was at Stromness on her outward course, Captain Ross received intimation from the Admiralty of the arrival of the Abram, of Hull, and of her having drifted southward with the pack to the 54th degree of north latitude. In consequence of this information, he deemed it expedient to depart to a certain extent from the instructions of the Admiralty. Accordingly, he made for the pack-edge in the above-mentioned latitude, but, owing to the unfavourable weather, he did not succeed in gaining it until the 7th of April. Between that date and the 27th of May, Captain Ross made a careful examination of the main pack-edge between the 54th and 65th degree of latitude, and failing to discover any traces of the Lady Jane or William Torr, he stood over to Holsteinburgh, for the purpose of falling in with the bomb-vessel which he expected to join him there on the 1st of June. Here the Cove remained for some

* See p. 116, stating his departure on the 6th of January from Hull; and p. 241 for the arrival of the Lady Jane.

days, obtaining a supply of water, and completing the requisite repairs. The Undaunted, of Kirkcaldy, had previously announced to Captain Ross the arrival of the Lady Jane in England; but of the William Torr* no tidings could be procured. The Terror bomb-vessel not appearing,† the Cove proceeded to Whale-fish Islands, the last-appointed rendezvous for the Terror, and arrived there on the 14th of June. On the 19th of the same month the commander received a communication from the Admiralty, intimating, that in consequence of the arrival of the Abram, and of a statement made by Mr. William Tather, master of the Jane, the sailing of the Terror had been countermanded as unnecessary.

Captain Ross was directed to proceed homewards, after making every practicable endeavour to relieve the William Torr, in the quarter where he might consider her most likely to be found, on receiving the additional information. Though regretting that he had not the means of penetrating to the west land of Baffin's Bay, the commander, guided by the statement of Mr. Tather—that the William Torr was seen on the 16th of October, 45 miles S.E. of Cape Searle, and drifting to the southward—deemed it his duty to advance to the quarter thus decidedly indicated, and thence endeavour to prosecute his inquiries at one of the northern settlements on the coast of Labrador. Before his departure he proceeded through the Waygatz Strait, for the purpose of communicating with the whaling ships to the northward. On the 1st of July he reached Fore-Island Point, in lat. 70. 40. N., and long. 67 W., where he found about fifty vessels detained by the ice. Repassing the Waygatz Strait, he bore to the westward, and reached the packing, lat. 69. N., and long. 57½ W., and gained the spot where the William Torr was alleged to have been last seen, on the 13th of July. A careful examination of the pack was made at this place. On the 14th of July the Cove fell in with three whalers, the Eclipse, Commerce, and Resolution, the masters of which vessels, as well as those to the northward, gave the most solemn assurances that, although they believed the William Torr to be to the southward, still they would use their best endeavours to examine the whole of the west land for the crew. In the face of many difficulties arising from foggy weather and heavy south-easterly swells, Captain J. Ross persevered in exploring the pack to the southward. His progress was impeded

* The only tidings received of this unfortunate ship appear to be the following extract from the *Hull Packet*.—"THE WILLIAM TORR, GREENOCK, August 27. The Antilles arrived here to-day from Venice and Trieste, sailed from the latter port on the 25th of June, and got down the Adriatic in four days; had afterwards much calm weather in the Mediterranean, and passed Gibraltar four weeks ago. On the 17th ult., lat. 46 deg. 11m. N., long. 170 deg 30m W., picked up a large oil cask, branded 'William Torr,' supposed to belong to the missing whaler."

† This vessel was to have been taken out by Commander Belcher, R.N.

by a barrier of heavy and extensive floes drifting to the southward, at a distance of from 50 to 70 miles from the land.

After many ineffectual attempts to penetrate this barrier, he at last succeeded in again entering the pack, and in advancing through it to the settlement of Okkah, in lat. 57½ N., where it was hoped that the missionaries of the *Unitas Fratrum*, resident at that place, would be able to communicate some information respecting the William Torr. No account, however, of that vessel, or the crew, could be given by the missionaries, who declared that it was impossible for any ship, or the crew of any ship, to have approached that shore to the north or south, within three hundred miles of the settlement, without their being speedily apprized of the fact. Under all the circumstances—having closely examined the pack from the 54th to the 69th degree of north latitude—it appeared to Captain Ross that all that the vessel under his command was capable of effecting had been accomplished. Presuming upon the correctness of the information furnished by Mr. Tather, he feared that the William Torr, if she had not returned to England, had been wrecked in the pack; but he still indulged the hope that she had wintered on the west coast of Baffin's Bay, in which case her crew would most certainly have been discovered by some of the whale ships.

The Cove weighed anchor on the 4th of August, passed through Pentland Frith on the 19th ult., and arrived in sound condition, and with all hands in perfect health, after a most perilous, and, we grieve to add, an unsuccessful service.

Despatches, containing the above information, having been forwarded to the Lords of the Admiralty by Captain J. C. Ross, immediately upon his arrival, their Lordships have transmitted to him a reply, in which they express their satisfaction at the zeal and judgment displayed by him in the execution of the duty confided to him, as well as at the good conduct and activity of the officers and men under his command.

Records of Wrecks.

THE ATLANTIC, THE URANIA, AND THE CAPE BRETON.—The following account of the wrecks of these vessels on the 29th November, (Nos. 86, 93, and 159, of our table in p. 254, No. 50) is from a Cape paper.

The gale continued on the increase during Wednesday, and assumed all the appearance of a violent black south-easter. The wind shifting occasionally to the southward, and bringing in a most tremendous sea. At about 10 o'clock that night the Atlantic parted from one anchor, and about midnight the other chain snapped, and after hanging on some time by a third small anchor, she came ashore upon the rock opposite M. J. O. Smith's.

Immediately she struck she came right over, the tops of her masts sticking in the sand. One man was washed over the quarter by this shock, and has never been seen since. Capt. Barber and the rest of his crew reached the shore at daylight, by means of a rope which they contrived to pass from the vessel to the shore. It blew awfully that night, and you may imagine what a sea was setting in the next morning.

The other two vessels, the Urania and Cape Breton, rode it out well during the day, but very little hopes were entertained that they would escape. At about eight o'clock last night (Thursday) I looked out, and could perceive that the Urania was evidently dragging. I had not been long on the beach, before the Cape Breton was observed to be broadside on, and it appeared as if she must inevitably come foul of the Urania, and that they must both come together.

She managed, however, to clear her; and having got some canvass up, she seemed to be endeavouring to beat out. This, as afterwards turned out, was only done with the view of bringing her to a better berth, and she was soon seen aground at the bar, at some distance from the shore, opposite Mr. Pullen's house. Had she been deep, she must have become a wreck on the spot, and every soul on board would in all probability have perished; but being fortunately light, a heavy sea swept her off, and brought her again into deep water, and she soon grounded again in a good situation. A line was sent on shore, made fast to a cask, and the crew were hauled to the beach through the water, the captain being the last to leave. This operation had not been long concluded, before it was observed that the Urania was still drifting, and she continued to drag her anchor into the very surf. It was a terrible sight to see her holding on in the middle of the highest breakers, which were striking her with most appalling violence. Under such circumstances, no tackle could hold out long, and about midnight she grounded, opposite to Howse's slaughter-house. One lad swam ashore immediately, and a second in the course of the night; the remainder of the crew were all rescued this morning. In the night the Atlantic went to pieces, and this morning (Friday) a few planks, a mast, and some rigging, are all that hold together.'

Thus our Bay has been cleared of shipping, by one of the most violent south-easters ever witnessed in the memory of the oldest inhabitant. It is remarkable, not only for the violence of the gale, and the overwhelming roughness of the sea, but also for its unusual duration, having only begun to moderate about noon this day. Poor Captain Barber has lost almost every thing. Fortunately there was very little cargo in any of the vessels, and great part of that will be saved. Heugh had about 8000lbs, of tallow, and some aloes in the Atlantic, and Wiggetts a lot of hides. The

Urania had little else but iron. In the Cape Breton there was some inward and outward cargo, a portion of which is already saved. It is doubtful whether the Urania and Cape Breton will go to pieces, but of course they are fit for nothing but to break up. It is the opinion of all the nautical men here, that had the Romney not have sailed, as she did, before the commencement of the gale, that she would inevitably have shared the same fate as the others, and in that case every soul on board must have perished, as she would have grounded at too great a distance from the shore to render any assistance therefrom at all practicable.

Tuesday, 6th.—The harbour-master reports:—"The Atlantic and Cape Breton have gone to pieces; part of the cargo that was on board has been saved. The Urania is also condemned, but still holds together."

We need not add anything to this melancholy detail, except to remark, that for want of a jetty it was utterly impossible to afford any assistance to the vessels in distress, until close on the shore, and their destruction had become inevitable.

We are glad to say that the storm has now abated, and that the face of the country presents a most beautiful appearance. The standing crops will doubtless be greatly improved by the abundant moisture; and it will also give, aided by the usual showers, an abundance of pasturage for the ensuing summer.—*Graham's Town Journal.*

THE EDINBURGH.—The following account of the loss of this ship is from the Sydney papers. She left Sydney roads on the morning of the 18th of March, manned with a crew of 12 persons, including the captain. There were also two cabin passengers on board. After having been at sea for 12 days, she was discovered to be on fire, produced by the ignition of the wool. All attempts to save the vessel and cargo proving hopeless, the captain ordered the long-boat to be got ready, into which the crew and passengers immediately got, taking with them a chronometer, sextant, and chart; they also provided themselves with two casks of water, a quantity of biscuit, and 16 or 18 pieces of pork. The fore-topmast stay-sail, which they had cut down to rig the boat, and a studding-sail boom, served for a mast.

The crew clung to the burning vessel up to the last moment they could do so with safety. When they took to the boat the flames had appeared above deck, bursting from the aft hatches, and spreading in all directions over the ship. At this time the sea was getting high, and the wind blowing fresh. When about three miles astern of the burning ship, they saw her main and mizen masts go overboard about the same time. She gradually burnt down to the water's edge, as she receded from the boat towards the verge of the horizon.

The crew on board of the boat fared tolerably well from the day of the calamity until the 3d of April. They had two meals a day, each meal consisting of one half pint of water, a biscuit, and a small slice of pork. Up to this time the weather was moderately calm. On the 3d of April, however, a sudden change took place—a heavy gale succeeded—the sea broke over the boat with tremendous violence, and filled her. When by great exertion they got the boat righted again, they found to their inexpressible regret that the whole of their stock of bread had been saturated with the salt water, and rendered unfit for use. After a variety of hair-breadth escapes, which are detailed in the Sydney papers with great minuteness, during which they had an adventure with a huge shark (which they succeeded in capturing, and found its carcase very acceptable food after a long confinement to salt provisions,) they reached a place called Woolongong, near Sydney, their numbers undiminished, after having been exposed in an open boat to the mercy of the elements for the period of 14 days and a half.

It is stated that no question can exist of the calamity having arisen from the ignition of the wool. The cargo consisted of wool, oil, and cedar. The oil was stowed in the forepart of the ship, there being one tier aft the foremast and in contact with it, and no where was there wool within a foot of an oil cask. Aft the oil there was cedar in the bottom of the ship, and wool on the top of it. The fire commenced between the main and the mizen masts. It is supposed to have originated in some bales of wool from the interior, which had not, as is customary in such cases, been repacked at Sidney.

THE THOMAS MILLIDGE. (No.339.) By the St. John's (N.B.) "*Observer*," it appears this ship was just returning from her first voyage of 21 months, with 1000 barrels black and 400 of sperm oil, a number of tons of whalebone, &c, within a few miles of her destined port, run on the rocks near Musquash in a very dense fog, and the wind strong from S. W. The crew consisted of 32 individuals, who, by the loss of the cargo, (from the proceeds of which their pay was to be derived, they being, as is customary in whaling ships, on shares,) which was uninsured, are truly in a pitiable state, many of them having likewise lost their clothes, and stand in need of the generous sympathy and assistance of the public.

THE OTTAWA (No. 307,) ZEPHYR, AND COLUMBUS.—The following is from a Quebec paper. The hull of the Ottawa, as it now lies, or did lie, on the Island of Anticosti, was sold on Friday last, for £16, to Wm. Stevenson, Esq. who also purchased the hull of the Zephyr, for £11. The cargo of the Ottawa was sold for £5. 9s. 6d. and her rigging on the beach brought £7. 10s.

The cargo of the Columbus was sold for £2. 10s. and that of the Zephyr, for £8.

[We consider this a confirmation of our records. The Columbus is No. 182, and the Zephyr, No. 240, of our table in page 318.]

The Caledonia, (No. 317) when about 14 miles from Berwick, filled with water, which had covered the ballast before the crew were aware. Pumping was out of the question. The crew, eight in number, took out a boat twelve feet long, into which they entered in such haste that four of them had not time to put their jackets on. They secured two oars, a bucket, a small cask, and one biscuit (all the provision they saved) and no clothing except that in which they stood. They saw their ship go down in about a quarter of an hour after they left her. They filled the bucket, and swung it out of the boat's stem by the painter, to act as an anchor, and prevent them drifting out to sea faster than they could avoid. They remained in the boat about 12 hours, and had drifted 35 miles, when on Monday morning they descried a ship, and one of them stood up with a red handkerchief as a signal of distress, which was discovered by the person on watch on board the ship, which proved to be the Quebec, of Glasgow; but they were not seen until the ship had passed the boat. It was blowing a stiff breeze from the W.N.W., and the crew of the Quebec, which saw them, had by the captain's orders just taken in a third reef. On perceiving the boat, they immediately took in sail, tacked about, and after two hours' endeavour succeeded in recovering the men, but not the boat, which the roughness of the sea would not permit them to do. The poor fellows were very much exhausted, and had not power to make much effort to reach the ship.—*Hull paper.*

The Premier, (No. 334.) This ship put into Ascension on the 3d June, to stop a leak in her bows, which having completed, she got under weigh on the 29th ult., and was about making sail, when she was discovered to be on fire from stem to stern. Every exertion was made to save her by His Majesty's ships Thalia, Britomart, and Fair Rosamond, and the garrison; and on the morning of the 30th, she was warped close between the fort and pier, when in about an hour she was in a complete blaze fore and aft, and burnt until the following morning, when she filled. Several bales of cotton, which floated from the wreck, have been picked up.

The John Welch (No. 330.) The following particulars are given of the loss of this ship during a terrific gale at Liverpool from N.W. by N. The pilot, finding it impossible to claw off, ran for the S.W. Lightship, with the intention of attempting to enter the port. The vessel's sails were, however, torn to tatters by the fury of the storm; and, betwixt 7 and 8 o'clock, she struck on West Hoyle, outside the Lightship. She was got off in a short

time, but she had sustained so much damage by striking on the bank, that before she reached the Dove Spit she had several feet of water in the hold. The pilot now ordered the anchors to be put down, in the hope, by their assistance, of riding out the gale. The vessel, however, dragged, and between 9 and 10 o'clock she was driven on the bank near to Jackson's Buoy. The masts were now cut away, and the crew made every effort to save themselves from a miserable death, almost within sight of their families and their homes. The longboat was got out, but no sooner was it afloat than it was stove in by the pitching of the wreck, and sunk. The crew gave themselves up for lost. The vessel's stern being turned to the sea, in a short time the rudder was broken off, and with it part of the stern. The sea now swept the deck, carrying overboard several of the crew, who instantly perished. The remainder sought refuge in the rigging. Gradually, however, they were swept off, until only two men remained, one on the fore, the other on the after rigging. The man who had sought refuge in the after-rigging, having been exposed to all the fury of the waves as they broke over the wreck, was in a state of complete torpidity, or rather of insensibility, when, at 4 o'clock in the morning, he was taken off by the lifeboat from Hoylake. So fast was the poor fellow in the rigging, that the lifeboat men had actually to cut him out with their knives, whilst the clothes had been nearly all washed off his body by the continued action of the sea during the night. The other man, having ensconced himself in the fore-rigging, was not so much exposed as his companion to the fury of the waves, and, though he too was in a torpid state when taken off the wreck, he soon recovered. Both the men were treated with the greatest care and attention by the people on the main, and they are now out of danger. The number who perished by the melancholy wreck of the John Welsh amounts to 14. The names of the two survivors are Peter Deverick and John Hudson.

THE HANNAH, (No. 326.) The following account of the survivors of this wreck are from a Hull paper. The Volunteer, Clark, which arrived at this port on Wednesday last, from Ramshag, had on board the master (Cleugh) and five seamen of the Hannah, South Shields, fallen in with, in the course of their voyage, in the Western Ocean, waterlogged. They were the survivors of a crew of 12 men, five of whom had died, and one been drowned, and were in the most distressed and deplorable condition; to such extremities had they been reduced, that part of a human body was found on board, with which these unfortunate creatures had been compelled by starvation to eke out their miserable lives. On Wednesday Captain Clark applied to the mayor on behalf of these distressed men. He said their object was to obtain the means of getting to London, to which port the Hannah was

bound, and that it had been usual for the magistrates to give 5s. each to men brought here under such circumstances. They had already received 5s. each from the Trinity-house, and 2s. 6d. from the Charity-hall. The mayor said he regretted very much he had not the means of assisting them. Formerly the justices could order a sum of money to be paid to ship-wrecked sailors out of the borough fund, but the Municipal Reform Bill had taken that power out of their hands. Captain Clark intimated his opinion that it was a strange reform that took away the power of relieving unfortunate men who were in the constant habit of risking their lives. It was then intimated to them that they could get a passage to London for 2s. each on board the steamers, or that probably the proprietors, when the case was stated to them, would give the men a passage gratuitously; the party then left the room.

THE MAJESTIC, (No. 215.)—The wreck of this vessel was towed into port on the north-east side of Madeira, on the 15th June.

THE CHARLOTTE DOUGLAS, (No. 319,) ran on shore on Whale-Head Reef, at the entrance of Gaspé Bay, during a fog, and has since been condemned.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

Continued from page 509.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS
313 Adelaide	Of Bristol	———	Labrador	C. Querpon	7 July	8 drowned.
314 Anna	Owens	Flint	Ulverston	Off Ribble	19 July	Foundrd. ? lost.
315 Ann & Elizabeth	Pain	St. Valery	Newcastle	Sunk Light	Aug.	Foundrd. cw. sd
316 Atlantic	Edgar	Newfndld.	Quebec	C. Newfndld.	10 July	R. foul of. cw sd
317 Caledonia	Mills	Aberdeen	Shields	Off Berwick	22 July	Foundrd. cw. sd
318 Cato	Bishop	———	Plymouth	St George's C.	6 Aug.	Run foul of.
319 Charlotte Douglas	M'Nielage	Londonder.	Quebec	St. Lawrence	9 June	3 lost.
320 Confidence	———	St John N. B	Ireland	Nova Scotia	4 July	
321 Craster	Of Newcstl.	———	———	Margate	May	
322 Crown	Terry	Quebec	London	Lat 50 Long 17	3 Aug.	Crew sd. 1 drnd.
323 Edinburgh	Lyall	Sydney	Liverpool	At sea	30 Mar.	By fire.
324 Elepath	Bruce	Newcastle	Galway	Skerries	25 July	?
325 Friends	———	Guernsey	London	Shingles	24 July	Crew saved.
326 Hannah	Moore	Tobasco	Liverpool	Tobasco	13 May	Crew saved
327 Jane	———	Peterhead	Aberdeen	Peterhead	Aug.	Sprung a leak.
328 Jean Robertson	———	Peterhead	Montrose	Off Peterhead	24 July	
329 John and Mary	Of Liverp'l	timber ladn	Lat. 50°	Long. 18° W.	July	Abandoned
330 John Welsh	Woodhouse	Savanilla	Liverpool	Dove Point	29 July	2 saved.
331 Lalla Rookh	Murphy	Mirimichi	Waterford	At sea	31 July	Crew saved.
332 Matamorras	———	Liverpool	———	Tobasco Bay	30 June	Crew saved.
333 Odin	———	London	Stockholm	Northld. C.	9 Aug.	Crew saved. ?
334 Premier	———	Madras	London	Ascension	30 June	By fire.
335 Respected Friends	Payne	———	———	Off St Ann's H	25 Aug.	Waterlog. cw. sd
336 Richard Batley	Scott	Licata	Newcastle	Hueboro' S.	1 Aug.	Crew saved.
337 Sir Watkin	———	S Leone	Liverpool	Off Senegal	Aug.	Crw. sd. by Fr. V
338 Temperance	Patch	Jamaica	Halifax	Machias B.	11 July	Crew saved.
339 Thos. Millidge	———	Whaler	Quebec	St. Lawrence	———	
340 Warsaw	Needham	Archangel	Gloucester	Orkneys	19 Aug.	Crew saved.
341 William	———	Dublin	Chester	Red-wharf B.	29 July	All lost.
342 William Osborne	———	Apalichola	Liverpool	Apalichola	16 June	
343 William Torr	———	Whaler	Davies Str.	At sea	———	By ice.

To THE EDITOR.—Sir, it having been frequently asserted by masters of steamers and others,* that the swell so much dreaded by rivermen, proceeds from the bow alone, and that no danger whatever is to be apprehended from the paddles; I beg leave to affirm, that in a five years' constant experience on the water, I have often observed a much heavier and more dangerous swell running directly in the wake of a deep laden and powerful steamer, such as the Scotch and Irish boats; than is ever thrown off by the bow of the swiftest Gravesend packet. True it is that this wave from the paddle is more easily avoided as it generally does not occupy above fifty feet in width, continuing in the direct track of the vessel, whereas the "bow wave" sweeps the whole breadth of the river, running up like a small surf on the shore.

Your most obedient, TRITON.

NEW BOOKS.

A NARRATIVE of the Operations for the Recovery of the Public Stores and Treasure sunk in H. M. Ship Thetis at Cape Frio, on the Coast of Brazil, on the 5th December, 1830. By Captain Thomas Dickinson, R.N.

The first number of the Nautical Magazine was illustrated with a view of Thetis Cove, at Cape Frio, representing the operations of Captain Dickinson with the diving-bell; and in that and the following number we gave a brief sketch of his proceedings—a full account of which is now before us. The unfortunate loss of this ship has produced more trouble and difficulties than almost every other wreck before or since; and those difficulties are not yet at an end, as will appear in page 561 of our last number. We congratulate Captain Dickinson, however, on the ultimate success which has attended his operations, both by land as well as sea. If he succeeded so well as he has done in the recovery of the treasure, in which service he displayed the resources not only of a British seaman, but a first-rate mechanic, Captain Dickinson has been no less fortunate in giving the public a narrative of his operations, which operations having been directed by himself, entailed on him no easy task. We recommend this book to the particular attention of our naval readers; they will derive much information from it, which will be of the utmost importance in guiding their proceedings on any future occasion similar to that of the unfortunate Thetis.

MR. MIDSHIPMAN EASY. By the author of "Japhet in Search of a Father," "Peter Simple," "Jacob Faithful," &c. 3 vols. Saunders and Otley. London.

We promise our readers a treat in the perusal of these volumes. Captain Marryat has fully displayed in them that happy tact of stringing together a series of the most daring feats of enterprize, scenes of broad humour and exquisite feeling, which is peculiarly his own. But this would be only ephemeral, if there

* Vide Hiram's communication, vol. iv. p. 665.

were no higher object. To hold up morality, and to expose the errors of the day in the Royal Navy, are the leading objects of the work before us, as in the rest of Captain Marryat's writings. In our next we may find room for an outline of "Mr. Midshipman Easy," and a specimen of the author's ideas on equality.

THE NAVAL MAGAZINE. Vol. I. Nos. 1 to 4. J. L. Taylor. New York.

These are the first numbers of a work of the same nature as the Nautical Magazine. There is a spirit of emulation evident throughout them, which bids fair to produce useful and interesting information, at once creditable to the establishment and the officers of the American Navy, from whence they emanate. We shall hereafter quote the hydrography contained in them, as we have done already one of the articles on the Merchant Service; and we hope to find frequent occasion for a reference to them.

THE NAVAL HISTORY OF GREAT BRITAIN, from the year 1783 to 1835. By Edward-Pelham Brenton, Captain R.N. Parts I. II. III. IV. Henry Colburn. Windsor.

JAMES'S NAVAL HISTORY OF GREAT BRITAIN. Edited by Captain Chamier, R.N., author of "Ben Brace," "The Life of a Sailor," &c. Richard Bentley. London. No. 1.

A naval history of this country, including the eventful period above-mentioned, is without doubt desirable at the present time, and the appearance of two at once from the pens of *naval* authors for obvious reasons is not to be regretted. In so early a stage of these publications we cannot venture to speak of their merits; both have high claims to the patronage of the public, and we shall wait their completion. The first, by Captain Brenton, opens with a short introduction on the political state of Europe in 1783, and is to be completed in ten monthly parts. The second, by Captain Chamier, also opens with an introduction, but one of a different kind, in which a masterly view is taken of the rise, progress, and existing state of the Royal Navy down to the year 1792; and it is to be completed in fifty weekly numbers. At present our limits will not allow us to say more of either.

ASCENSION. A Poem by Richard Johns. Smith, Elder, & Co. Cornhill.

We never yet professed to decide on the merits of poetry, but there is a nautical cast in this, which is much to our taste; and those who delight in this proscribed branch of our literature will be pleased with it, particularly if, like ourselves, they are naval.

FINE ARTS: BIRD'S-EYE VIEW OF THE THAMES HAVEN DOCK.

This is a spirited sketch of a splendid undertaking, and one which must eventually succeed to the hearts' content of the projectors. It shews the intended Commercial and Collier Docks to be connected therewith, with the coal stores, the warehouses, hotel, dock, and custom-houses, from the designs of H. E. Kendall, architect. We shall take an early opportunity of discussing the merits of the Thames Haven scheme, which in our opinion bids fair to be ranked among the grandest and most important undertakings of the present day.

New Charts.

Since we last took up this subject, we find the following charts and plans relating to New-Zealand have been published by the Admiralty:—

1. Blind Bay, on the western shore of Cook's Strait. 2. Current Basin, in Cook's Strait: by M. Guilbert, Enseigne de l'Astrolabe. 3. Kiahou Harbour, in the north isle of Shouraka Gulf: by Mr. F. A. Cudlip. 4. Port Hardy, in Durville Isle, Cook's Strait: by Lieut. T. Woore, of H.M. ship Alligator. 5. Dusky Bay, from Vancouver's Voyage; and Port Chalky, from M. Duperrey's Atlas. 6. The South Point of Tavai Poenammoo: by M. de Blosseville. 7. Port Gore, of South Isle, in Cook's Strait. The foregoing are small plans; and 8. Wangeroa Bay, in the north isle of New-Zealand, by Lieut. Woore and Mr. F. A. Cudlip; and 9. Shouraka Gulf, with the mouth of the Thames, from the surveys of Cook, Downie, D'Urville, and Sadler, from 1769 to 1834, are on sheets of half-double-elephant paper. These form together but a very slight portion of the hydrography of New Zealand, but, with Lieut. M'Donald's chart of that country, should be on board every ship trading to New-Zealand.

PROMOTIONS AND APPOINTMENTS.

Promotions: *Captain*, J. M'Dougall; *Commander*, J. H. Puget; *Lieutenants*, F. Holland, — Laye.

Appointments: Britannia, 120: *Lieut.* W. Worsfold.—Beacon, Surv. Ves.: *Lieut.* W. W. Hornby.—Chatham Dockyard: *Master Attendant*, C. Brown.—Conway, 28: *Capt.* C. R. Drinkwater; *Lieuts.* T. M. Rodney, G. Beadon; *Mast.* Geo. Johnson; *Purser*, A. France; *Sec. Mast.* T. Forster; *Mate*, W. F. Burnett; *Surgeon*, J. B. Hatton; *Vol.* R. Shedden; *Clerk*, F. Fegan.—Coast Guard: *Com.* W. Radcliffe, at Sunderland.—Cornwallis, 74: *Assist. Surg.* J. Bowen, M.D.—Dublin, 50: *Sec. Mast.* G. H. K. Bowen.—Excellent: *Mate*, G. R. Wobridge; *Mids.* R. A. E. Scott, W. Butler, W. E. A. Gordon.—Fly, 18: *Lieut.* Hon. G. Hope; *Assist. Surg.* W. Graham.—Harlequin, 16: *Com.* J. E. Erskine; *Lieut.* W. Boys; *Master*, W. H. Emes; *Surg.* J. Brookes.—Hope, Packet: *Assist. Surg.* W. Brown, M.D.—Howe, 120: *Sec. Master*, J. Purchase.—Imogene, 28: *Col. Vol.* E. O. Johnson.—Inconstant, 36: *Lieut.* C. O. Hayes; *Mate*, P. J. Maitland; *Assist. Surg.* E. Newman, M.D.; *Mast. Assist.* R. V. Roberts.—Madagascar, 46: *Chaplain*, W. Mears; *Mates*, P. J. Maitland, E. G. Clerk; *Col. Vol.* W. Moubray.—Magnet, 10: *Assist. Surg.* G. F. Brown.—Medea, St. V.: *Purser*, J. Woodward.—Minden, 74: *Lieuts.* J. Ommaney, J. Colpoys.—Ordinary: *Plymouth, Clerk*, G. Henderson.—Pembroke, 70: *Purser*, G. Hodgkinson.—Pique, 36: *Lieut.* A. Boyle; *Mates*, F. Bourchier, S. F. Douglas; *Col. Mate*, F. Denison.—Royal Adelaide, Yacht: *Lieut.* J. Lyster; *Assist. Surg.* J. Campbell, M.D.—Raleigh, 16: *Lieut.* J. Harvey.—Rapid, 10: *Lieut. Com.* Hon. G. Kinnaird.—Scorpion, 10: *Sec. Mast.* A. J. Samuell.—Salamander, St. V.: *Com.* J. C. Dacres.—Scylla, 16: *Lieut.* F. Holland; *Surgeon*, G. Gibson.—Seaflower, 4: *Mid.* C. Dyke.—Somerset House: *Inspector of Warrant Officers' Accts.* B. Henster.—Tribune, 24: *Purser*, J. T. Duffell.—Vernon, 50: *Purser*, W. M'Lennan.—Vanguard, 80: *Com.* B. Walker.—Victory, 104: *Master*, J. Henderson; *Sec. Mast.* R. V. Roberts.—Volcano, St. V.: *Lieut.* W. M'Ilwaine.

Births.

At Greystoke Rectory, Cumberland, on the 25th August, the lady of Capt. Washington, R.N., of a daughter.

At Edinburgh, the lady of Captain Basil Hall, R. N., of a son.

At Dalkeith, the lady of Captain R. Tait, of His Majesty's ship Dublin, of a daughter.

August 20, at Lord's-lane, Hoddesdon, Herts, the lady of Captain D. H. O'Brien, R. N., of a daughter.

On the 4th Sept. at Stoke Terrace, the lady of Lt. Critchell, R.N., of a son.

On the 15th September, at Carshalton, Surrey, the lady of Capt. E. M. Daniell, Hon. Company's Service, of a son.

On the 13th July, at St. Mary Church, Devon, the lady of Thomas Richmond, Esq., Lieut. R. N., of a daughter.

On 18th Sept., the lady of John Hancorn, Esq., of H. M. Dock-Yard at Chatham, of a daughter.

On the 11th Sept., at Lee, the lady of Capt. Tucker, R. N.. of a daughter.

On 14th Sept., at Charles-place, the lady of Captain William Walker, R. N. K. T. S., of a daughter.

At Castlegregory, Kerry, the lady of Lieut. J. Simmons, R. N., of twin sons.

On the 14th Aug. in Somerset-street, Portman-square, the lady of Captain Wm. Burnaby Green, R.N., of a daughter.

At Robertstown House, the lady of Lieut. F. Smith, R. N., of a daughter.

At Southsea, on the 6th Sept., the lady of Lieut. C. Holbrook, of a son.

At Trafalgar-place, Stoke, on 20th August, the lady of Capt. Wilson, R.N. of a daughter.

On the 3d Sept., at Inhurst, near Newbury, the lady of Lieut. T. Kirby, R. N., of a son.

Marriages.

On 31st Aug., at Windsor Castle, Capt. Lord Frederick Gordon, R. N., to Lady Augusta Kennedy Erskine, daughter of his Majesty.

On the 29th of August, at Dover, Lieut. Colonel Bowyer, C.B. to Caroline, daughter of Commander Hopkinson.

In Dublin, Lieut. R. Jocelyn Otway, R.N., nephew to Sir R. W. Otway, to Anne, daughter of Sir Hugh Crofton, bart., of Mohill, Leitrim.

At St. George the Martyr, John, son of the late Rev. Edward Whitley, rector of Stowey, to Clara, only daughter of Capt. Corbyn, R. N., of Jersey.

On the 26th Aug. at Twickenham Church, by the Rev. C. Proby, Captain Geo. Brine, R. N., to Caroline, eldest daughter of the late Michael Bush, Esq. of Great Ormond-street.

On the 22d Aug., at the manse at Selkirk, by the Rev. John Campbell, John James Russell, Esq., of South Lambeth, Surrey, to Margaret, youngest daughter of the late Captain Robert Campbell, R. N..

On 25th Aug. at the parish church of St. Helen's, Isle of Wight, Capt. H. B. Wyatt, R. N., to Miss Bennett, of Appley, near Ryde.

By licence, on the 17th Aug. at St. Martin's Church, by the Rev. Mr. Ramsey, Charles Kerry Nicholls, Esq., nephew of the late Admiral Sir Henry Nicholls, K.C.B., to Charlotte Matilda, only daughter of George Saunders Prestwidge, Esq., of Jamaica.

On the 10th Aug. at Camberwell Old Church, John de Lancey Robinson, Esq., Lieut. R.N., youngest son of the late Colonel Robinson, to Frances Ann, only daughter of Samuel Waring, Esq., of Grove Cottage, Dulwich, and the Oaks, Norwood, Surrey.

On the 23d July, George Ogle, Esq., of Brompton, to Philippa Wallis, eldest daughter of Captain J. Lamb Popham, R.N., of Falmouth.

At Bishopwearmouth, J.G. Harrison, Esq., R. N., to Jane, daughter of the late W. Hindmarch, Esq., of Bishopwearmouth; and A. J. Moor, Esq., of Sunderland, to Ann, second daughter of the late W. Hindmarch, esq., of Bishopwearmouth.

On 14th Aug, at St. Sanson's Church, Jersey, Captain John Purse, of Sunderland, to Sarah, second daughter of Mr. B. Shephard, of Lymington, Hants.

At Stoke Church, by the Rev. John Lampen, A. M. Rd. Douglas, Esq., Surgeon R.N., to Amelia, fifth daughter of the late Mr. Samuel Paramore, of His Majesty's Dock-yard.

On the 10th Aug., at St. George's, Hanover-square, the Rev. Geo. Goodenough Lynn, to the Hon. Mrs. Percy Fraser, widow of the late Rear-Admiral Fraser, of Hampton Wick, Kingston.

On the 13th September, at Kingston, Ernesto Rapallo, Esq., of London, merchant, to Priscilla, only child of James Lowcock, esq. of Robert-st. Bedford-row, London, and niece to Jonathan Page, Esq., of Portsmouth Dock-yard.

At Poona, on the 30th April, by the Rev. Randal Ward, A. M., Chaplain, W. Scott Adams, Deputy Assistant Quarter Master General, to Helen, youngest daughter of the late Captain Mathew, R. N.

On 1st Sept., at Christow, Devonshire, Thomas Lane, Esq., eldest son of the Rev. Richard Lane, of Coffleet, and Bradley House, in the County of Devon, to the Hon. Julia Pellew, only daughter of the late, and sister of the present, Viscount Exmouth.

On 15th Sept., at Lewisham, Captain John M'Cutcheon, of the merchant service, to Louisa, eldest surviving daughter of the late Wm. Holmes, Esq., of the Strand.

Deaths.

On the 21st of August, at his seat, Datchett, near Windsor, of apoplexy, Vice-Admiral Sir John Gore, K. C. B. and G. C. H., recently Commander-in-chief in the East Indies. In 1805, he received the honour of Knighthood; in 1813, he was promoted to the rank of Rear-Admiral; nominated a K.C.B. in 1815, and appointed Commander-in-chief in the Medway. Sir John married, Aug. 15, 1808, the eldest daughter of Admiral Sir G. Montague, by whom he had several children. His remains were interred in the New Burial Ground at Datchet, attended there by eight Admirals, and a large number of friends.

On 7th Sept., at Killary, near Cardiff, of apoplexy, Capt. Sir Christopher Cole, R. N. (1802), Colonel of Marines, and, in the last Parliament, member for the County of Glamorgan. He was much esteemed by his equals, and is regretted by the poorer class, who have lost a charitable and kind friend. Sir Christopher leaves a widow, Lady Mary Talbot, to whom he was married in 1806.

At Ashbrittle, near Wellington, Lieut. Henry Tucker, R.N., (1812) aged 43.

Off Monte Video, Mr. W. Pearn, Master of H. M. schooner, Spider.

At Yarrow, County of Durham, the Rev. John Netherton O'Brien Hall, late a Lieutenant in the Royal Navy, and son of the late Vice-Amiral Hall, aged 49.

At Edinburgh, on 10th September, Frances, daughter of the late Admiral Markham.

At Truro, on the 15th Sept., Margaret, relict of Capt. John Conn, R. N., aged 72.

Drowned whilst bathing in the Seine, James Warburton, Esq., son of the late Major Warburton, of the old 96th regt. and nephew of Lieut. Malone, of the Royal Naval College.

On the 30th Aug., at Omagh, Mr. Wm. Cather, retired surgeon, R. N., aged 73.

On the 14th Aug., at Kingston, J. Peake, Esq., 3d senior Purser, 1778, aged 79 years, formerly Clerk of the Ropework, Woolwich Dock-yard, and brother of the late Sir Henry Peake.

At Sierra Leone, on the 17th April, of fever, Mr. Richard White, aged 21, chief mate of the John King, of Liverpool, and youngest son of Mr. G. White, assistant-converter in the Dock-yard at this port, deeply lamented by his parents and friends.

On the 21st Sept., at the residence of her father, Captain Read, R. N., Fishbourne, near this city, Miss Caroline Read, aged 20 years.

At Exmouth, Augusta, only daughter of Captain the Hon. G. Poulett, R. N., aged 16.

Lately, in Ramsay Bay, James Crosscomb, Master of the brig William Irvine, of Cardiff. The vessel cast anchor in the bay, and the captain, accompanied by his wife, proceeded on shore to purchase provisions. A stiff breeze sprung up during their absence from the vessel, and in attempting to get on board again the captain was washed overboard, and perished; his wife, to whom he had only been married about six months, was a melancholy spectator of his unhappy fate.

On the 11th of June, at Simon's-town, Frederick William, the youngest son of Rear-Admiral Sir P. Campbell, K. C. B., Commander-in-chief at the Cape of Good Hope.

On the 5th Sept., at Boulogne-sur-Mer, Charlotte, wife of Vice-Admiral Sir Willoughby Lake, K. C. B.

On the 1st Sept. at Drylaw, Capt. C. H. Watson, R. N.

Near New York, aged 67, Thomas Brindley, Esq , late of Rochester, shipbuilder, and father of Mr. Brindley, of Plymouth, naval architect. He was thrown out of a carriage whilst accompanied by a friend, and only survived 22 hours.

On Sept. 1, of a decline, at the residence of her uncle, Dr. Thomas, of Wakefield, Elizabeth, eldest daughter of the late Capt. Thomas New, Royal Navy.

On the 24th, at St. Thomas's, Exeter, Juliana Mary Barron, aged 17, the eldest daughter of the late Lieutenant J.C. Barron, R.N., formerly commanding his Majesty's brig Frolic on the Falmouth station.

At Greenwich, John Pond, Esq., F.R.S., late Astronomer at that Observatory, Corresponding Member of the French Institute, and an Honorary Member of most of the Astronomical Societies in Europe. On his retirement, through ill health, he was succeeded by Professor Airy.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

AUGUST, 1836.

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.
		in. dec.	in. dec.	°	°	°	°						
1	M.	30·15	30·05	61	68	53	71	S.W.	S.W.	5	6	Od (2)	Bc.
2	Tu.	30·01	30·07	60	66	50	70	W.	W.	5	4	Bc.	B.
3	W.	30·00	29·89	61	74	51	76	S.	S.E.	3	2	B.	Bcl.
4	Th.	29·85	29·86	66	70	54	72	S.	S.	4	2	O.	Bc.
5	F.	29·97	30·00	62	72	57	73	N.E.	N.	3	4	O.	Bcp (3
6	S.	30·10	30·13	63	66	56	68	N.	N.	5	5	O.	Bc.
7	Su.	30·11	30·16	59	68	51	71	N.	N.	4	3	Bc.	Bc.
8	M.	30·17	30·18	62	69	52	72	N.	N.E.	2	2	B.	B.
9	Tu.	30·20	30·18	60	68	50	69	N.E.	E.	4	3	Bcm.	B.
10	W.	30·16	30·15	64	71	47	73	N.	N.	3	4	Bcv.	Bcv.
11	Th.	30·30	30·30	63	70	52	70	N.E.	E.	4	4	Bcv.	Bcv.
12	F.	30·33	30·31	62	68	56	69	N.E.	E.	4	4	Bcv.	Bv.
13	S.	30·20	30·12	65	72	49	73	E.	E.	4	4	Bv.	Bvl.
14	Su.	29·90	29·86	61	69	56	70	E.&W.	S.W.	2	1	Otlr (2)	Bcm.
15	M.	29 95	29·97	63	72	57	73	S.W.	S.W.	2	2	Fo.	Fo.
16	Tu.	30·19	30·15	59	68	55	70	N.E.	NE-W	3	2	O.	Bcm.
17	W.	30 08	30·12	65	71	57	73	S.W.	W.	5	5	Bc.	Bc.
18	Th.	30·06	29·96	62	70	54	72	S.W.	S.W.	6	6	O.	Bcp (3
19	F.	30·16	30·18	58	63	54	66	W.	N.W.	6	6	O.	Q'bc.
20	S.	29·94	29·72	57	60	49	62	S.W.	S.W.	5	4	Qor (2)	Or (3)
21	Su.	29·93	29 91	57	65	50	66	N.	N.	3	2	O.	Bcm.
22	M.	29 77	29·70	58	65	49	67	S.W.	S.W.	2	5	O.	O.
23	Tu.	29·61	29·65	59	66	54	66	N.W.	N.	1	2	Or 1)	Or (3) (4)
24	W.	29·96	30·04	55	62	50	63	N.E.	N.E.	3	4	Or (1) (2	Bcv.
25	Th.	30·15	30·12	54	66	45	68	S.E.	S.E.	3	3	Bv.	Ov.
26	F.	29·97	29·96	59	64	53	67	S.W.	S.W.	3	2	Or (2)	Bcm.
27	S.	29 93	29·90	61	68	50	69	S.W.	S.W.	3	4	Bc.	Bc.
28	Su.	29·95	29·95	60	62	53	64	S.	S.W.	3	2	Or 1) (2)	Bc.
29	M.	30·12	30·12	56	66	48	66	N.W.	W.	3	2	B.	Bc.
30	Tu.	30·17	30·17	59	67	50	68	S.W.	S.W.	3	4	Bc.	Bc.
31	W.	30·08	30·02	64	71	55	72	S.	S.	5	5	Bv.	Bv.

AUGUST—Mean height of Barometer = 30·038 inches; Mean Temperature = 60·8 degrees; Depth of Rain fallen=2·45 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

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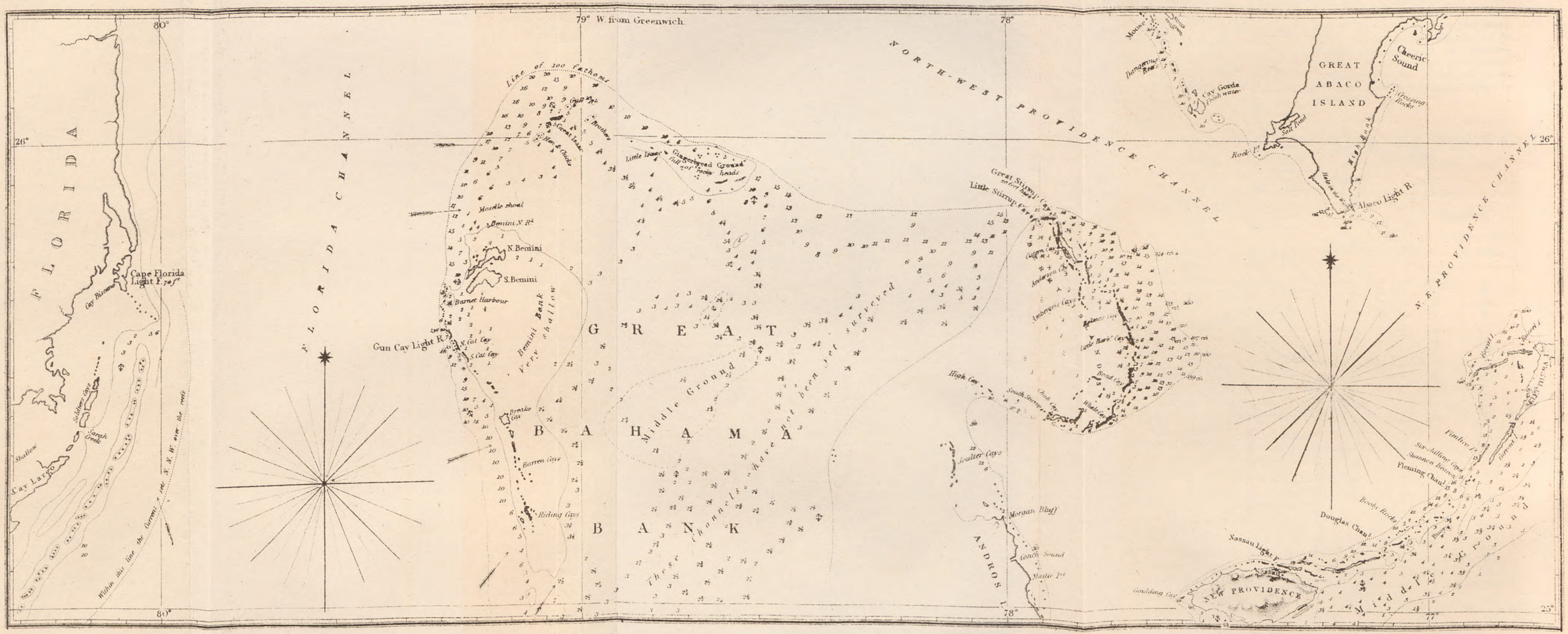


PART OF THE FLORIDA AND PROVIDENCE CHANNELS

SHEWING THE POSITIONS OF THE NEW LIGHT HOUSES ON GUN CAY AND ON THE SOUTH POINT OF ABACO ISLAND

By Commander Richard Owen H.M.S. Thunder

Pub.d for the Proprietors of the Nautical Magazine by Simpkin & Marshall, 1866.

ORIGINAL PAPERS.

NOVEMBER, 1836.

AUSTRALIAN SETTLEMENTS—NORTHERN COAST.

Narrative of a Naval Officer.

THE British Government having determined on forming a settlement on the northern coast of Australia, which promised to be highly advantageous to the mother country in a commercial, as well as a political point of view, H.M. ship Tamar was commissioned in September, 1823, at Deptford, by Captain J. J. G. Bremer, C.B., who was directed to take possession of that portion of the coast which should prove to be most eligible for the object in view. We sailed from Plymouth on the 27th of the following February, and arrived at Port Jackson in July. Having completed our preparations at this place, we again started for our destination on the 23d of August. With a fine northerly breeze, we dropped down the port three or four miles, and brought up off Bradley's Head and Point Piper, where we were joined by the Countess of Harcourt, and colonial brig Lady Nelson, of 50 tons burden. This latter vessel was destined to accompany us with 40 tons of coal, for the use of blacksmiths' forges, &c.

As the wind continued northerly, and our route lay in that direction, towards Torres Strait, we continued at anchor till next day; and in the mean time partook of the never-failing hospitality of the naval officer of the port, Captain Piper, whose noble mansion, constituting one of the greatest ornaments to the colony, adorns the projection of land which bears his name. A breeze having at length sprung up from the south-west, and the tide proving favourable, soon after noon of the 24th we made sail out of Port Jackson, saluting with fifteen guns, and accompanied by our convoy. Captain Piper complimented us with seventeen guns as we rounded off; and, passing west of the Sow-and-Pigs Shoal, in four fathoms and a quarter least water, we were soon clear of the heads, and sent our last letters on shore by Mr. Siddons, the pilot. Mr. Balcomb, the colonial treasurer, and Mr. Uniacke, the late sheriff, having also accompanied us thus far, now made sail for Sydney cove again, while we took the Lady Nelson in tow, and stood out to sea.

* The importance attached to correct information on the northern coast of Australia, to which much attention seems to be now directed, with the view of colonization, will render the accompanying description of the first settlement of Melville Island and Port Essington very acceptable, more particularly as no account of those measures has yet been published. It is proposed to continue the narrative in some future numbers of this work.—ED. N. M.

The wind having veered to its former direction from the northward, we made little progress in that direction till the evening, when it came fresh off the land, and we made such rapid progress alongshore to the northward, that Macquarie light was not visible at midnight.

We threaded our way along the dangerous eastern coast, and passed through Torres Strait on the 15th of September; and crossing the Gulf of Carpentaria, with moderate easterly breezes, and fine weather, we had between twenty-five and thirty-six fathoms water, on a bottom of blue mud. On the afternoon of Friday 17th September, we passed about four miles from Cape Wessel, the northern extremity of a range of level islands bearing the same name, and had thirty-one fathoms, which shortly afterwards decreased, and left us in twenty to twenty-three fathoms throughout the night.

A course being steered for New-Year's Island, we were at noon on the 18th in observed lat. 11° 15′ 41″ S., and long. by chronom. 134° 42′ 21″ E., or 103 miles from it; and fifteen miles further on, a true W. by N. course, brought us into a considerable decrease of water, from twenty-five to seventeen and thirteen fathoms; the bottom also changed from mud to stones and shells, with some coral, and the water was covered beyond the extent of our visible horizon with vast quantities of the fish spawn, or other buoyant matter, so well known to seamen by the term of sea sawdust. It had now a sensibly strong smell, and did not begin to disappear till our water deepened at the expiration of an hour and a half. These shoal soundings are a few miles southward of similar depths found by the Mermaid; and if no shoal exists in this immediate neighbourhood, this bank of reduced soundings must be very extensive. From this situation a course was steered for New-Year's Island, a small piece of low wooded land in 10° 55′ S., and 133° 0½′ E.; but the wind having been light through the night, we did not make much progress; and at daylight of Sunday the 19th found the ship again surrounded by sea sawdust, floating on the surface of the water, as far as we could discern from aloft in every direction. Fish of various kinds were also abundant about the ship, and the soundings gradually decreased to twenty-four and twenty-two fathoms, till about 10 A.M., when an island was seen to the westward, at the distance of seven or eight leagues. As it was approached, high breakers were observed to extend from it to the distance of about two miles, and we steered W.S.W. to pass on its south side, having soundings from seventeen to thirteen fathoms. Another island of larger dimensions soon afterwards came in sight, to the southward, and proved to be Grant's Island, that first seen being M'Cluer's, and New-Year's Island just topping above the horizon in the N.N.W. An indifferent observation under the land by Mr. Davis, the master, made the lat. 11° 12′ S., with M'Cluer's

Island bearing between N. 10° W. and N. 22° E.; Grant's Island, S. 49½° E. to S. 80° W.; and a small bright patch among the red cliffs of De Courcy Head, S. 8° W.

At this time we were in eighteen fathoms water; but not having any information respecting the passage among the several low islands that were in sight to the north-westward, the studding-sails were taken in, and I once more resumed my station at the mast-head. Our precaution proved not unnecessary, for the soundings gradually decreased, while the spawn on the water's surface rendered it very difficult, indeed almost impossible, to discern shoal-water in any direction. The sun was also immediately over our course, but the water appearing deeper near some low sandy islands on the starboard hand, than towards Grant's Island, we stood over towards them; the depth continued, however, gradually to decrease, the Lady Nelson's tow-rope was let go, sail reduced, and at a quarter before two o'clock we were in five fathoms, on a narrow spit, which was afterwards distinctly seen extending in a north and south direction.

Being then something more than two miles south-eastward of the southernmost low sandy island, and not knowing what might still exist ahead, the ship was rounded to, and Lady Nelson sent ahead to sound, together with our master in the cutter. We followed in the ship at the distance of three-quarters of a mile, and gradually deepened our W. by S. course, till the low island was passed in twelve fathoms, one mile and a quarter distant. We had then a rapid decrease to half that depth, and it was not till we had got well clear of all these islands that the overfalls ceased, and enabled us to haul up for Cape Croker, which was then plainly visible to the north-westward, at the distance of five or six leagues.

I should by no means recommend a ship to follow our track among the islands above mentioned, as both M'Cluer's and Grant's Islands are surrounded by dangerous reefs to a considerable extent; and other dangers may exist, than those laid down in our chart, the discoloured surface of the water rendering it absolutely impossible to assert the contrary.

Having once more got into eighteen and twenty fathoms water, the cutter was recalled, Nelson taken in tow, and, with a freshening sea-breeze from the north-east, we arrived off Cape Croker by sun-set, when the variation by amplitude at the binnacle was found to be 2° 28′ easterly, and before the mizen-mast 0° 17′ west, with the ship's head N.N.W. Our canvass was then reduced to double-reefed topsails, and from ten fathoms, at two miles N. by W. of the cape, we stood off for the night, with an intention of running into Port Essington in the morning.

Cape Croker, which is low, rocky, and of level appearance, is surrounded by rocks and breakers to the extent of half a mile; and on the summit of a small round hill which surmounts it, an Indian was observed standing erect, and brandishing a spear at us. He

appeared remarkably tall and well made, and some on board thought he was clothed, but to me he appeared perfectly naked. Another was soon afterwards observed to join him, and both then disappeared in the dark shades which the approaching evening cast upon the woods. No fires or smoke were seen to-day, but this part is as well peopled by native inhabitants as the adjoining coasts, though only moderately elevated, and very level. While standing off shore, we increased the depth rapidly to seventeen fathoms, and shoaled again to twelve about two miles farther to the N.W. by N. Supposing we were drifting towards the land, more sail was made, and we gradually deepened to twenty-five by midnight, when the wind had fallen away to nearly a calm, and we hove-to with ship's head to the southward.

At daybreak of 20th September, we found ourselves a few miles W.S.W. of our sunset position, with the hill on Cape Croker bearing S. E. by E., five or six leagues distant. The sun's rising amplitude here gave the variation 0° 13′ west, with the ship's head to the south-west, and we endeavoured to get in with the land of Port Essington; but, with a very light air from the southward, and a current or tide to the north-east, our progress was trifling till the sea-breeze set in light at N.N.E. half an hour before noon. We then steered to the south-westward, carrying very regular soundings, thirteen fathoms, till within three or four miles of Point Smith, which is low and woody, with a sandy beach all round, and some low red cliffs near its extremity. A rocky reef projects about a mile from it, in a northerly and north-westerly direction, in rounding which at half that distance, we had not less than six fathoms, on gradually sloping-ground; and on hauling round it into Port Essington, quickly deepened to eight, ten, and twelve.

Our course up this noble port was S.S.E. and S.E. by S. for ten or twelve miles, shoaling the water very gradually, and we had then arrived off a cliffy projection on the eastern shore, having some low rocks extending from it, and a long dry reef from its southern trend, in the direction of about S.W. by S. About three quarters of a mile to the westward of this point, which, from a remarkable low flat rock near its extremity, Captain King named Table Point, we anchored in five fathoms, muddy ground, and immediately carried into execution the previous arrangements that had been made for landing, and taking formal possession of this country for the crown of Great Britain. All boats were hoisted out, and, with forty marines, their two officers, and all the officers of the ships that could be spared, we accompanied Captain Bremer on shore to the point. On our way thither, two natives were observed running among the trees at full speed, apparently in great alarm; but they quickly disappeared in the woods, and did not again shew themselves. The convoy anchoring soon afterwards, our party was speedily joined by Captain Barlow, and the officers of the intended new colony, when a new union-jack was strongly

secured to a staff in a conspicuous gum tree, (eucalyptus,) and by desire of Captain Bremer, the following Declaration was read from a paper.

"The north coast of New Holland, (or Australia,) situated between the meridian 129° and 135° east of Greenwich, with all the bays, rivers, harbours, creeks, &c. in, and all the islands lying off, were taken possession of in the name and in the right of His most excellent Majesty George the Fourth, King of the United Kingdom of Great Britain and Ireland, &c. &c., and His Majesty's colours hoisted at Port Essington, in Cobourg Peninsula, on the 20th day of September, 1824, by James-John-Gordon Bremer, Companion of the Most Honourable Military Order of the Bath, Captain of his Majesty's ship Tamar, and commanding-officer of a detachment of his Majesty's forces employed on the said coast. His Majesty's colonial brig Lady Nelson, and the British ship Countess of Harcourt, in company."

This notification having been made, the marines, who were drawn up on the spot, presented arms, and saluted the colours; after which they fired three *feu de joi*, and gave nine cheers, accompanied in the latter by the whole of those who were present, including upwards of forty individuals. This was promptly answered with equal enthusiasm by Lieut. Golding, and the remainder of our ship's company, who manned yards on the occasion; and, with the British colours displayed at each masthead, the ship fired a royal salute. The ceremony closed with drinking the health of our most gracious Sovereign in a bumper of good wine, round the flagstaff; and the last gun having been fired as the sun disappeared beneath the horizon, we all returned on board our respective ships.

ROADSTEAD OF ST. MARCOU.

To the Editor of the Nautical Magazine

SIR.—In a letter to the Committee of Lloyd's, under date of the 1st instant, I gave an account of the circumstance relating to anchoring under the Isle of St. Marcou, on the coast of France; by doing which I saved my ship. These gentlemen were pleased to have it made public.

Concluding that it has not passed unnoticed by you, I beg to say, that should the information* be considered worthy a page in the Nautical Magazine, you will please add to it the present information, which I hope may tend to establish confidence in the minds of those it may concern, and prove more fully the Roadstead of the Isle of St. Marcou to be a safe refuge when no other may be obtained.

It will not be a matter of surprise if I state, that I passed the night of the 17th in some degree of anxiety. The ensuing day,

* See p. 226, No. 50, for April.

however, made me perfectly easy; and by the observations I was enabled to make, I was confident that I had met with a safe and secure shelter; for it was not only that I saw myself well protected by the bank and the islands, but I perceived that the ship rode fully eight hours out of the twelve with little or no strain on the cable, most of the time partially tended to windward, and when not thus tended, there was no appearance whatever of tide at the time of flood. Struck with this singularity, I was led at the time to make all the inquiries possible regarding the position of the place, where I was, I may say, so triumphantly riding out the storm—for thus I felt.

It is stated, in our Channel sailing directions, that the flood-tide sets directly from Cape Barfleur toward Havre; and, indeed, it is only to examine the coast from the Race of Alderney to Cape Barfleur, and this will not be doubted. The current of tide having the direction of the land, proceeds for some distance due east from Barfleur; it then curves off gradually towards Havre; so that the tide rises in all the western parts of this bay without any perceptible current. I believe, under the isles, a portion of the flood sets to the northward, for, after passing round the south-east end of the Cordouet Bank, it runs to fill up the western parts of the bay, proceeding in a northerly direction until it meets the flood running to the eastward, and joins it. This is my supposition, from the circumstance of my finding the tide set eight hours to the northward. This is the greatest advantage I think the roadstead possesses: by the bye, there is one equivalent, that of *no pay*. From what I have here and in my former letter stated, I hope no person who may peruse them will allow his ship to go on shore in the vicinity of these islands, without giving their proffered shelter a trial; for even should the result be to go on shore, there is no place between Calais and Ushant where a ship may go on shore with greater safety than W.S.W. by compass from them. Their position may render them useful to a very wide range of the channel, should a vessel with the wind at N.N.E. be driven close to the coast about Dieppe, if she could carry any canvass, she may be enabled to reach them. If a ship should be off the Casketts, and desirous of proceeding to the eastward, if the gale increases, she may weather Barfleur, and have them under her.

Concluding these remarks, I would say, that what I have written is for the welfare of my fellow-seamen; and that it may not lead them to danger, let it be remembered, that this place cannot be approached without due caution, (for the banks break high at low water,) and not at all at night, but in cases of extreme necessity. I hope it may be scientifically examined.

I take this opportunity of returning you, Mr. Editor, my sincerest thanks for the instruction and amusement which I have received from the Nautical Magazine. I wish it success, and

hope soon to find it on board every British merchant ship. Its usefulness is not sufficiently known, but its merits remain not unspoken of among the acquaintance of

Your very obt. servant,

Newport, March 18, 1836. WM. H. SUMMERS.

CAPE FLORIDA LIGHT.

H. M. Brig-Packet Eclipse, Havana, 2d Aug. 1836.

SIR,—I beg to acquaint you, for the information of my Lords Commissioners of the Admiralty, that Cape Florida, or Key Biscano light-house, was burned down on the night of the 24th of July by the Indians.

I have the honour to be, &c. &c.

W. FORRESTER Lieut. Com.

Charles Wood, Esq. Admiralty office.

The foregoing information is most important to navigators, and adds still greater importance to the Gun Cay light, on the eastern side of the Florida gulf, by which a further inducement is thus held out to navigators, to keep on the eastern side of the gulf, in running through it to the northward. The various losses of vessels in this part, we believe, generally take place on the Florida side of the gulf, where they get drifted and bewildered among the dangerous reefs which lie off the shore.

As the most valuable purpose to which this light on Gun Cay will hereafter be applied, is that of taking a departure from it; we shall insert here a small table which we strongly recommend to the attention of seamen. It has already appeared in our first volume,* but we will here repeat it with an example illustrative of its use.

A ship homeward bound running through the gulf of Florida, makes the Gun Cay light bearing N. E. by E. ½ E. She steers a direct course N. ½ W., and having run 10 miles per log, finds the light bear S. E. ½ E.; required the distance of the light at the time of the last bearing.

Proceeding according to the rule, the angle between the course, and the first bearing or between N. ½ W. and N. E. by E. ½ E. is 5½ points, and the angle between N. ½ W. and S. E. ½ E. is 12 points. Against the latter in the column of the former is 0·92, which multiplied by 10, the distance run = 9·2, the distance of the light from the ship at the time of the last bearing. A correct departure is thus obtained of Gun Cay light, S. E. ½ E. 9·2 miles free from the errors of *estimated* distances, and may be taken into the reckoning accordingly.

In the same manner a vessel may ascertain her exact position at any time when the correct geographical position of the light-

*P. 208.

house, or any other which is made use of, is known. It might serve also to lay down a newly discovered rock or shoal. Thus, suppose a ship strikes on a rock previously unknown, or not, as may be; the bearing of the light-house is taken correctly from her at the time. She then runs a direct course for any convenient distance, and finds with that distance, and a second bearing of the light-house, the distance she is then from it. With this bearing and distance she marks her last position on the chart, and applying there the course and distance she has run from the rock where she took the first bearing, the position of the danger is obtained, and may be laid down with quite sufficient accuracy to warn navigators of it.

Seamen will no doubt shortly find the great utility of the table.

TABLE,

For finding the Distance of an Object, by two Bearings and the Distance run between them.

Angle between Course and 2nd Bearing in Points	ANGLE BETWEEN THE COURSE AND FIRST BEARING IN POINTS OF THE COMPASS.																				
	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10				
3½	1·																				
4	1·00																				
4½	0·81	1·23																			
5	0·69	1·00	1·45																		
5½	0·60	0·85	1·17	1·66																	
6	0·54	0·74	1·00	1·35	1·85																
6½	0·49	0·67	0·88	1·14	1·50	2·02															
7	0·46	0·61	0·79	1·00	1·27	1·64	2·17														
7½	0·43	0·57	0·72	0·90	1·11	1·39	1·77	2·30													
8	0·41	0·53	0·67	0·82	1·00	1·22	1·50	1·87	2·41												
8½	0·40	0·51	0·63	0·76	0·92	1·09	1·31	1·58	1·96	2·50											
9	0·39	0·49	0·60	0·72	0·85	1·00	1·18	1·39	1·66	2·03	2·56										
9½	0·38	0·48	0·58	0·69	0·80	0·93	1·08	1·25	1 46	1·72	2·08	2·60									
10	0·38	0·47	0·57	0 66	0·76	0·88	1·00	1·14	1·31	1·51	1·76	2·11	2·61								
10½	0·38	0·47	0·56	0·65	0·74	0·84	0·94	1·06	1·19	1·35	1·55	1·79	2·12	2·60							
11	0·39	0·47	0·56	0·64	0·72	0·81	0·90	1·00	1·11	1·24	1·39	1·57	1·80	2·11	2·56						
11½	0·40	0·48	0·56	0·63	0·71	0·79	0·87	0·95	1·05	1·15	1·27	1·41	1·58	1·79	2·08	2·50					
12	0·41	0·49	0·57	0·64	0·71	0·78	0·85	0·92	1·00	1·08	1·18	1·29	1·41	1·57	1·76	2·03	2·41				
12½	0·43	0·51	0·58	0·65	0·71	0·77	0·83	0·90	0·97	1·03	1·11	1·20	1·29	1·41	1·55	2·72	1·96				

Explanation of the foregoing Table.

The Table is to be entered with the number of points contained between the ship's head and the *first* bearing of the object, at the top, and with the number of points, reckoned the same way, between the ship's head and the *second* bearing, at the side; the number in the table at the intersection of the two columns being multiplied by the distance run, is the distance from the object at the time the *last* bearing was taken.*

EXAMPLE:—The Eddystone bears N.W., and after running W. by S. 8 miles, it bears N.N.E.; the number of points between W. by S. and N.W. is 5, and that between W. by S. and N.N.E. is 11; then, under 5 points at the top, and abreast of 11 points at the side, stands the number 0·9, which being multiplied by 8, gives 7·2 miles, the distance at the time of the last (N.N.E.) bearing.

If the bearings are observed to quarter points, the numbers may be taken out accordingly. This needs no example.

* *The number in the Table is the value of the expression* $\frac{\text{Sin. A}}{\text{Sin. (B}-\text{A)}}$, *where* A *is the number of points at the top, and* B *that at the side.*

BURLINGTON AND WHITBY AS HARBOURS OF REFUGE.

———— "O, it is monstrous! monstrous!
Methought the billows spoke, and told me of it;
The winds did sing it to me; and the thunder,
That deep and dreadful organ-pipe, pronounced
The name." *Tempest.*

WHEN the Committee on *Harbours of Refuge* recommended a continuation of the passing-toll on shipping for the dry harbours of Scarborough, Bridlington,* and Whitby, thereby investing them with the dignity of *asylum* harbours, they might have adopted as their motto the sailors' phrase, "any port in a storm;" or, if they had preferred a more classical one, that beautiful sentiment of Horace might have suited them,

"Dulce et decorum est pro patria mori,"

meaning that they had other matters to attend to besides the lives of sailors! If this committee had favoured us with their definition of an asylum harbour, we might have used it as their own standard wherewith to examine the pretensions of these harbours to be considered as such. But since they have not done so, I will endeavour to supply the deficiency; and your nautical readers, Mr. Editor, will, I hope, set me right, should my definition of one be erroneous. An asylum harbour is one that should be easy to enter and depart from AT ALL TIMES; it should afford instant security to vessels when in it, with perfect freedom to depart with any wind. Let us apply this standard to Scarborough.

* The reader must accept the terms "Bridlington" and "Burlington" as meaning the same place, they having been indiscriminately used in the report and evidence of the Committee on Harbours of Refuge, and I quote both as they stand.

The committee say in their report on Scarborough, that "the entrance in a severe gale of wind on shore is attended with great danger;" an important admission to make, truly, when recommending its protection by the state. In my former letter, I shewed by a mass of evidence before this committee, that it was now only accessible "from six to eight hours in the four-and-twenty;" that in its contemplated improved condition it will "still remain a tidal harbour," and be as liable to fill up as it has been, the causes remaining the same. Then, as Scarborough harbour dries at low-water also, it does not come within the limits of our standard, and after all is not a harbour of refuge. This accounts for the lost vessels mentioned by Mr. Hill, as well as twenty-three others* in three separate gales from the eastward, alluded to in another part of the evidence.

Let us now consider the two remaining harbours, namely, Bridlington and Whitby, with regard to their pretensions to be considered as *asylum* harbours. I much doubt, if the standard above-mentioned be applied to them, whether I shall not come at once to the conclusion of my letter, as they are notoriously tidal harbours; but as they have been brought forward by the committee, as worthy the continuance of passing tolls, let us look into the grounds on which their claims are founded.

We will first take Whitby, which, notwithstanding they have recommended the passing toll to be continued for it, the committee at the same time have fixed its anathema on it, by declaring it in their report as "very dangerous to enter, in a gale of easterly wind blowing on shore;" and that it has, like Scarborough, "no safe roadstead." Why then is it thus recommended? The only ground on which the committee could recommend the passing toll to be continued for these harbours, is the circumstance of a vessel or two having been saved by them; but we are not told the size of these vessels; nor are we told the vessels of which they have occasioned the loss. Now Whitby has sixteen feet at high-water and two feet at low-water, at its entrance: colliers of 250 tons (those generally built) draw fourteen feet; what chance then have they of benefiting by Whitby in bad weather, from the eastward? Capt. Hewett says, in his evidence, "I should be very sorry to be placed under circumstances to render it necessary to take the harbour of Whitby, and for these reasons, that the piers run perpendicularly to the coast-line, so that there is a wide mouth, as it were, open to receive the swell from the North Sea occasioned by gales of wind on the land; and before a vessel could be well stopped, she would stem the bridge. The only way in which vessels can take the harbour with safety is by assistance of boats, ropes, and all sorts of prepa-

* See minutes of evidence, p. 98, where it is stated that on 4th Nov. 1831 seven were lost; or 14th Oct. 1829, three were lost; and on the 11th Oct. 1824, thirteen were lost.

rations made for them on shore previous to their entering between the piers. And this must be done," Captain Hewett adds, "between the *last* quarter of flood and the *first** quarter ebb." This is clearly admitting that it is neck-or-nothing kind of work to run for Whitby, even when it is available; for boats, &c. are of not much use in a gale on shore. And Mr. Aaron Chapman cites an instance a little further on in point. He says, "There was a case not more than three months ago, when an Irish vessel, upsetting her ballast, which is a common thing, was driven in in the dead of night, the crew perfectly helpless; there were nine men on board, some of them below, and some in the rigging; the vessel lay quite on her beam-ends; she was driven into the harbour of Whitby at about one o'clock in the morning, and the lives of those men were saved by that harbour." No one can but rejoice at this; but Mr. Chapman says little for Whitby when he adds, "Of course it was a providential escape; but if she had been diverted from her course—if the indraught of the harbour had not taken her between the piers, the whole of the crew would have been in eternity in less than five minutes."† No doubt this was a most providential escape. Suppose the ebb-tide had been running, or that it had been low-water, or that the flood-tide which was running had set her against, instead of between the piers, what would have become of the Irish vessel then?

But the opinion that Captain Hewett has given of Whitby appears to express tolerably well the general feeling entertained of that place. There are four masters of vessels trading to the Scotch ports, whose opinion I have quoted on Scarborough, seem to think much the same of Whitby as Captain Hewett does. "As to Whitby," they say, "nobody runs there unless they are near to that port." And Mr. George Booth and Mr. Straker, one from Sunderland, and the other a ship-owner of Tynemouth, say, "In 1812 we came out of Yarmouth roads, with a large fleet of 200 or 300 sail, and when we got upon the Yorkshire coast, and off Whitby, about thirty of us bore up for Whitby, and out of thirty only four vessels, with myself, got into the harbour; the others all went ashore behind the piers." And Mr. Booth adds, "I commanded a vessel of 130 tons for five years, and once only took refuge in the harbour of Whitby during that time." I have looked for instances of other vessels being saved by running for Whitby, but I can find none; and as it appears that more have been lost there than saved by it, one need not wonder at the strong feeling which appears to prevail among ship-owners against Whitby in particular, and these tidal harbours generally. With regard to the harbours already existing on the coast, both of these gentlemen are

* Erroneously printed the "*last*" quarter ebb in the report, which is evidently nonsense. Page 3 of Evidence.

† P. 68.

of opinion that the loss "has been increased by the artificial harbours that have been formed along the coast," and they distinctly state, "We find by experience that we generally have those ships to pay for that run for the harbour, while those that keep the sea escape damage.* There is an amusing instance of this, and the consequences which attended it, given in the evidence a little further on. Mr. Aaron Chapman puts the following question: "*Q.* You have stated that you find by experience the more harbours there are, the longer your voyages are; the more they are inclined to run into these harbours. Now, as a man of great experience, and great common sense, (which all Sunderland men possess,) do you not give captains instructions not to put into those harbours, except in case of necessity; and if they do, do you not dismiss them?" To which the complimented Sunderland ship-owner replies, "Such are their instructions, but they will find an excuse to get into a harbour. In the early part of this year I had a vessel of my own of 260 tons; she fetched down as far as Seaham; the wind flew round to the northward and eastward—not a gale of wind; he (the captain of her) thought he might as well take to the harbour before dark, and he went to Hartlepool, and there he lay for a week. If he had kept to my instructions, he would not have gone to Hartlepool, but he would have kept the sea." But the best follows. *Q.* "What did you tell him when he came down?" *A.* "I unshipped him!"† So that sailors are fond of harbours after all in bad weather, when on a lee shore, but ship-owners are not. Perhaps when the vessel got into Hartlepool (a place with one foot water at the entrance at low-water) she would not get out again for a week.

This feeling of ship-owners is accounted for in some measure by the fact, that there is not a harbour on the whole coast south of the Frith of Forth that a vessel can run for with perfect security; the narrow entrances always remaining as obstacles, and the want of water prevailing generally at the time that it is required. Hartlepool is allowed, in consequence of its projecting position, and the high land about it, to be a good place to run for; but these qualities will not alter its character as a dry harbour; and these gentlemen say, in reply to a question as to the benefit conferred by Hartlepool on the passing trade, "Since Hartlepool has become a harbour of itself, which it is now in some measure, a harbour of refuge, we find more losses arise than when it was in its original state;"‡ and even at Sunderland it is acknowledged, that a fleet of ships put to sea from there, if suddenly caught by a gale from the east, although only a few miles outside of the port, "*could not put back again*‖ *with a falling tide.*" Truly these assertions say but little for the asylum harbours of our eastern coast.

* P. 105 of Evidence.
† P. 106, 107, of Evidence.
‡ P. 108.
‖ P. 107 of Evidence.

Mr. Aaron Chapman says in his evidence before the committee, of which he was a member, that when the bill was obtained, authorizing a passing toll (of one halfpenny per Newcastle chaldron) for Whitby, about eight or ten years ago, "there was not the slightest objection whatever—the toll was doubled, and yet the slightest objection was never made, either in the House of Commons or any where else."* Now, it is rather strange that it was only thought necessary ten years ago to give Whitby a passing toll for benefits which it could not confer on shipping since that time, whatever it might have done before. And, supposing that the ship-owners of Sunderland knew all about the bill, their opinions appear to have undergone a very considerable change since that time; for, so far from approving of the measure of a passing toll, they appear at present to deprecate it altogether. And yet Whitby, a dry harbour, has a passing toll for an unlimited period! and that advantage is recommended by the committee on harbours of *refuge* to be continued!

But if Whitby, with two feet on its bar at low-water, is thus entitled to a passing toll, what shall we say of Burlington, which has none? a harbour which is entirely dry at low-water, and not only recommended by the committee on harbours of refuge to a passing toll, but a considerable sum of money, no less than £57,000, is recommended to be expended on it: this same harbour in which it has been stated before the committee that a loaded collier had never been seen. Really there is something so exceedingly absurd in thrusting such paltry places forward to the protection of Government, that one can scarcely believe the committee were in earnest when they did it. But there are some curious facts concerning this dry harbour of Bridlington, which it may not be amiss to look into. We will first glance at these, and then consider the pretensions of Burlington to be considered an asylum harbour—and such pretensions were never yet heard of.

In the course of the last session of parliament, a bill was brought before the house, to obtain a grant of money, to be raised by the passing toll on shipping, for the repairs and improvement of Bridlington harbour. The report before me says, that the last act for Burlington, authorizing the passing toll, "was passed in 1816 for twenty-one years;" and further, it also says, that "unless adequate funds are granted, not only the works now in progress must be suspended, but that the whole harbour will shortly go to decay." The reasons for the above bill being brought in are here tolerably evident. As 21 years added to 1816 make 1837, it is clear that the passing toll for Burlington will expire next year—something was to be done to renew it; for if not, Burlington would speedily go to decay. And what became of this bill, that was to save the dry harbour of Burlington from becoming drier still, and being

* P. 70, Evidence.

silted up? The discussion which took place on this subject is of so important a nature, and so interesting to seamen generally, that I venture to extract it from "The Mirror of Parliament," in which it appears entire. Your nautical readers will not fail to perceive the *sophistry* employed in support of the bill; they will appreciate the *feeling* remarks of Sir Edward Codrington; they will see that Mr. Harland's harbour of Hartlepool, although no asylum harbour, without a passing toll, is better than Bridlington with one; that Mr. Pease certainly enlightened the honourable member who cried out "oh, oh," and who evidently knew nothing of the subject; that Mr. Young's opinion *well* accords with the report of the committee of which *he* was a member; and that Mr. Aaron Chapman quoted the same solitary case of a vessel being saved by Whitby to which I have alluded. Sailors will here see who are their real friends. The extract is as follows:—

Mr. BETHEL, on moving that the bill be now read a second time, said—I think it necessary, sir, to offer a few words in explanation on this occasion. It will be seen that some changes have been made in the bill since it was last in committee. It is now proposed to introduce a clause, rendering it imperative on the managers of the pier to submit an annual account of their receipts and expenditure to parliament, in order that this house may be able at any time to view their proceedings. It is said that it is now intended to tax ports for dues of the harbour, which were not mentioned or set out when the bill was so in committee. But if these parties be favourable to the measure, I do not see what valid objection can be made to it on that account. It has also been objected, that the interests of parties in the northern districts of the kingdom have been overlooked; but it is now proposed to introduce these when the bill shall again go into committee; in short, it is intended to do everything towards making the bill as comprehensive and as satisfactory as possible.

Some persons have, I know, designated this as one of the many new schemes which are at the present moment thrust on the house and the public. The fact is, however, that this is but an application for the renewal of a bill, the spirit of which has been frequently revived and sanctioned since the reign of William III.; so that no one can object to the measure, that it has been suddenly, or by surprise, brought before the house. It is now attempted to construct the pier, because it is thought the circumstances of trade are generally in its favour. Since the bill was introduced in 1816, a great change has taken place in the coasting trade; and the commissioners have now every prospect of bringing the work to a speedy and favourable issue. They have taken the opinion of Mr. Godrich, an eminent engineer; and he augurs well for the completion, from what has been already done. About 200 feet of the new work are now completed. It is true, that this length is

not half of what the pier must extend to; but then it is the most difficult and expensive portion. The rest of the work can be constructed in a comparatively short space of time. It must be gratifying to those interested in the undertaking, and indeed to the public generally, to know, that during the late storms, which have done so much mischief to various edifices, and to the shipping on the coast, the work already done at this pier escaped altogether without injury. For my own part, I have no personal interest in this undertaking. Everybody knows what perils our coasters incur when violent gales blow from the north-east and north-west points of the compass. I have no doubt that 300 sail will be able to anchor at a time under the pier, when it is finished; and thus the danger of Flamborough Head may be escaped. I believe that, within a few years, not less than forty-one whole or partial wrecks have taken place in that vicinity, which might have been prevented if the proposed pier had been constructed then. It is well known, that when a fleet off Flamborough Head, during the prevalence of a north-east gale, miss a certain point, they cannot find any other port in the north of England to put into as long as the gale lasts. The Yarmouth Roads afford no shelter in the northern gales, so that the only shelter is here. As to the difficulty of vessels and boats riding at anchor in stormy weather, the fact is, that if no harbour is provided at Bridlington, there will be no possibility of landing there. This is the opinion of men who best know that part of the coast. The vessels, perhaps it may be said, will be insured; but can we insure the lives of the navigators? And is it not our bounden duty to protect so gallant and invaluable a body of men? If this harbour could maintain itself, I should say there would be a great objection against the principle of passage-toll; but it is utterly out of the question that the harbour can be kept up by the resources of its own locality only. I do call upon the house, if it have any regard for the cause of humanity and justice, to allow this bill to go into committee, by voting for the second reading; then, if any case can be made out to shew that ships in passing should not be liable to toll, it can be properly weighed and disposed of.

Sir Edward Codrington.—I believe many people are not aware of the great importance of harbours on our coasts to British seamen, when the northern gales prevail; for, besides the increase of danger resulting from those northerly winds, the cold with which they are accompanied is so intense, that the men can scarcely perform the duties necessary for the salvation of their ships. It is therefore extremely important that some provision of this kind should be made, and I hope this bill may succeed. For one vessel that is lost upon our coasts in southerly winds, ten are knocked to pieces by the northern gales.

Mr. Harland.—I hope the house will allow me to state the grounds of my objections to the second reading of this bill. I per-

fectly agree with the gallant admiral (Sir Edward Codrington) that it is in the storms from the north-east that vessels on that coast want shelter; but where do they find it? not in Bridlington harbour, but in Bridlington bay, which is a natural bay, in which vessels to any amount can at all times find perfectly secure anchorage in smooth water. I know that coast intimately well, and I will be bound to say, that out of every 500 vessels that may take shelter in the bay, not more than one out of the 500 ever attempts going into the harbour itself. I do not mean to say that there are no cases where the levying of a passing toll is defensible, but I think it is only defensible where a strong case can be made out, that this is absolutely necessary for the maintenance and repairs of safe asylum harbours, which are likely to afford great protection to life and property; and even in such cases, I maintain that vessels should be exempted from these tolls, which belong to other asylum harbours; harbours upon which large sums of money have been laid out to keep them in repair, which have never been maintained by means of exacting passing tolls, and which from time past have been preferred as refuge harbours, to those very ports which seek to levy this tribute upon them. Now, what are the facts upon which the commissioners of Bridlington harbour claim the right of making these exactions? Bridlington harbour is by no means of easy access, averaging at high-water, in neap-tides, a depth of only ten feet, and in spring-tides, of not more than sixteen feet; and consequently capable of admitting only vessels of the smallest tonnage; and, as I said before, the vast majority of vessels never attempt the harbour itself, but find perfect security in the bay. Why, my honourable friends the members for the East Riding of Yorkshire, who have the conduct of this bill, will themselves tell you, that on an average of years, only forty-four vessels have annually entered the harbour; and what a small proportion this is to the 15,000 voyages performed annually along that coast by vessels employed in the coal trade alone, exclusive of the other coasting traders. But, besides extending the period of exacting passing toll from vessels loading at the old coal-ports of Sunderland, Newcastle, &c., included in former acts, this bill purposes to exact tolls from vessels belonging to the new ports of Stockton, Hartlepool, and Seaham, which were not included in former acts. Now, I think I can shew fair grounds why Hartlepool should be exempted from these duties. Hartlepool has from time immemorial been used as an asylum harbour. I have myself seen upwards of thirty vessels at a time find shelter in it from storms; it is very easy of access; considerable sums of money have from time to time been laid out upon its necessary repairs, without any assistance from a passing toll—a harbour-due of 2d. per ton being required from those vessels only that actually take shelter in the harbour. Within the last few years £80,000 have been laid out

upon the improvement of the harbour, and in the construction of docks; this has considerably improved its capabilities as an asylum harbour; it is at the present moment capable of holding upwards of 200 vessels. £10,000 more is purposed to be laid out upon it; and when completed, it will hold double the number of vessels that it now does, and will admit of vessels of small tonnage getting in at any state of the tide, and those of a larger size will be enabled to get in at a quarter flood-tide. In addition to this, the harbour dues on vessels seeking shelter have been lowered from 2d. to 1½d. per ton.

Let me ask my honourable friends, the members for the East Riding of Yorkshire, why vessels belonging to Great Yarmouth are exempted from the provisions of this bill? They are very justly exempted, because Yarmouth is sometimes used as a refuge harbour, and because sums of money have from time to time been laid out upon its maintenance and repair. On the same principles, then, but on much stronger grounds, I claim exemption for Hartlepool; for while Yarmouth is but a bad harbour, and capable of holding vessels of only small tonnage, Hartlepool has for a long time past been esteemed as a safe and favourite shelter harbour; and since the late improvements have been made in it, it is by far the best asylum harbour on the whole of the east coast. I will only make one more remark, namely, that in exempting Hartlepool from the provisions of this bill, you commit no injustice, nor any breach of faith, upon the commissioners of Bridlington harbour; because any sum of money that they may have expended upon that harbour, cannot have been laid out under expectation of receiving any return from Hartlepool, which has always been an asylum harbour, and an asylum harbour only, until last year, when it was first opened as a port for the shipment of coals. Under these circumstances, sir, I move, as an amendment, "That this bill be read a second time this day six months."

Mr. Pease.—I second the amendment. It appears that not more than one vessel in one thousand is to pay toll, so that the revenue to be derived would never be sufficient to defray the costs of the undertaking. No vessel from Scotland, or any part of England, is to pay toll, save and except the poor colliers, who have to pay already for bringing coals over-land, in all directions, to London. Is it fair that they should be called on to pay a toll of £20,000 per annum? I am told that there is a tax already levied on the quantity of coals they carry. Is it fair that they should pay for a harbour which never yet was any harbour of the asylum kind, for it is often quite dry. There is no water in it eight hours out of the twelve.

An Honourable Member.—Oh! oh!

Mr. Pease.—I have seen it with my own eyes. If a vessel once gets into the sound of Bridlington harbour, she will never get back

again. I call upon the house to protect the public, and not to tempt people to lay out their money, without any prospect of a return.

Mr. LABOUCHERE.—I do not rise for the purpose of entering into the whole merits of the case, but merely to say that the principle of the bill is objectionable, and I think we ought to be very cautious in deciding upon a proposition to establish a toll of this description. I feel it my duty to support the amendment.

Mr. G. F. YOUNG.—I am very glad to hear that the Vice-President of the Board of Trade is opposed to the principle of levying passage-tolls. I only ask the house to consider that we have before us already the Scarborough harbour bill, and we are threatened with another refuge-harbour. I am not opposed to making refuge-harbours, although I have been charged with a want of humanity for opposing this sort of schemes. I say that these undertakings ought not to be left to be taken care of in this miserable way. What is the use of persons coming forward to tell us that they wish to protect life and property, when we know that their object is solely to promote their own private and particular interests? It appears by the original act, that the legislature considered that the tax would be sufficient to cover the expense of the harbour, and that it was not intended to institute a perpetual tax. Whenever such bills are brought forward by private individuals, for their own benefit, let them tax those who make use of the harbour, but let them not have power to tax the country generally.

Mr. AARON CHAPMAN.—It is on the ground of public benefit that I rise to support this bill, because I can safely challenge any honourable member to prove that it will not be productive of great advantage to the public. I have had an opportunity, year after year, of forming a judgment of the capabilities of this harbour, which I maintain is one of refuge for life and property; and I never had any occasion to alter that opinion. Indeed, men of judgment and experience never doubted it. This toll cannot be strictly called a tax on shipping; it is not a passage-toll; it is a toll levied in the most convenient way, and at the lowest rate; it is cheerfully paid, and eventually it costs the consumers in London, I believe, 5½d. per head per annum. I think there is no man possessed of common humanity who would oppose this bill. If there were the slightest injustice in it, my constituents would take the alarm immediately; but they are aware that it will be beneficial to the shipping interest, and cause the salvation of life and property to a great extent. It is only a month ago that I took the opportunity of calling the attention of the honourable and learned member for Dublin to the case of a vessel which, in a tremendous storm, was driven into the harbour of that little borough which I have the honour to represent, at one o'clock in the morning. If she had gone ten yards either way, and there had been no

asylum harbour for her, she must have gone to pieces, and the crew would have been launched into eternity in five minutes. It is highly desirable that asylum harbours should be maintained in all dangerous parts of the coast; and I call upon the house to support this bill. The tax is so small, that it would be strange indeed if it were opposed on that ground, and the interests of humanity were injured by its rejection.

Mr. ARTHUR TREVOR.—I think that a sufficient case has not been made out for this bill, after what the honourable member for South Durham has stated. I shall therefore support the amendment.

Mr. BEILBY THOMPSON.—I have been called upon to support the second reading of this bill, which I do, because I feel that the people of Bridlington have a claim upon this house for the protection which they have already afforded to the life and property of others, by opening this harbour. Since the passing of the last bill, they have expended not less than £37,000 or £38,000, of which they have regained, by the duties that were levied on shipping using the harbour, only about £15,000. This bill is nothing more than a renewal of the old act, and I must say that I am surprised it should meet with any opposition.

SIR GEORGE STRICKLAND.—I am perfectly convinced, that if this harbour be not kept up, many lives will be annually lost, and much property destroyed. I think it is our bounden duty to protect the lives of our seamen; and therefore I shall vote for the renewal of an act which was passed 140 years ago, because the necessity for the measure still remains. It frequently happens during the northern gales, that from 200 to 300 ships are making signals for assistance, and I put it to the humanity of the house, whether that assistance should not be provided? I have been told, it is true, that Bridlington harbour is of no use; but it has been my fate to be placed personally in circumstances which have happily proved the fact to be otherwise; and I must therefore support the second reading of the bill.

Mr. POULETT THOMPSON.—It will be well, I think, for the house to consider this question carefully before it shall come to a decision upon it. I do not wish to enter into the merits of the bill; it may be a good thing to keep up Bridlington harbour, and it may be very desirable to pass a bill for that purpose; but this is one of that class of private bills, the object of which is to establish a general taxation—a principle, against which I am satisfied that it is most desirable the house should set its face, decidedly, once and for ever—as indeed it should do against all measures of this kind. If it be desirable that the nation should be taxed for the support of a public object—if that be understood to be the case, let a public bill be introduced, and let its merits be discussed in the house, in order that the nation may know that it is called upon to pay to a

certain fund for the general good; but do not let us agree to a private bill which confers the power of general taxation; do not let us admit a system of general taxation into private bills. I do not offer any opinion upon the propriety of giving public support to Bridlington harbour, but I say that the public funds and public taxation ought not to be voted away by means of private bills.

Colonel Sibthorp.—I hope that this lesson which has just been read to us, and which, in truth, is somewhat strange, will go forth, and that it will be properly attended to; for it is a lesson which ought to be regarded,—"Do not let private interests step in and have any weight with honourable members in the discharge of public duties." And you follow this up by a neglect of the public duty of humanity to your merchant seamen, out of a too tender regard for the private interests which you fear may be compromised by the measure before the house.

After many cries of "Question, question!" the honourable and gallant member sat down, and the house then divided on the question, that the word "now" stand part of the question, and the numbers were—

Ayes	83
Noes	106
	—— Majority, 23.

The main question, as amended, was put and agreed to, and the bill was put off for six months.

Thus, the House of Commons expressed their opinion of a place as being unworthy the protection of the state, so far as the appropriation of the public money went, to which harbour *the committee on harbours of refuge* devote nearly one half of their report in commendation.

The bill on which the hopes of Burlington were founded being thus lost, it was necessary to do something, for the local funds were insufficient to carry on the projected works; and the next thing done is to appoint the select committee to investigate the alleged deficiency of harbours on the eastern coast, with Mr. Bethel as chairman.* You, Mr. Editor, congratulated us seamen upon it; and you no doubt anticipated, as I did, something more in the shape of a harbour of *refuge* being found, than the dry harbours of Scarborough, Whitby, and this same Burlington already rejected.

* The following is extracted from the votes and proceedings of the House of Commons. On the 15th of Feb. a bill for the improvement of Bridlington was reported, and ordered to be brought in by Mr. Bethel. It was read the first time on the 25th Feb. and ordered to be read a second time. On the 14th March the bill was brought forward by Mr. Bethel, and lost—the ayes being 83 and noes 106. On the 17th March, Mr. Bethel gave notice he would ask for the present committee, and on the 22d it was appointed.

I should be sorry to assert that we have here the origin of this committee; but truly, when we find it obtained by Mr. Bethel, and that the harbour which falls under his peculiar patronage occupies so large a portion of the report, for which very harbour he failed in obtaining the favourable attention of the House of Commons, appearances are very much like it; and for my part, I cannot help thinking, that, but for the ill success of Mr. Bethel at first, the committee on harbours of *refuge* would never have been heard of.

But what is said of this harbour, after all, and what pretensions has Burlington to the large share of attention which the committee has bestowed on it? Mr. Walker, the engineer of this harbour, says as little in its favour as Sir John Rennie did of Scarborough. He states in his evidence that the depth at the mouth of the harbour at high-water spring-tides is *only fourteen feet;* and as those tides on an average do not exceed sixteen feet, it follows that the deepest part of the harbour, namely, its entrance, is actually two feet *above* low-water mark. Here is a harbour of *refuge!* No wonder the ship-owners unship their captains for running for such harbours. But what is the width of Burlington harbour at this entrance? Mr. Walker says seventy feet; but, that if the proposed improvements be carried into effect, it will then have 150 feet. Mr. Walker proposes to make new north and south piers, in fact to make a new harbour, at an outlay of £56,572; and he admits that the new south pier would not give much more water, but the depth might be improved by dredging. One of the witnesses examined before the committee states, that the bottom at the entrance of Bridlington is rock, and the whole harbour sand, over a bottom of clay; but no doubt Mr. Walker, as an engineer, knows more about it. Now, if we bear in mind that the spring-tides rise sixteen feet, and neaps eleven feet, it is clear that the depth at high-water spring-tides at the entrance of Bridlington must be only fourteen feet, and at neap-tides nine feet. It is scarcely possible to believe that such a harbour can be called an *asylum* harbour by any one, or is meant to be used as such when the 'scend of the sea must reduce the available depth at high-water of springs or neaps to some feet less than it would be, and depending of course on the more or less agitated state of the sea. And what area has Bridlington harbour, or is it to have, when improved? fourteen acres and a half, all dry at low-water!

Captain Hewett was asked by Sir M. Ridley, one of the members of the committee, "Then, you consider the facility afforded in taking a harbour a very material ingredient in constituting a good refuge harbour?" to which Captain Hewett, as a seaman, naturally replied, "Certainly;" and no doubt by widening the entrance from 70 to 150 feet would "very much" improve Burlington, as Mr. Jenkinson says: and Mr. B. S. Lawden also says he has "seen ships

lost in consequence of the defective entrance."* But here is a specimen of Burlington harbour given by Mr. Benjamin-Sharp Sawden. Mr. Sawden is asked by the chairman to state what he wishes to add to his former evidence, and proceeds thus: "In the spring of the year 1828, I recollect a very severe storm from the north-east, and the harbour's mouth (Bridlington) was choked up in consequence of the large vessels coming into the harbour first. The harbour shallows very rapidly, and I never at any time saw it more than half full. If the larger vessels come in first, they impede the smaller ones going into the harbour. Upon the occasion I have alluded to, the harbour-mouth was choked up, and four vessels that ran for the harbour could not get in, and they all went on shore within half a mile of it. One of them was a fine coppered vessel, which I bought. She was sold for the benefit of the underwriters. The name of the vessel was the Lovely Ann. The present state of the harbour is such that it shallows at the rate of one yard in one hundred as it advances up the harbour. There is just half the water at the upper end as there is at the entrance."

So says Mr. Sawden, and there are one or two points in this testimony of his which the committee on harbours of refuge had done well to have considered before they recommended the improvement of Burlington. The first and most important is simply this: Allow that the improvements are made; they do not increase the depth of water, only the width of the entrance, and the area of the harbour. Now, as large vessels draw more water than small ones, it must naturally be expected that they will block up the entrance by running aground there, as they have done already, or are they to wait till all the small vessels are snug in before them. Therefore, what good will the projected improvements do at Burlington? will they give additional refuge to the vessels on the coast? The answer is clearly, no; they will rather tend to lure vessels to their destruction, from the very semblance of the supposed "improvements." One of the witnesses examined before the committee, Mr. Christopher Tenant, who professed himself "the projector of all the rail-roads throughout England,"† says with regard to Burlington, when he is asked, "Are you aware that there is a rapid stream through this harbour?" replies, "I believe all the old women of Billingsgate would drink it out in half an hour;"‡ and another witness, Mr. Barber, a ship-owner of Yarmouth, is asked, "Do you think that it would be safe for vessels upon that coast, if the harbour was totally washed away, and destroyed, for want of funds? (Was ever a harbour of *refuge* so insulted?) And Mr. W. Barber replies, "I do not know that it would do any harm if it was!"

Now, admitting that the old women of Billingsgate would prefer their own peculiar beverage, to the dirty stream that runs through

* P. 67 of Evidence. † P. 88. ‡ P. 89 of Evidence.

Burlington, and that the fishermen and owners of small craft at that place would sooner see their harbour improved than dried up, there is yet much truth in both of these statements when a harbour is considered on the grand scale of affording an *asylum*, and for that purpose requiring the aid of the national funds; and the committee would have again done well to have considered, before they recommended the protection of Burlington, that *depth of water*, as well as facility of access, are among the first qualities required to constitute an asylum harbour. The committee were plainly told by Mr. Thomas Chadwick, if they could not see it themselves, that the harbour "could never be made accessible at dead low-water."* But, by way of influencing the committee, we find in the midst of their sittings a letter brought to the chairman, containing a return of vessels put into Burlington for refuge, signed by their commanders, praying that the harbour may be improved. This document of course is deficient of all information as to when the vessels put in, or their amount of tonnage; and the only clue we have to their size is the nature of their rig now and then against the vessels' names. For instance, the first three are schooners—the schooner Fowell,† schooner Ann, and schooner Brothers—then comes the Trio, what rig that may be I cant tell, never having seen one in the course of my professional experience; perhaps it alludes to the preceding trio, or it may be the name of the vessel after all; but as to the rest, their size and rig is better known perhaps to Mr. Sidney Taylor, clerk to the commissioners of Burlington pier, than to the committee, except that it does appear that another of them is a brig, and another some Dutch galliot, known by the name "Frau Cristina." Really this return of twenty-six vessels is but a sorry document, Mr. Taylor, on which to found the claims of your harbour of Burlington to an extension of the passing toll. It is to be hoped that your returns to the commissioners are a little more business-like kind of things, or Burlington harbour indeed must be in a bad way.

I have extended this essay far beyond either the limits which I had prescribed myself, or which the objects of it deserve, but there is still another point or two to which, with your permission, Mr. Editor, I will allude.

The returns which were laid before the committee shew, that since the year 1816 to the present time, the sum of £38,385 have been expended on this dry harbour of Burlington; and the committee gravely recommend that a further sum be granted, (or a continuation of the passing toll, to enable them to raise it,) amounting to £56,572, making a total of £94,957, to be thrown away on a dry harbour of 14¼ acres, that can never be made accessible at all times to any vessel whatever, and which, when it is so, will only enable some three or four vessels to run aground in, and

* P. 55. † P. 77.

thus choke up its entrance. With regard to Scarborough, the sum of £68,800 has been expended on it since the year 1806, and a further sum of £49,000 is recommended to be laid out on its improvement—on the improvement of another dry harbour, which can never be accessible at all times, and which, when improved and enlarged as proposed, there is opinion enough recorded in the evidence before the committee to warrant the belief that it will fill up as it has done. If a quantity of deposit be annually removed from Scarborough, amounting to seven thousand and twenty tons, at an expense of £2,284, while its superficial extent has been 14 acres, how much more deposit, and at what expense may fairly be anticipated annually, when the area is extended to 19 acres.* This is a fair sum for a school-boy; and I think he would find that the increased deposit to be removed, would amount to 9527 tons annually, at a total expense of £3099. That this deposit would take place, or some quantity near it, may be fairly inferred, the producing causes remaining the same. Now, out of this sum of £68,800, expended already on Scarborough, it appears, by the return of money collected† for Scarborough, that £56,795 has been received as "duty on coals laden at Newcastle and its members on board vessels passing Scarborough"—"Duty on coals laden at Sunderland"—"Duty of 1d. for every five tons on ships passing coastwise from [Sunderland] to go by Scarborough!' The remainder 22,005 has been fairly made up by the harbour returns for 29 years! Thus it is clear that the sums levied on coals for the benefit of the passing trade, to make Scarborough an available harbour to ships in distress at all times, have not succeeded, nor will they ever do so, and yet the legislature is called on to continue this tax for these useless dry harbours.

But although Mr. Bethell gained his point after all, and obtained a committee on *refuge* to take his harbour under their especial sanction, and to recommend it with Scarborough and another, to the favour of the house, it is to be hoped that, in the course of the next session, when this memorable report does come before the House of Commons, that the principles of those who opposed it before may yet prevail; and that while the claims of these harbours to a passing toll are considered, it will not be forgotten, that their representatives in parliament formed a portion of this committee, a qualification which, although it may invest them with a good share of local knowledge, adds not one iota to the disinterested spirit which should either guide them in committee, or pervade their concluding report. I do not impute wrong motives or actions to any of these gentlemen, but it is impossible not to see

* The proposed addition may make the total area more or less, but this assumed for the present.

† P. 51 of Evidence.

that the chairman, who is the member for the east riding of Yorkshire, in which Burlington is situated, having failed in the House of Commons of getting the passing toll continued for that harbour, immediately obtains a committee to sit on an inquiry into the alleged deficiency of harbours of *refuge* on the *north-eastern* coast of England, whereon Burlington is situated; and that Burlington occupies, as I have before said, one-third of that committee's report! Again, that for Scarborough Sir John Johnstone is the member in parliament, who was also on the committee! Again, that for Whitby, Mr. Aaron Chapman is the member in parliament, who was also on the committee! and these three places are selected by the committee, in their report, for the especial patronage of the state! No doubt these gentlemen, as well as their constituents, are desirous for the continuation and improvement of their harbours; for they are, no doubt, useful to their own local trade and fishing craft; but as it is clear, that as dry harbours they cannot afford protection at all times to the passing trade, it is obviously an imposition that, that passing trade should support them as it really does. There is not one that could receive a single loaded collier at all times, and yet they derive their support, nay their very *existence*, from these *loaded colliers!* It is to be hoped, that the government will legislate for the whole country when this notable report comes forward. If these harbours of Scarborough, Burlington, and Whitby be desirable places of resort for their own tiny vessels, let them be maintained by their own means, and no longer add to that tax on shipping which falls on the public; that tax which has been too long authorized, by their holding out that protection to ships and seamen which they cannot afford, but which they ought to afford, as HARBOURS OF REFUGE for

A BRITISH SEAMAN.

BAUDSEY SAND.

Trinity House, London, 21st September, 1836.

THIS Corporation having caused the North-East Buoy of Baudsey Sand to be moved about three-quarters of a mile in a north-east direction from its former situation, notice thereof is hereby given; and that the said buoy now lies in five fathoms at low-water spring-tides, with the following marks and compass bearings, viz.:

Aldbro' Church well open to the Eastward of Orfordness Beach, ...	N.N.E. ½ E.
Baudsey Church open twice its width to the Westward of the second Tower below Baudsey Cliff	W. N. W.
N.E. Shipwash Buoy	S.E. by E. ½ E.

N.E. Whiting Buoy . . . . . N. by E. ½ E.
Baudsey Beacon . . . . . W. by N. ½ N
Orfordness High Light . . . . . N. N. E.

By Order, J. HERBERT, Secretary.

ERICSSON'S LEAD—REPORT OF LIEUT. BISSON.

H. M. Brig Partridge, Plymouth, Sept. 22, 1836.

MY LORD,—I have the honour to acquaint you, for the information of my Lords Commissioners of the Admiralty, that, in pursuance of orders received from Rear-Admiral the Hon. Sir Charles Paget, I proceeded to sea in H. M. brig under my command, accompanied by Mr. Ericsson, with his several sounding instruments, and commenced at once operations within soundings. I continued that duty until we had reached a sufficient depth to give the instruments fair and repeated trials, the results of which (taken with the utmost care every second hour, by night and by day) I have the honour to inclose in the form of an abstract.

And I beg leave to state, that the manner of using Mr. Ericsson's lead is in my opinion perfectly simple, requiring only the care to see that no water remains lodged in the tube, and the stop-cock at the bottom of the instrument turned previous to using it, which our ship's company very soon understood. It is also advisable to lower the machine into the water, instead of plunging it, after the manner of old deep-sea leads, because additional air will be forced up the small aperture in the top of the instrument by the sudden plunge, which will take longer to compress, and consequently not give the soundings with so much accuracy. There is the same objection to using it as a hand-lead, (if swung over the head,) besides the risk of striking the ship's side; but it can be used as such if dropt gently into the water, and will be found a valuable instrument in obtaining soundings in shallow water, (say from ten fathoms, and upwards,) when a ship is going at such a rate that a leadsman in the chains cannot catch bottom with the common hand-lead, it will indicate the depth correctly, without reference to the quantity of line out. It will also be found extremely useful in deeper soundings, under all circumstances, but especially when time is precious, and a ship under full sail is anxious for a cast, going at the rate of six or seven knots, as much time must of necessity be lost when using the old lead, in shortening sail, heaving to, and making sail again, particularly in a case where it would be desirable to make land before night. When the instrument is hauled up, it must be kept in an upright position until the soundings are read off, then the stop-cock must be opened, to permit the water confined in the tube to escape.

Mr. Ericsson does not profess that the sounding instrument shall give very great depths, going at a very great rate; there is no necessity for its doing so; on the contrary, it would employ too much line, and lose too much time in dragging it in; but I have no hesitation in stating, that seventy or eighty fathoms may be obtained, going at the rate of six or seven knots, provided the line be freely given. It is, however, calculated to reach any depth, when the ship is stationary, and particularly when used with wire instead of line.

It unfortunately happened that it was not calm when the Partridge was out of soundings, else, by means of a wire two miles in length, (which we had on board,) some very interesting results must have been obtained. I endeavoured by every means to render the brig stationary, even to furling all the sails, and dropping the kedge anchor, with seventy fathoms of hawser; but to no purpose, there being still too much drift for the wire, which requires to go down very perpendicularly. I regret to say, that in these trials Mr. Ericsson lost a very scientific instrument (for ascertaining the compressibility of water at given depths) by a sudden jerk of the wheel detaching the instrument. I would recommend, however, the sounding instrument and wire for all purposes where great accuracy is necessary, and on all occasions of surveying where opportunities can be seized for bringing a ship stationary. As to correctness, I tested the instrument on several occasions by means of a measured wire, and found them very exact; and, in short, I consider Mr. Ericsson's lead an instrument truly useful, and extremely scientific, and think it cannot fail to answer every purpose intended by the ingenious inventor.

I have the honour to be, &c. &c.

PHILIP BISSON, Lieut. and Commander.

To The Right Hon. Lord Amelius Beauclerk,
Commander-in-Chief, &c. Plymouth.

[We have not considered it necessary to give every day's proceedings, as it would perhaps be a useless repetition, and have therefore selected three, including the greatest variety of depth. The depths obtained with the new lead are generally rather less than those given by the survey of Captain White, on which we have laid them down. But there are two instances in these days in which they are greater. On the 13th Sept. at 10 A.M. the depth by the chart is 57 fathoms; at noon on the same day it is 58 fms. ED. N. M.]

Date.	Time.	Latitude.	Longitude.	Depth in Fathoms.	Nature of Soundings.	Rate in Knots.	Remarks.
1836	P.M.						
September 12th	6h 30m	Off the Rame Head		33	Coarse ground - - -	7	
	7 30	Off the Eddystone		37½	Ditto - - -	7½	
	8 0	Eddystone, S.E. by E. 6 miles		27 24 25	Ditto - - -	hove to	Tried our own deep-sea lead at the same time, which gave 32 fathoms—26 ditto —26 ditto.
	10 0	Eddystone	E. ½ N. 10′	28	Dark-grey sand - - -	4½	
	Midnight	Lizard lights N.W. b.W.½W. St. Ann's light North		41½	Dark sand and stones - -	hove to	42 fathoms by our deep sea line.
September 14th	2h A.M.	48° 50′ N.	6° 38′ W.	70	Fine sand and small shells - -	3	
	4 0m	48 46	6 44	72	Ditto and broken shells - -	3½	
	6 0	48 39	6 51	66	Ditto ditto - -	3½	
	8 0	48 34	6 57	74½	Ditto ditto - -	2½	
	10 0	48 33	6 59	81	Fine white sand, with one or two broken shells	1	
	Noon	48 31	7 01	80½	All broken shells - - -	hove to	An excellent cast, with measured wire instead of line, by which we tested sounding instrument
	2 0	48 28	7 07	76	Coarse sand and small stones - -	4½	Barometer 30·6°, Thermo. 66°. Capt. White lays
	4 0	48 22	7 17	95	Ditto and pebbles - -	4½	[down 83.
	6 0	48 14	7 28	101	Coarse sand, and broken shells, & many pebbles	4	
	8 0	48 07	7 42	109	Ditto, with less pebbles - -	hove to	
	10 0	48 04	7 52	106½	Sand and broken shells - -	ditto	
	Midnight	48 02	8 00	180	Fine brown sand - - -	ditto	
September 15th	2h A.M.	48 0	8 07	Tried for soundings with two coils of white rope (2 in.); no bottom, tube indicated 220 fathoms.			
	3 30m	47 58	8 10	Tried again with four coils of white rope; no bottom, tube 470 fathoms.			
	5 0	47 57	8 20	Tried again with four coils, but no bottom, and the tube had been down as deep as before, 470 fathoms.			
	10 and Noon	47 53	8 45	Hove-to under low sail, but there was still much drift; tried a heavier instrument, and deep-sea lead attached, and threw over six coils of white rope, (which took two hours to haul in again,) but did not reach bottom, although the tube had gone down 660 fathoms.			
	2 0	47 54	8 48	Furled all the sails, and dropped the kedge-anchor with seventy fathoms of hawser, and tried to sound with the wire; veered a lead 300 fathoms, but the brig had still too much drift to get a perpendicular cast; hove it up again, and made sail to the north.———Lost a scientific instrument for ascertaining the compressibility of water at given depths; a sudden jerk detached it from the wire.			

Remarks on the British Settlements on the Eastern Coast of Burmah.

By Henry Davy, R.N.

The Coast of Martaban and Tanasserim are easy of access, both in the N. E. and S. W. monsoons, and although the Andaman islands afford considerable shelter from the heavy seas which, during the latter period, are driven into the Bay of Bengal, yet is the coast sufficiently exposed, but that for the shelter of its harbours, and excellent anchorage, it would be deemed unsafe to approach.

In the N. E. monsoon, a ship leaving the Sand Heads, should steer about S. E., or if the current to the southward should be found stronger than usual, more easterly, passing mid-channel between Cape Negrais and Preparis Island, or, if bordering on the weather shore, round Sunken Island in not less than twenty fathoms; the depths in this channel will be found deepest towards Preparis. From this the soundings become regular, with mostly mud bottom, decreasing as you advance eastward. On no account make the low land, or steer higher than E. S. E. until you have passed the longitude of Bragu Point, as the shoals off the mouths of the Irrawaddy extend farther out than laid down in the Admiralty charts. After passing that meridian, stand on, and make the land about Double Island, the Table land and Peak, to the eastward of Amherst, being very remarkable, and visible at the distance of ten to fifteen leagues, which, together with the high land of Martaban to the N. E., first seen off deck in about 15 fathoms, will be found excellent guides in closing with the land. The parallel of 16° N., should not be crossed on any account until within five miles of the coast, as the tides there are at the strongest and the dangers of Bruxe Island, and the flats at the mouths of the rivers, are very great. Double Island is not easily distinguished until well in with the shore, it is about 100 feet high, as many long, and thickly wooded; indeed, it resembles an immense bush, and is very inconsiderable as compared with the high lands in the back ground. Its double appearance is caused by a chasm in the trees, and visible on any bearing between N.E. b.E. and S.E.; the island bears S.bE., 12 miles from the Upper Quekmi Pagoda, is bold, and may be safely approached within a mile.

Ships bound to Amherst, in the S. W. monsoon, should endeavour to make the land a little to the southward of Callagouk, and in the event of bad weather, or a threatening appearance, more particularly if it should be at or near the springs, should not think of anchoring at Amherst, but run inside Callagouk, and anchor in 6 to 9 fathoms. The island of Callagouk is about 5 miles in length, moderately high and peaked, very woody, as indeed the whole country is, irregularly formed, with rocky sides, and trends

with the main land, from which it is distant 4 miles. This space is a most secure and desirable anchorage, easy of ingress and egress, and perfectly sheltered from the prevailing winds at that season. The entrance is round the south end of the island, giving a berth of a mile to the islet and shoal, which lies half a mile from the point; the inshore side of the islet, and of Callagouk, is bold and clear of danger. Fresh water may be had on the N. E. part of the island; fuel is in the greatest abundance, and most excellent fish may be procured. A dangerous shoal stretches 6 miles to the N. N. E. of Callagouk's North end, and the passage that way is about a mile wide, formed between two shoals, the North shoal of Callagouk, and an islet on the spit of a rocky shoal projecting out from the main; this channel is not in use. Double Island and the North end of Callagouk bear from each other S.bE. half E., and N.bW. half W. 17 miles, and in working ship, and standing inshore, do not pass that line of bearing; to a stranger this will afford the best possible guide. No part of the coast should be approached nearer than two miles, on account of the strong tides, and rocks and breakers, which jut out from the shore. Proceeding on to Amherst, great attention must be paid to the tides, and large vessels may anchor with the reef buoy bearing N.bE., and the upper pagoda, N. E. to E. N. E. in 10 fathoms, low water.

Tides.—High water on full and change of the moon at Amherst Point, 2 hours and 2 hours 20 minutes at the reef buoy; the greatest rise and fall is during the S. W. monsoon, when it is often 26 and 28 feet, and the velocity 6 to 7 knots. Hence during strong S. W. winds, with a sea, and such a rapid tide, the anchorage is unsafe. It is at this time that the value of Callagouk's harbour can be properly appreciated. In the N. E. monsoon the rise and fall is 18 to 20 feet, and rate of tide 3 to 4 knots per hour. The change of the tides is effected almost instantaneously, indeed there may be said to be no slack water. The ebb tide coming out of the river may be seen at some distance, it brings a vast accumulation of dark-coloured matter, which contrasts strongly with the ocean sea,—it comes down with great force, and when it strikes the ship, it makes, as sailors have it, "all grin again." The strongest tides are found on the parallel of the river, and are not felt at the distance of 60 miles from the land: the strength of the tides also take off as you pass to the southward;—with a 6 knot tide at Amherst it will be found to have lost half its rate at Callagouk; and 10 miles farther to the southward, very easy.

The island of Pelew-Gewen, or Bruxe, which fronts the coast of Martaban, is about 6 leagues in length, and 3 at its broadest part; it is moderately high, being rather more elevated, and having thick clusters of trees on its north and south ends. A remarkable white pagoda is situated on its south end on the eastern part of

the highest land, and appears just above the trees; the tops of the trees on the coast land are not visible at a greater distance than 4 to 5 leagues. This island, which is nearly surrounded by reefs and shoals which stretch far to seaward, ought on no account to be made but from the southward. The dangerous bank at its south end, named the Godwin Sand, extends due south 7½′, and is for the most part dry at low water; it is more than 4 miles in breadth, and forms the western part of the entrance of the channel leading to Moulmein.

The channel to the northward of Bruxe is choked up, and is at present only fit for boats. Between the eastern coast of Bruxe and the main, is the only channel by which a vessel can reach Moulmein, the distance from the reef buoy is 27 miles, in nearly a north direction; the obstructions in this channel are very great, and liable to much change,—hence is a skilful pilot necessary. The reef buoy (a black beacon buoy) lies N. W., nearly two miles at the extremity of a ledge of rocks running out from Amherst Point, and marks the channel between the reef and the Godwin Sand, a distance of ¾ of a mile, with 6½ fathoms water mid channel, and 5 to 4 fathoms on either side; and as the flood sets to the N. N. W., right on the spit of the Godwin, it is necessary to keep close to the buoy, and with the wind off Amherst steer up with the buoy two points on the lee bow, and you will then barely fetch it.

The pilotage charge inside the reef is 35 sicks for 10 feet, and 10 rupees in addition for every foot above.

The British territory in this part, is bounded on the north by the river Athan, in latitude 16° 31′ N, and is a strip of coast about 400 miles in length, varying from 15 to 60 in breadth, in nearly a S.bE. and N. W. direction, with high mountainous lands in the vicinity, and is well watered by numerous rivers, the largest of which is the Tavoy and Tanasserim, having towns of the same name, together with Magui, on their bank; there is also the town of Yeah, and two or three smaller places. The coast is fronted by a number of islands, many may be termed large, and possessing fine harbours. This late acquisition comprises the coasts of the provinces of Martaban, Tanasserim, and part of the province of Kraw.

The town of Moulmein is the seat of government, it is a flourishing town, situated on the south side of the mouth of the river Athan, and faces Martaban, which is the frontier town of the Burmese, and stands on the point opposite. These rival towns, situated at the junction of three rivers, the Sanluen, the Guine, and the Attran, forms a very interesting view, with a noble sheet of water sufficient for a large fleet of ships; the distance across is about two miles. The native part of the town is built of bamboo, along the banks of the river, and raised on piles to allow the tide

to flow under, and carry off the filth; it contains about five thousand inhabitants, principally Burmese, and people from the adjacent country, also a great number of Bengalese; beside these, there are the convicts sent from the Presidencies, and the military, consisting of the King's 62nd regiment, the 45th Madras N. I., and a company of artillery. The cantonments are prettily situated on the high ground, the officers are commodiously accommodated; there is also a church, and a theatre, and on the top of the hill is a handsome Burmese pagoda. The climate of Moulmein is very superior to that of Bengal, and invalids receive great benefit from a sojourn there. The fogs are very dense during the winter months, more particularly from January to March, when the coast is often enveloped for several successive days; they are not, however, unhealthy, and the cold is just sufficient to cause the residents to case in woollen.

There is very little trade as yet, but from the quantity of fine timber in the neighbourhood, and the facility with which it can be transported, this place will, no doubt, become of consequence for building ships,—several have already been built, and put out of hand in a very creditable manner, and there is now a ship of 600 tons under repair,—the principal building place is at Devil's Point, on the Isle Bruxe, called Natmoo Dock, where there is often a rise and fall of 28 feet.

The forests of teak are of the most valuable description, and great quantities of timber are sent to Calcutta. The other towns on the coast appear also to flourish, and the whole bids fair to greatly improve under the British government. In the N. E. monsoon it is scarcely possible to find more beautiful cruizing-ground than among the numerous archipelago of islands, and whole sea between the Andaman islands, and the main land; the temperature is pleasant, with smooth water, and cold northerly breezes. In the S. W. Monsoon it has also its advantages, in smoother water than in the Bay of Bengal, and the numerous harbours and anchorages, which are perfectly sheltered from all winds, and affording refreshments for ships' crews.

Amherst Town is the out-port, and is at present a but a village, containing from four to five hundred inhabitants, having a commandant, and a few soldiers; it stands on the point of a peninsula, and is so low that it cannot be seen at a greater distance than nine to ten miles, the lands in its vicinity are high and peaked, and may be seen in clear weather nine leagues. On Amherst Point is a white pagoda, called the Upper Quekmi Pagoda, in latitude 16° 3′ N., and longitude 97°, 39′ E. The lower pagoda is also white, and is built on the rocks off the point; there are also several pagodas along the coast. There are passages for boats over the reef, but it requires great care and attention to the tide; the heads of the rocks are visible at half-tide,

and the surf appears to break the whole length of the reef with much force. Brisbane Island is close to the shore, and between ¼ and ⅛ mile from the lower pagoda; it has a very pretty appearance: indeed, Amherst has a very agreeable aspect, and the country is highly interesting.

In closing these remarks, it may be useful to mention the circumstance of the extraordinary ripples which are so frequently met with in the upper parts of the Bay of Bengal, and near the entrance of the Straits of Malacca. These ripples resemble an impetuous tide bubbling and breaking in front of an obstruction, and yet from the observations that have been made on them, they appear not to have the effect of current, or in any way to throw a ship out of her reckoning. They are most frequently met with in calm weather, or in light winds; often they are seen on the lee-beam, having the appearance of a dangerous shoal, rippling and surging with much force, and advancing towards the ship against a single reef-top-sail breeze, at the rate of two to three knots per hour. In striking against the ship, the water often surges over the hammocks of small vessels, and fills the decks with water; in passing to windward, they may be traced to a considerable distance.

These extraordinary phenomena have been before noticed, but, I believe, never accounted for; this short notice may, therefore, attract attention to the subject, and contribute to an elucidation.

REASONS FOR HAULING UP.—*By Lawrence Luff.*

NO. II.

CONSIDERING the advantages which resulted to me from his patronage, I cannot but regard my introduction to the vicar as the most fortunate event of my life. His services to me were of a parental character; and I owe to his admonitions and instructions the power of adapting myself to a mode of existence for the enjoyment of which I was at first incapable. Short as my residence had been in town, I had contracted habits of too luxurious a nature; a restless desire for diversified amusements, an impatience of solitude, and a propensity for games of chance, which bordered very closely upon gambling; add to these a desire of notoriety, and it will appear how wisely my wary kinsman Mr. Keen acted in trying to extricate me from such besetting sins. The man of an ardent mind is constantly exposed to danger while his energies are misdirected. To commence, it must be remembered that emulation is the principle on which his education is conducted; then, when he starts in life, the great object ever held in view is that of gaining distinction. This is the stimulus which actuates men in all departments of the public service. Well, what is an

officer to do with his ambition when it can no longer find vent in warfare? This was a question I ventured on submitting to the vicar.

Let him cherish it, was his reply, but let its object be praiseworthy. If he had a sword consecrated to the service of his country in time of war, so has he now faculties which may be turned to good account in time of peace. Let him employ all his energies so as to make himself a useful member of society, and, in doing so, he will become incalculably useful to himself, by cherishing noble aspirations and developing fine talents and good qualities. Nobody questions the paramount advantage of having instructors competent to conduct a pupil through a regular course of studies, while he is acquiring what may be called the mechanical part of education, but it is infinitely more important subsequently to give a useful bias to attainments, so that the intellectual faculties may be worthily employed. How much physical power, now suffered to repose in sloth, if called into action might be made to operate public good, or effect deeds of private beneficence; and how much the cause of science might be advanced, if mental faculties, now totally unexercised, or grossly misapplied, were turned to good account. How many "dim lights of life" now burn a length of years, useless, unseen, whose united rays might enable us to find our way along avenues to knowledge now unexplored, from the obscurity in which they lie concealed!

This speculation had never much engaged my attention before; but it appeared to me, when thus propounded by the vicar, a truth as obvious as a demonstration in mathematics. Many men have their lights so completely under a bushel, that they serve as beacons to no one; others have minds naturally so dark, on the other hand, that they can contribute nothing to enlighten their fellow-creatures, and live, as Ovid says, but "to consume the fruits of the earth." Officers have the credit of being for the most part very consequential fellows, and in fact they have much consequence, relatively considered, with those placed under their control, during the period of servitude; but when in peace they come on shore, they must abate something in their pretensions to superiority; because before they can be deemed persons of consequence, it must appear that they have superior claims to distinction from good qualities or useful talents. Renown they have obtained, the palm has been conceded to them, but let them bear their honours meekly, and recollect that other qualities than gallantry and enterprise are requisite to make them popular in times of peace.

I have recorded thus much of the first conversation which occurred between myself and the vicar. Upon this I ruminated not a little; reflecting that an officer, the chief part of whose life has been passed at sea, encounters very serious disadvantages when

he comes to live on shore. If remorse and penitence must be felt by a delinquent ere he can be reformed, so must an ignorantm an be intimately convinced of his deficiencies, ere he can resolve to set about acquiring knowledge. I was oppressed by a sense of my inferiority, compared not only with the intellectual pre-eminence of Dr. Villers, but that of his whole family.

The morning after my arrival I was delighted by the vicar's kind unbending manner. As we were walking by the river, I stood delighted at the tact with which a pleasure-boat was worked. Well, sir, he said, like the coachman who delights in the smack of the whip, you seem to enjoy the way in which that smack is put in stays, and so do I; this may surprise you, but, though a minister of peace, I like a man of war: first, from the vast importance of a naval force to England; then, in the abstract, I admire a ship from the transcendent excellence of the machinery, in all respects so perfectly adapted for its purposes. A three-decked vessel is, indeed, a very first-rate thing; an object of surprising grandeur. Then, navigation too, what a magnificent science! of what importance to the welfare of the human race; adding to the chain of social intercourse, link after link, until it is extended round the habitable globe. I was astonished at the vicar's geographical knowledge, ancient and modern, with which he discovered so minute an acquaintance that I should almost have thought his studies had been directed solely to that subject. But this was not, by any means, the case; his acquaintance with places was only a subordinate department of historical researches; for, as pilots when navigating, and generals campaigning, consult their charts and plans, so he had maps and globes ever at hand when occupied by studying an author.

Certainly it was far beyond the compass of my abilities to form an adequate estimate of the erudition and attainments of the vicar. I had never had access to the society of sages, and, although I had heard that men of real eminence were for the most part unassuming, and distinguished for manners bordering upon childlike simplicity, I would not have supposed that such a portly, grave, majestic-looking person would condescend to be so gentle, affable, and playful. I never did expect in real life to meet such pastors as Goldsmith portrayed in the "Deserted Village" and "Vicar of Wakefield," yet, in my host, I found a compound of these ideal personages, with a dash of "Uncle Toby," only that the doctor's penchant was for naval adventures more than military operations. He told me, when a boy, he had a great hankering for a sea-life; and that even after he had taken orders, with a certain prospect of church-preferment on shore, he was tempted to go afloat as chaplain in a line-of-battle-ship, commanded by a relative, only that his engagement as tutor to a nobleman could not be given up with prudence. I hinted at the sacrifice of comfort he must have made

to indulge his predilection, and all the privations he would have endured by exchanging the ease of "academic shades and classic bowers" for storms on the ocean. He replied, "such thoughts would not have damped my ardour, and had I been possessed of independence, I would have relinquished all the luxuries of shore for the surpassing pleasure of sailing round the globe; nay, were I now a bachelor, and such another navigating genius as Columbus should start up, I really think I could set off with him as volunteer to-morrow." "You seem surprised, sir," said the old gentleman, "to hear a shovel-pated fogram speak with such enthusiasm about maritime affairs; but I have ever had a most decided gusto for such matters, greedily listening to details of voyages and heroic actions; while, if I err not greatly, it would be difficult, even among regular-bred sailors, to find one who takes a deeper interest in the profession, or who more earnestly desires to facilitate the science of navigation and improve the art of ship-building. You will moreover, I apprehend, be astonished to learn that I have long contemplated schemes calculated to abridge the seaman's toil, lessen his dangers, and increase his comforts."

I acknowledged that I did not expect divines capable of condescending to such things; but, rather, that they would regard handling these Jack-Tar matters as a defilement equal to that of touching pitch. The vicar smiling said, "You are mistaken if you suppose us of the black cloth have not the friendliest feelings possible for the true blue; we know full well, and never shall forget, the debt of gratitude due by this country to the British sailor."

I must not omit adding, that in point of person, Dr. Villers was what is called imposing; he was tall, symmetrical, and large, with a countenance strongly resembling that of Dr. Blair, or such at least as the engraver has given him in the frontispiece to the delightful Lectures on Belles Lettres.

Compared to the heartless, dissipated set of people with whom I had associated in town, my intercourse with Dr. Villers and his family was indeed a luxury. Ah, would I could "claim kindred here, and have my claim allowed," I mentally exclaimed, and pass the remnant of my days in labouring to make myself a useful member of society! Where could I meet with more appliances and means for the attainment of knowledge, for the developement of intellectual power, or the cultivation of moral worth? Deprived in childhood of parental care, I had, as a young orphan, been made to feel how bitter is the bread of charity; but I will not repine, or yet indulge feelings of asperity for those who treated me so roughly; for I can now forgive their sending me adrift upon the ocean. I fell there into noble hands, and got, by their means, inducted to a noble profession, where I took part in the naval triumphs of my country, and shared a portion of its fame; I had many a resting

place for glorious recollections to repose upon, and could reflect with satisfaction on the past, while I solicitously meditated on the future.

A few days subsequent to my domestication at the vicarage, Ernest, the eldest son of Dr. Villers, came on a flying visit from the University. He was in all respects a man of most distinguished elegance; loaded with academic honours, he not the less possessed the manners and accomplishments of one gifted to shine in the most brilliant circles. In point of form he was a splendid man, utterly destitute of academic pedantry; witty as Caroline, without her sarcasm, and not so fearfully ironical as Mrs. Villers, he had the excellent good nature of his elder sister and the vicar, who were, as Peter the old footman told me, favoured by heaven with most blessed tempers. This servant, who had lived half a century in the family, was himself one of those placid, well-disposed persons, who seem to think the summum bonum consists in obliging others; like the vicar, he had a great taste for shipping affairs, as he quaintly called them, and had absolutely, when a boy, taken one trip to Riga in a merchant-man! Peter did me the favour to take me at once into his good graces, and subsequently rendered me innumerable services.

The regard which Ernest Villers felt for Mr. Keen, induced him to place me on the social footing of a friend; like the vicar and the rest of the family, he seemed resolved to make me the medium through which the obligations of hospitality, contracted with my kinsman, should be liquidated. Ernest spoke of him as a benefactor, lauded his cleverness, and declared he had derived more useful knowledge from intercourse with him than all the treatises on men and manners he had ever studied. In fact, I soon perceived that the Cantab had taken my old friend Adam as a model, he had much of his peculiar humour and colloquial talent, placed the most ordinary events in new and striking lights, and told a story with the same dramatic terseness.

It may easily be supposed how exhilarating was the company of such a sprightly man as Ernest at the vicarage; he had accumulated such a fund of bon mots, and told so many stories, apropos to every theme of conversation, that its spirit never was allowed to flag. He had so many anecdotes to tell of queer old college fellows, and some of his strange fellow-students, that it appeared as if they only studied how to make themselves ridiculous. Caroline urges him to keep a diary, out of which he may eventually compose a work, to be entitled "A Parcel of Fellows," which she declares, when seasoned by his wit and drollery, will make a book without a fellow. There is a constant interchange of badinage and repartee between this sprightly hoyden and her brother: as he is an A. B. she commonly accosts him as our musty fusty bachelor; but that bad name was never so badly misapplied before. Never

was Bachelor of Arts less frumpish, gauche, or slovenly; our Cantab is a lady's man, par excellence, and will not long, I'll venture to predict, retain a fellowship. He banters Caroline upon her Tom-boy qualities; tells her a "toga virilis" would become her wonderfully, and offers to get her matriculated at his college. She vows she never will relinquish her own dress, nor yet the address which shall enable her to lord it o'er the lords of the creation. Lord help the poor lord who gets you, my lady, retorted Ernest, for he feels convinced Lord Arthur, when his own master, will come back, three years hence, bearing in one hand "his half of silver sixpence broken—'twixt youths and maids a true-love token," and the other a gold ring

> "With which, when certain words are said,
> Two people can one flesh be made;
> Though it is two to one, the twain
> Will speedily *be two* again."

Ernest is very unfavourable to the match, and has seriously admonished his sister against the misery of being smuggled, as it were, into a proud family by an infatuated youth, who will ere long bitterly repent having elevated the woman of his choice just high enough to be looked down upon by all his haughty relatives.

MORGAN'S PADDLE-WHEELS.

To the Editor of the Nautical Magazine.

London, 23d August, 1836.

SIR,—I shall not trespass long on your attention or space, to refute the absurdities contained in the last effusion of Commander Morgan.

It is lamentable to see a person so very ill informed on steam affairs generally, giving his opinion on points with which he appears to be utterly unacquainted; boldly contradicting some portion of my remarks, and then asking your readers not to believe the rest. Such conduct, however creditable the *motive* may be, is calculated to injure the cause he espouses.

I scorn to trample on a fallen foe, and shall refrain from entering into new matter, contented with rebutting the often reiterated assertion of my inaccuracy, though in some measure to do this is a compliment; the only vulnerable point is to impeach its truth, the matter being decisive.

Nothing is more simple than to quote a portion of a sentence, and suppress the rest—nothing more convenient; and your readers will recollect I had cause to complain of this conduct respecting the Mill trials, (page 668, vol. 4.) This applies to my opponent's observations regarding the breakage of Morgan's wheel.

I stated in my first paper, that if one radius-rod gave way, the wheel was useless. This appeared to have been misunderstood; and in my second letter, the following sentence to that quoted, I said, "I did not infer it was useless for *ever*, but until it could be repaired," &c.; and I beg to draw your, and your readers' attention to what follows, containing a good answer to this last allegation.

It is, however, rather strange that the Commander first stated, that in five and a-half years' practice no case had been known of a wheel giving way or breaking. Now, the truth can be told—such did occur on board the Flamer, and *exactly* as I had described it, with the exception of running back 120 miles, a matter of no importance; although it should be recollected, the commander of the vessel was my authority. But the last six months has furnished ample proof of their inefficiency, from the many examples we have had of breakages and repairs; and it is my intention to form a list of such, which I doubt not will prove my first assertion, "that in a *pecuniary* point of view they are failures."

I was drawing a comparison between the two systems, the *new* and the *old*. In the latter, arms or floats have never become useless to my knowledge; but in the former, when necessary to remove them, it must be a work of time, and the power of the wheel would be reduced in consequence, if we merely take it simply as the number of the floats, ten to fourteen, as in the Pluto.

My authority for stating the cost of the Confiance's wheels, *when* completed and efficient, was the *affidavit* of Mr. Seaward, and brought forward before the Vice-Chancellor in the proceedings of July, 1835; and as all your readers may not have a report, I subjoin it, as it is short.

"Mr. Samuel Seaward saith, that after much trouble he has obtained the following correct account of money charged, and paid the plaintiffs by Government, *on account of the Confiance*:—

1831.	The cost of the wheels, shafts, &c. for a pair of engines	£1,884
1832.	Up to July, for Repairs	450
—	Up to October, for Duplicates	196
1834.	Up to May, for Repairs	105
—	Up to June, Repair and Removal of the Wheels .	1,256
		£3,891

This was not denied by any counter affidavit, and it matters not whether the above was paid for one or three pairs, all we want to know is, that it *was* paid, and for one vessel in the short space of three years and a half.

The contradiction with regard to the Soho is the most unworthy of all. I say again, it was the price which caused the Directors to feel they could not be justified in expending so much money on a

thing of such questionable efficiency. I aver it was not the *owners*, but one solitary individual in the direction, whose notions on the subject are well known not to be of the first order, and, bad as they were, generally borrowed. I had not intended to go so far, but the necessity is imposed; and, to shew that my statements, though anonymous, are not made on slight grounds, I proceed to observe, That having had an intimate friend a proprietor in that company, (now dissolved,) I have been favoured with a sight of the identical letter, making the offer of a pair of wheels, and signed W. Morgan. I give an extract. [We do not think it right to publish this extract from a private letter, although addressed to a company. It is sufficient to state that the extract here quoted offers to supply a pair of 60^{s} for £1100. Ed.] This I presume will not be disputed; but if so, I shall take means to put the matter beyond cavil. No berth-place would have been injured, and no alteration took place in 1835 in the *fore* cabins; (they now are as in 1823;) in fact, no impediment to their introduction in that way. My opponent seems very unfortunate in his postscripts, as I had occasion to observe at page 665, vol. 4; and again he has discovered a "mare's nest."

I did not accuse him of an attempt to mystify the subject of the register tonnage of Soho and Flamer; I exposed his gross ignorance. I say again, he ought to have known his Majesty's vessels are never officially registered, though it is very simple *to calculate their register tonnage*, (it being in fact merely the deduction of the length of engine-room from the keel for tonnage,) as the officers of customs do the merchant steamers; and when your readers, sir, recollect that my table was a *comparative* one, I conscienciously think my opponent and his injudicious friend are the only persons that did not know my meaning in inserting the register tonnage of Flamer, under its proper head at page 333, especially after the note of her engine-room being a trifle the longest. The whole of this has arisen from the statement made in page 478; and I apologize to you, sir, for connecting your name with that absurdity. The displacement of Flamer at 11 feet is 467 tons, not 635, as stated by my opponent; the former is taken from the drawing by which she was built; and he has to ascertain that his informant has made a mistake. I pledge my correctness on this point. The controversy on this subject is very absurd to all who know the two vessels, the superiority of the Flamer being so great in form.

As I do not take the actual speed of vessels to decide their merits, but go further into the matter, as before explained, it is not necessary to know what they had on board—the draft, and immersed section, and the class of vessel, only being required: but the Soho had, as stated, her *stores* on board, though not her cargo; she was also ready for sea, had it been required. I again positively assert,

that on their respective trials, the Soho had an excess of displace ment over Flamer of 174 tons, as before stated, (page 666, vol. 4,) and it matters not what that weight was composed of; whether provisions for three months, or for a voyage to Edinburgh only, or greater weight of hull and engines.

I have before exposed my opponent's ignorance on steam-engine matters, and, as he observes, am almost tempted to refrain; but as all your readers are not acquainted with the subject, in justice to myself I must proceed.

The comparative performance of the Pluto, new and old wheels, is disputed. Thus, to quote.

"I *know not* whether 'Hiram' has some mode peculiar to himself of arriving at these figures; they certainly will not bear the test *ordinarily employed.*" By whom? but the Commander, and his friend. Sir, I notice this parade, because I am anxious to set myself right with your readers.

I had considered it was known to most schoolboys in this age of improvement, that, although the resistance of fluids is as about the *squares* of velocities, the *power* required to drive a body through them is as the *cubes.* Thus, then,

$$\text{Old Wheels} \quad \frac{\text{Velo. } 10^3.05 \times 129 \text{ sect.}}{100 \text{ pow.} = 1290 \text{ perf.}}$$

$$\text{New Wheels} \quad \frac{\text{Velo. } 9^3.035 \times 166.66 \text{ sect.}}{100 \text{ pow.} = 1229.18 \text{ perf.}}$$

Shewing a considerable mistake against myself.

Again, I have before proved my opponent a very poor engineer. My honesty is questioned respecting the power exerted in the Pluto's experiments; my opponent makes it out that only 81·48 horses was exerted in the case of his brother's wheels.

If he will turn to page 666, he will find I stated the power was as the ACTUAL *mean pressure* on the piston, not the assumed. But, sir, he is not aware, that when a steam-engine is reduced in its speed by over-work, the pressure on the piston always increases, in consequence of the greater time the steam has to enter the cylinder, and to be condensed, whereby the vacuum is improved. His rule of "thumb" is not applicable; there certainly was a difference, but not half what he states. But I waive this; for Mr. Morgan states, and is backed by Sir P. Malcolm, that his wheels give a power of sixty to a fifty-horse engine, or 20 per cent.: this would make up the difference. And again Mr. Barlow proves their best effect at *deep immersions.*

I refer your readers to the evidence of Sir P. Malcolm on steam to India. See question 1810, and to 1847 is to the point.

The Pluto drew on the 6th of August, 1831, forward 6 ft. 2 in. aft 5 ft. 9 in.; *mean,* 5 ft. 11½ in. Her engines were then new. At the trial with Morgan's wheels, 1st May, 1835, they had had a

most expensive repair, and a new boiler, and were very efficient; this therefore is a great mistake of my opponent. At the first-named experiment, had it not been for a great upholder of Morgan's wheels, who in the plenitude of his wisdom put pieces on the outer edge of the common paddles, by which the inner edge was reduced to the velocity of the vessel, the difference in performance would have been greater.

With regard to the Columbia's speed, I have to observe, that a difference of opinion exists, as to whether it is seven and a half or eight and a half, although I am aware the official report states the latter; but my authority, though non-official, is as good—nay, I know not why infallibility should be attached to the former; they are made by men; and we too well know that holding a civil office under Government is not always conclusive proof of a man's capacity for fulfilling the duties of his situation. I will give my opponent this advantage, and call her velocity eight and a half, at which her performance is 1197 only.

When my opponent talks of examining an irregularly formed figure, as my diagram, *with a pair of compasses*, no two paddles being in the same position at the same time, I think your readers may have him left to themselves, indeed; but will he favour us with his discoveries? it is all I ask. Sir, that expression proves that he at least knows nothing of the action of these wheels; and I *defy* him or his friends to prove they are incorrect, i.e. either that of the Confiance, as in 1830, page 293, or of the Pluto, 1835, page 670. The former was sketched by me from the vessel, in Dec. 1830; and if that was not the *improved wheel*, perhaps he will tell us how *many she has had*. If the improved wheels were made from the same patterns as the Blazer's and Pluto's, they are miserably inefficient; the latter vessel *broke down* before she got to Plymouth, went to the Black Sea, came back, and was repaired at a great expense. The Blazer is laid up, to have her power increased; the wheels are removed, in what state I know not. The Confiance is also now undergoing a thorough repair at Woolwich. The Tartarus started in Sept. 1834; came home, and had a *new pair of wheels* in January, 1836! The Columbia started in May, 1833; is now at Woolwich, and must be entirely refitted. These and other instances I might quote, to shew they are *too light and weak*, and that some persons have been guilty of a shameful expenditure of the public money. It appears their durability is about three years, with one-third their original cost laid out in repairs, in eighteen months after their starting: few have equalled, none exceeded it. In Buchannan's, you may combine the most essential properties of the common wheel, namely, *great length of paddle-board*, (not depth,) and solidity, or non-liability to twist; and my opponent's observations here again expose his want of candour, by quoting the end of a sentence, and omitting the first portion.

I merely refer your readers to page 672, as an answer to this *personality* of his.

I know, sir, that this discussion has obtained notice in the right quarter, and is likely to be of some service; and I venture to predict, that in three years, Morgan's wheels, or any others of the same description, will be unknown in his Majesty's navy.

In conclusion, I beg to draw Lieut. Wall's attention to the fact, that Mr. Symington has abandoned his "swivelling" principle, and *fixed* the paddles to the arms, leaving a space for the water to pass in the middle. This is the case with the William Symington tug, and the Medway steamer, both fitted by him, I believe. I am not aware if the latter vessel is improved in speed by this arrangement, and see no reason why she should be.

I am, Sir, your obedient servant,

HIRAM.

[In the course of this controversy we have observed a strict neutrality, leaving our pages open to fair argument: being in the interest of neither party, and unknown to both, we were satisfied that such a course, by eliciting truth, must secure that great object, the *public good*. EDITOR.]

MOTHER CAREY'S CHICKENS.

To the Editor of the Nautical Magazine.

SIR.—At page 330 of your April number, an allusion is made to these extraordinary birds; and the writer says, that, although the fact has never been ascertained, they are supposed to frequent rocky and uninhabited isles, to lay their eggs and rear their young. I am happy in being able to bear testimony to the fact, that they do frequent such isles for the above purpose.

While employed on the coast of Newfoundland, in the year 1827, we had occasion to moor a small vessel I was in charge of, off Wadham Cove. The island which forms it, is very small and rocky, with here and there a little soil, on which there is generally nothing but a species of grass. But we found the place completely occupied by sea-fowl. Soon after sun-set, there appeared to come from out of the ground a great number of Mother Carey's chickens, and, supposing they had nests there, we immediately commenced a search for them. We were not long in discovering that these birds made holes in the ground to lay their eggs, in which the latter generally consisted of three or four. The mouth of the hole was invariably just large enough to admit one bird at a time, and the stench proceeding from it was very offensive. We were also much disturbed, I remember, by their continual noise at night. I regret that I can give you no further particulars, it being so long ago. A party went next day to collect eggs on the same island, and having filled their baskets they were sent to the vessel; it was agreed, if possible, to get some birds; so, armed with sticks, they sallied forth: the first birds seen was a flight of puffins, or sea-parrots. A loud shouting was set up by

the whole party, at the full stretch of their voices; the effect of which was, to stupify the poor birds: and we succeeded to our hearts' content; for, in fact, they were perfectly confounded, and allowed the party to approach them, and to fell them in all directions with their sticks. These were soon despatched, but not so the other birds. They were not quite so timid as their neighbours, and would not allow any one to approach them.

I am, Sir, &c.
J. WILLIAMS, Lieut., R.N.

WESTERN PACKET STATIONS.—PORTDYNLLAEN AND HOLYHEAD.

AMONG the numerous measures of the present age of railroads and steam-carriages, the project of establishing a packet station at Portdynllaen on the coast of Carnarvon, was brought forward during the last session of parliament. The subject is one of vast importance in many points of view, and not the least perhaps, when considered in a nautical light, as the proposed station will afford that refuge for shipping which is much to be desired in the extensive bay of Carnarvon, and which is not to be found at Holyhead. There are other advantages which it has over Holyhead, and which will, no doubt, develope themselves hereafter; but (as is always the case in questions where the interest of parties are concerned) much pains have been taken to conceal the truth, and misrepresent facts respecting it, as will appear by the following statements of Mr. W. Dawson, in the Dublin Evening Post of the 23d of February last. The statements appear to the uninformed, no doubt, to embody vast and important objections, which, perhaps, have already had their effect; but as the measure yet remains for the decision of government, it may not be amiss to place these statements singly in juxta-position with the facts of the case.

MR. WILLIAM DAWSON'S VERSION.	A BRITISH SEAMAN'S VERSION.
1. "A place of about half a dozen poor houses."	1. A place well adapted for a good-sized town, (with commodious quays, there being ample water close to the shore,) and having *capital roads* leading thereto from all parts of the country.
2. "It is about fifteen miles further from Dublin than Holyhead."	2. True, what then?
3. "It lies in Carnarvonshire, in a very exposed situation."	3. It lies in Carnarvon bay, but not exposed: Holyhead mountain bears N. by E. ½ E. from it, and it is, therefore, landlocked!

4. "Has no harbour, nor has it any fishing-boats, for the water is shallow a great way out."

4. It is itself a harbour, and a most excellent one. In its present condition, vessels drawing 20 feet water may be afloat all times of tide in safety!

5. "If it had a pier, it must be a very long one, to enable even boats to lie afloat at it."

5. Not so. ... has still the remains of a pier about six yards long, and from this even the water never entirely ebbs. In proof of this, there is a tide-gauge there, which indicates the rise and *fall* at *spring-tides*.

6. "There is much deep sand in the way of this pier, and the sand would accumulate about it, and fill it up, let it be ever so long."

6. There is no deep sand in the way of this pier; neither is it reasonable to suppose that any accumulation would take place: there is no backwater, to bring down and deposit alluvial matter; no heavy run of sea, to lift up sand; the tides have no strength to scour or disturb the bottom, the only strength of tide is through the sound. Mr. Dawson's assertion is therefore contrary to fact.

7. "It is a very exposed situation, being in the bay of Carnarvon."

7. Not so—being by nature *land-locked!* See reply to No. 3.

8. "The Holyhead packets never go within many miles of it."

8. Why should they, when it is out of their way? No more do the Lisbon ones!

9. "It lies about twenty-five miles south of Holyhead, and twenty of Carnarvon, and has the great Irish bar south side of Dublin bay, ten miles directly between Dublin and Portdynllaen! oh, oh, oh!"

9. Add to this piece of information, Mr. Dawson, that it has the great Newfoundland bank between it and St. John's! oh, oh, oh!

10. "It is a very dangerous place, by reason of the sand-banks, so that not even boats belong to it."

10. It is a very safe place, and has several vessels belonging to it; it has no sand-bank that would bring up a ship drawing three fathoms water; and as for boats, (as a proof of its safety,) their communication with the shore was never yet known to be cut off.

11. "It has no mountain, as Holyhead has, to direct the seaman to it."

11. If one harbour has a pre-eminent advantage over another, from being easily recognized from sea, it is Portdynllaen! Could not Mr. Dawson see the Rhin mountain, 1000 feet, Sarn Madryn, 1200 feet, and the

Rivel, 1200 feet above the sea, round Portdynllaen? It has no mountain, eh? But perhaps Mr. Dawson was never there to see these "no mountains."

12. "It is in every respect a very dangerous bad place even for a boat."

12. It is in every respect a very safe place even for boats and vessels of considerable burthen in its present natural state. It might be made a secure and commodious harbour of refuge.

13. "You could not get out of it, the wind blowing straight into it two-thirds of the year, westerly."

13. You can get out of it with the wind westerly; a vessel laying up N.N.W. lays three points at least to windward of Holyhead mountain, according to the bearing in reply No. 3, which Mr. Dawson (if he be seaman enough) may verify.

Mr. Dawson perhaps thought he had said enough of the harbour to say it down, and proceeds to attack the land-approaches to Portdynllaen with as little reason, if any opinion can be formed of the almost unintelligible and misprinted statements which follow in the "Evening Post." This, however, I shall leave to the engineers, and reserve some more facts for Mr. Dawson hereafter, on the advantages of Portdynllaen.

ANOTHER BRITISH SEAMAN.

WYRE HARBOUR.

London, October 20th, 1836.

To the Editor of the Nautical Magazine.

SIR,—Observing in the report of the select committee of the House of Commons (which I have lately read in your valuable pages) on the causes of the increased number of shipwrecks, under the head of "Harbours of Refuge," the recommendation of such a harbour between the Great and Little Ormes Head, it has struck me, as a nautical man of many years' experience, that a harbour, so situated, would be of but little use to ships bound to, or coming out of Liverpool, with strong westerly or south-westerly gales, at which periods such harbours are almost exclusively required. The situation of Ormes Head is too far to the eastward of Liverpool to enable a ship to reach it in heavy weather; for, having passed them, should she be prevented from want of water, night coming on, or other causes, from reaching the port; and the same with ships coming out, should a gale spring up from the S.W. (which is of frequent occurrence during the winter season, after ships have left the

docks at Liverpool and proceeded to sea,) it would be impossible for her to reach a weather harbour (such as the one proposed between the Great and Little Ormes Head would be) under such circumstances; and without a port to leeward she would be compelled to keep at sea; and should the wind fly to the N.W., which is of very frequent occurrence on the Lancashire coast, she would be exposed to the dangers of a lee shore.

The importance of calling your attention to this subject has been forced upon me from having lately inspected the harbour of Wyre, which lies 32 miles to the northward of Liverpool, and which evidently is much better suited for such a purpose, as its entrance is easy, (being only one mile from the Fairway Buoy to safe and secure anchorage,) its channel well buoyed, and having commodious space within, and capable of great improvements, which may be effected at a comparatively little expense. A natural breakwater being already formed a considerable height above low water, (which runs in a northerly direction west of the channel,) this would only require being raised 20 to 25 feet, to become a complete shelter from the sea running in with heavy gales from the N.W., while the S., S.W., and W. are altogether sheltered by the land running out in a westerly direction. Its situation and local advantages, likewise, would make it highly desirable for an asylum or refuge harbour.

I have not yet seen the evidence taken before the committee, but the above palpable objection to the Ormes Head being used as a harbour of refuge, has struck other nautical men as well as myself.—I have the honour, &c.

EDW. SMITH, Com. R.N.

[The arguments of Capt. Smith are, no doubt, well founded, and, considering this part of the coast of the Irish sea with a view to the formation of a harbour, the position of Hilbree Island, lately proposed by Mr. Laird, of Birkenhead, seems to offer far greater advantages than that of Ormes Head, and which will be immediately seen on referring to his prospectus. We hope to see this important undertaking adopted as it should be.—ED. N.M.]

MOUNT'S BAY BREAKWATER.

OF all the various projects to which the capital, ingenuity, and enterprise of the British public have of late been devoted, the proposed line of Breakwater in Mount's Bay, Cornwall, unquestionably offers the highest claim to the attention and support of this exclusively maritime state.

In every point of view, we consider this spirited project as strictly national, though, at the same time, it holds out advantages

to other nations, as well as our own, by affording that shelter to ships, the want of which has ever been so severely felt.

To every one acquainted with the stupendous and terrific seas that beset the promontory of the Land's End, and the lamentable loss of life and property that are annually sacrificed off its dangerous coast, and of which, unhappily, we have had some very recent instances, the announcement of a contemplated breakwater of a mile in length, from the point of Penlea within Mount's Bay, cannot fail to enlist every generous feeling in favour of its speedy completion.

By nautical men, the proposed protection from the violence of the south and south-west winds, so prevalent in our island, will not be unduly considered, especially as the intended accommodation will be sufficient to harbour nearly twenty sail of the line, besides a large number of merchant vessels.

After the expense incurred by the construction of Plymouth breakwater, it might be supposed that considerable hesitation would be felt in embarking in similar projects; but we learn from the survey that has been recently made on the spot by skilful engineers, deputed by government, that the natural localities of Mount's Bay, in addition to the abundance of material at land for the erection of a breakwater, will ensure the accomplishment of this great object, at an outlay comparatively trifling with its great value and utility.

From the most careful and minute investigation into every detail connected with the work, it has been computed that the amount of expenditure will not exceed, and may be much under £250,000.

It was the ruling principle in the minds of those distinguished naval patriots, Earl St. Vincent and Admiral Cornwallis, to awaken the public mind to the great good that would accrue to England from the construction of a harbour at her south-western extremity, capable of being entered and left with every wind, and giving protection under all circumstances to a considerable fleet.

Looking then to the geographical position of Great Britain, and the policy, not to say necessity, of providing the whole southern line of coast with the means of naval warfare, both offensive and defensive—looking also to the circumstance of Ireland being ever the point to which the eye of our enemy has been directed, and to the proximity of Mount's Bay to that country—we cannot but congratulate the nation on the prospect of those advantages which this structure must afford.

We are therefore satisfied that the projectors of this noble, humane, and national enterprise ought to receive that cordial support from a British public which they have a right to demand, and which we hope will not be withheld.

Naval Register.

The Royal Navy in Commission—October, 1836.

PORTSMOUTH—Admiral, Sir Philip-Charles-Henderson Durham, G.C.B.—*Flag-Ship*, Britannia, 120.

PLYMOUTH—Admiral, Right Hon. Lord Amelius Beauclerk, G.C.B., G.C.H.—*Flag-Ship*, Royal Adelaide, 104.

NORE—Vice-Admiral, Hon. C. E. Fleeming.—*Flag-Ship*, Howe, 120.

Astrea—Capt. J. Clavell, Falmouth.

Bellerophon, 80—Capt. S. Jackson, C.B., Plymouth, Oct. *Exp. Squadr.*

Britannia, 120—Capt. J. W. Dundas Portsmouth.

Conway, 28—Capt. C. R. Drinkwater, Portsmouth, fitting, said for East Indies.

Cracker, *Cutter*—1st Sept. sailed for Jersey.

Excellent—Capt. T. Hastings, Portsmouth, for practice of naval gunnery.

Harlequin, 16—Com. J. E. Erskine, Sheerness, fitting.

Howe, 120—Capt. A. Ellice, Sheerness.

Inconstant, 36—Capt. J. Hayes, 17th Oct. arr. at Plymouth. *Exp. Squadr.*

Pembroke, 74—Capt. Sir T. Fellowes, Oct. Plymouth. *Expr. Squadr.*

Pique, 36—Capt. Hon. N. J. Rous, Oct. Plymouth. *Expr. Squadr.*

Portsmouth, *Yacht* — Lieut. W. M'Ilwaine, Portsmouth.

Prince Regent, *Yacht* — Capt. G. Tobin, C.B., Deptford.

Rapid, 10—Lieut. Com. Hon. H. S. V. Kinnaird, Chatham, fitting.

Royal George, *Yacht*—Capt. Rt. Hon. Lord A. Fitz-Clarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht*—Capt. Sir Charles Bullen, Kt., K.C.H., Pembroke.

Royal Adelaide, 104—Captain J. Sykes, Plymouth.

Scylla, 18—Com. J. Robb, Plymth.

Seaflower, *Cutter*, 4—Lieutenant J. Roche, Portsmouth station.

Serpent, 16—Com. Hon. E. Howard, Chatham, fitting.

Speedy, *Cutter*—Lieut. J. Douglas, Sheerness station.

Vanguard, 80—Capt. Hon. D. P. Bouverie, Oct. at Plymouth *Exp. Squadron.*

Volcano, St. V. — Lieut. Com. W. Mc'Ilwaine, Woolwich.

William & Mary, *Yacht*—Capt. Sir S. Warren, Kt. K.C.H., Woolwich.

LISBON STATION.

Rear-Admiral, W. H. Gage.—*Flag-Ship*, Hastings, 74.

Cameleon, 10—Lieut. Com. J. Bradley, Tagus.

Castor, 36—Capt. Rt. Hon. Lord J. Hay, 17th July at Santander.

Cornwallis, 74—Capt. Sir Joshua Rowley, 7th Sept. in the Tagus.

Endymion, 50—Capt. Sir S. Roberts, Aug. at Corunna.

Hastings, 74—Capt. H. Schiffner, 18th August, at Lisbon.

Hercules, 74 — Capt. M. F. F. Berkely, 5th Oct. sailed for Lisbon.

Magicienne, 24—Capt. G. W. S. J. Mildmay, 19th Sept. at Cadiz.

Malabar, 74—Capt. Sir W. A. Montague, 8th Sept., Tagus.

Minden, 74—Capt. A. R. Sharpe, C.B. 15th Oct. sailed for north coast of Spain.

Pearl, 20 — Com. H. Nurse, 20th Sept. in the Tagus.

Phœnix, St. V.—Com. W. Henderson, north coast of Spain.

Ringdove, 16—Com. W. F. Lapidge, north coast of Spain.

Royalist, 10—Lieut. Com. C. A. Barlow, north coast of Spain.

Russell, 74—Capt. Sir W. H. Dillon, K.C.H., 15th Oct. sailed for Lisbon.

Saracen, 10—Lieut. T. P. Le Hardy, north coast of Spain.

Talavera, 74—Capt. T. B. Sullivan, 5th July arr. at Lisbon.

Tweed, 20—Com. T. Maitland, 10th Sept. at Passages.

Viper, 6—Lieut. Com. L. A. Robinson, 10th Sept. at Passages.

MEDITERRANEAN STATION.

Vice-Admiral, Sir Josias Rowley, Bart., G.C.B.—*Flag-Ship*, CALEDONIA, 120.

ASIA, 84—Capt. W. Fisher, 26th July sailed for Mediterranean; 23d Aug. at Malta.

BARHAM, 50—Capt. A. L. Corry, 5th June off the Dardanelles.

CALEDONIA, 120—Capt. G. B. Martin, C.B., at Malta.

CANOPUS, 84 — Capt. Hon. J. Percy, Malta.

CEYLON, 2—Malta.

CHILDERS, 16—Com. Hon. H. Keppel, 12th Aug. at Gibraltar.

CLIO, 16—Com. W. Richardson (*a*), 16th July at Gibraltar.

EDINBURGH, 74—Capt. J. R. Dacres, Malta.

FAVORITE, 18—Com. G. R. Mundy, 29th June at Tripoli.

JASEUR, 18—Com. J. Hackett, 30th Aug. at Gibraltar.

MEDEA, St. V. 6—Com. H. T. Austin, 31st Aug. Zante.

NAUTILUS, 10—Lieut. W. Crooke, 26th July left Plymouth; 23d Aug. at Malta.

ORESTES, 18—Capt. H. J. Codrington, Sept. at Gibraltar.

PORTLAND, 52—Capt. D. Price, Aug. at Salamis.

REVENGE, 78—Capt. W. Elliott, C.B., K.C.H., Malta.

RODNEY, 92 — Capt. H. Parker, 4th July at Barcelona.

SAPPHIRE, 28—Capt. R. F. Rowley, Sept. at Corfu.

THUNDERER, 84—Capt. W. F. Wise, C.B., Malta.

TRIBUNE, 24—Capt. J. Tomkinson, 2d June at Smyrna.

TYNE, 28—Capt. Viscount Ingestrie, 15th July at Barcelona.

VERNON, 50 — Capt. J. M'Kerlie, 2d June at Malta.

VOLAGE, 28 — Captain P. Richards, 4th May, Dardanelles.

CAPE AND AFRICAN STATION.

Rear-Admiral, P. Campbell, C.B.—*Flag-Ship*, THALIA, 46.

BRITOMART, 10—Lieut. W. H. Quin, 3d June at Ascension.

BONETTA, 10 — Lieut. Com. H. P. Deschamps, 31st July sailed for Cape.

BUZZARD, 10—Lieutenant Com. S. Mercer, June, Bight of Benin.

CHARYBDIS, 3 — August, Bight of Benin.

COLUMBINE, 18—Lieut. Com. T. Henderson, 29th June sailed for Africa.

CURLEW—Lieut. Com. E. Norcott, 25th May off Sierra Leone.

DOLPHIN, 10 — Lieut. J. L. Roberts, 16th Oct. sailed for Africa, from Plymouth.

FAIR ROSAMOND, *Schooner* — Lieut. Com. G. Rose, June in Bight of Benin.

FORESTER—Lieut. Com. G. G. Miall, 17th July at Sierra Leone.

LEVERET — Lieut. Com. C. Bosanquet, June, Mozambique.

LYNX, 10—Lieut. Com. H. V. Huntley, 12th Dec. left Ascension.

PANTALOON, 10—Lieut. Com. ...., 8th May left Portsmouth.

PELICAN — Commander B. Popham, 4th July arrived at Cape from Ascension.

PYLADES, 18—Com. W. L. Castle, 3d June arr. at Ascension from Cape.

ROLLA, 10—Lieut. Com. T. H. H. Glasse.

SCOUT, 18—Com. R. Craigie, spoken in 3½° S., 13½° W.

THALIA, 46—Captain R. Wauchope, 31st May left Ascension.

WATERWITCH—Lieutenant Com. J. Adams (*b*), July at Prince's Island.

EAST INDIA STATION.

Rear-Admiral, Hon. Sir T. B. Capel. *Flag-Ship*, WINCHESTER, 52.

ANDROMACHE, 28—Capt. H. D. Chads, April, on her way to Mauritius.

HYACINTH, 18—Com. F. P. Blackwood, April at Calcutta.

RALEIGH, 16—Lieut. Com. M. Quin, 4th May at Bombay.

RATTLESNAKE, 28—Capt. W. Hobson, 14th May at Mauritius, from Calcutta.

ROSE, 18—Com. W. Barrow, April at Malacca.

VICTOR, 18—Com. R. Crozier, April at Penang.

WINCHESTER, 52—Captain E. Sparshott, K.H., 25th May at Bombay.

WOLF, 18—Com. E. Stanley, April at Madras.

ZEBRA, 16 — Com. R. M'Crea, 5th April at Sydney.

NORTH AMERICAN AND WEST INDIAN STATION.

Vice-Admiral, Sir Peter Halkett, Knt., G.C.H. *Flag-Ship*, MELVILLE, 74.

ALBAN, St. V.—Lieut. Com. E. B. Tinling, 21st September sailed from Plymouth.

BELVIDERA, 42—Capt. C. B. Strong, 27th August sailed from Barbados.

CARRON, St. V.—Lt. Com. W. Dow, 6th Aug. at Jamaica.

CHAMPION, 18—Com. R. Fair, 15th Sept. at Halifax.

CRUIZER, 18—Com. W. A. Willis, Aug. at Port Royal.

DEE, St. V. 4—Com. W. Ramsay, 1st Aug. left Jamaica.

DROMEDARY—Bermuda.

FORTE, 44—Captain W. O. Pell, 18th Aug. at Port Royal.

GANNET, 18—Com. J. B. Maxwell, 3d Aug. at Barbados.

HARPY, 10—Lieut. Com. Hon. G.R.A. Clements, 4th August sailed from Jamaica.

MADAGASCAR, 46—Capt. Sir J. Peyton; sailed with Galatea to West Indies.

MAGNIFICENT, 4—Lieutenant Com. J. Paget, Port Royal.

MELVILLE, 74—Flag of Vice-Admiral Sir P. Halkett, G. C. H., Capt. P. Douglas, 15th Sept. at Halifax.

METEOR, St. V.—Lieut. Com. G. W. Smith, July at Jamaica.

NIMROD, 20 — Com. J. Fraser, 24th June left Port Royal for Carthagena.

PICKLE, 5—Lieut. Com. A. G. Bulman, August, Chagres.

PINCHER, 5—Lieut. Com. G. Byng, Nassau.

RACER, 16—Com. J. Hope, 4th Aug. at St. John's from Halifax.

RACEHORSE, 18 — Com. Sir J. E. Home, 5th May at Barbados.

RAINBOW, 28 — Captain T. Bennet, Halifax.

SKIPJACK, 5—Lieutenant Com. J. J. Robinson, 3d Aug. at Jamaica.

SNAKE — Com. R. L. Warren, 30th Sept. arr. at Spithead, defective. To pay off.

VESTAL, 26—Captain W. Jones, 15th July left Jamaica for Halifax.

WANDERER, 16—Com. T. Dilke.

WASP, 18—Com. J. S. Foreman, 23d June at Morant Bay, Jamaica.

SOUTH AMERICAN STATION.

Rear-Admiral Sir G. E. Hamond, K.C.B. *Flag-Ship*, DUBLIN, 50. 2d June.

ACTÆON, 28—Capt. Rt. Hon. Lord E. Russell, 31st May left M. Video for Valparaiso.

BASILISK—Lieut. Com. G. G M'Donald, coast of Peru.

BLONDE, 46—Captain T. Mason, C.B., 22d July at Valparaiso.

CLEOPATRA, 26—Capt. Hon. George Grey, Sept. Falkland Islands.

DUBLIN, 50 — Capt. C. Eden (act.) at Rio Janeiro.

FLY, 18—Com. R. Elliott, 18th Oct. sailed for South America.

HARRIER—Com. W. H. H. Carew, 24th Aug. at Rio.

HORNET, 6—Lieutenant Com. T. R. Coghlan, running between Monte Video and Rio Janeiro.

IMOGENE, 28—Capt. H. W. Bruce, 15th Aug. sailed for Rio. 27th Sept. Madeira.

NORTH STAR, 28—Capt. O. V. Harcourt, 12th Oct. arr. at Portsmouth.

ROVER, 16—Com. C. Eden, 22d July at Valparaiso.

SPARROWHAWK, 18—Com. C. Pearson, 15th April at Callao.

SPIDER, 6—Lieut. Com. J. O'Reilly, running between M. Video and Rio Janeiro.

TALBOT, 28—Captain F. W. Pennel Aug. at Callao.

TROOP SHIPS.

ATHOL, *Troop Ship*—Master Com. A. Harley, Sept. at Portsmouth.

BUFFALO—Capt. J. Hindmarsh, 4th Aug. sailed for Australia.

SURVEYING VESSELS AT HOME AND ABROAD.

ÆTNA, 6—Capt. A. T. E. Vidal, Aug. at the Canaries.

BEACON—Lieut. Com. T. Graves, 7th Sept. sailed for Mediterranean.

BEAGLE, 10—Capt. R. Fitz Roy, 5th Oct. arrived at Plymouth.

FAIRY, 10 — Com. W. Hewett, surveying the North Sea.

GULNARE, Hired Schooner — Capt. H. W. Bayfield, surveying the Gulf of St. Lawrence.

LARK—Lieut. Com. E. Barnett.

MAGPIE—Lieut. T. S. Brock, Archipelago, with Beacon.

MASTIFF, 6—Mr. G. Thomas, Orkney Islands.

RAVEN — Lieut. Com. G. Bedford, Africa, with Ætna.

SULPHUR — Lieut. Com. H. Kellett, July at Valparaiso.

OFFICERS EMPLOYED IN SURVEYING AT HOME.

Com. W. Mudge; Assistants, Lieuts. J. Harding, G. A. Frazer.—Coast of Ireland.

Com. E. Belcher—Coast of Lancashire.

Lieutenants, M. A. Slater; H. C. Otter. —East Coast of Scotland.

Lieutenants, W. L. Sheringham; A. Kortright.—Coast of Wales.

Lieutenant C. G. Robinson—Solway Frith.

Lieutenants, J. Wolfe; R. B. Beechey. —Lakes of Ireland.

PAID OFF.

COMUS, 18—22d Aug. Plymouth.
COVE—20th Sept. Hull.
RAPID, 10—Chatham.
JUPITER, 38—27th Sept. Portsmouth.
GRIFFON, 3—Aug. Chatham.

COMMISSIONED.

DOLPHIN, 10—Sheerness.
CONWAY, 28—Portsmouth.
HARLEQUIN, 16—Sheerness.
VOLCANO, St. V.—Woolwich.
RAPID, 10—Chatham.
SERPENT, 16—Chatham.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS: *Commanders*, R. Byron, N. Corry; *Master*, W. H. Eames.

APPOINTMENTS: BLONDE, 46: *Lieut.* A. Hamond; *Mate*, E. Barnard.—BEACON, Surv. Ves.: *Mid.* W. W. Walker.—CHAMPION, 18: *Lieut.* T. Stephens.—CHARYBDIS, 2: *Com.* H. B. Martin.—COAST GUARD: *Commanders*, J. B. M'Hardy, to I. Wight; E. J. Parry, to Deal.—CONWAY, 28: *Lieut.* J. V. Fletcher; *Mates*, J. B. Hoogstra, C. E. Hodgkinson, R. Barwell; *Mids.* C. R. Read, H. S. Harvey, J. E. Parish, H. F. Elliott, W. E. Turnour; *Assist. Surg.* J. Todd.—ECHO, St. V.—*Lieut. Com.* W. V. Read.—EXCELLENT, 50: *Mid.* G. B. Rutherford.—FLY, 18: *Lieut.* J. F. Laye; *Mid.* J. Thomas.—HARRIER, 18: *Mid.* W. Moubray.—HARLEQUIN, 16: *Lieut.* C. H. Beddoes; *Mid.* F. Sinclair.—HASTINGS, 74: *Lieut.* E. T. Harris.—HOWE, 120: *Lieut.* P. Campbell.—INCONSTANT, 36: *Mate*, W. Frad; *Mid.* F. W. Horton.—NIGHTINGALE, 6: *Assist. Surg.* J. Campbell.—ORDINARY: *Chatham, Purser*, R. Sholl; *Sheerness, Purser*, M. Marsden.—PANTALOON, 10: *Lieut.* H. Eyres.—PEMBROKE, 74: *Purser*, G. Hodgskins.—PIQUE, 36: *Lieut.* E. Ommaney.—PLUTO, St. V.: *Mate*, J. A. Riddell; *Mast. Assist.* .. Hawkins.—PORTLAND, 52: *Purser*, W. Burke.—ROYAL ADELAIDE, Yacht: *Assist. Surg.* J. Shaw.—RAPID, 10: *Mate*, G. Western; *Surg.* D. G. M'Cluer.—REVENGE, 78: *Lieut.* J. Cheere.—ROYAL GEORGE, Yacht: *Lieut.* H. Eyres.—RUSSELL, 74: *Lieut.* W. Beddeck.—SAN JOSEF, 110: *Lieuts.* R. Drake, C. Moss.—SAPPHIRE, 28: *Purser*, J. Pinhorn.—SERPENT, 16: *Com.* Hon. E. Howard; *Purser*, T. P. M'Namara.—SKIPJACK, 5: *Mate*, F. H. Harper.—SULPHUR, 8: *Lieut. Com.* (act.) H. Kellett; *Master*, R. Bucroft.—SPEEDY, Cutter: *Lieut.* J. Millett.—TRIBUNE, 24: *Purser*, J. T. Duffell.—VANGUARD, 80: *Lieut.* W. C. Noel.—VICTORY, 104: *Lieut.* G. Smith; *Master*, J. Henderson; *Chaplain*, Rev. H. Small.—WINCHESTER, *Lieuts.* J. W. Dunlop, R. W. Pelly.

SANDWICH HARBOUR.—The important measure of constructing a harbour at Sandwich; we are glad to perceive, has been revived under the auspicious patronage, not only of several persons of influence and consideration, but under peculiar local advantages, both of which we look on as rendering its construction as securely and permanently adopted. Every friend to this country cannot but rejoice at this measure. A meeting has lately been held, at which Captain Sir Thomas Troubridge presided, and at which, Admirals Sir George Cockburn, Sir Edward Owen, and several other eminent individuals, were present. In another number we shall go further into this important subject.

WALKER'S LEAD AND LOG.—Our readers will find with our present number an advertisement of these machines, which have been lately tried by Captain Hewett in H. M. S. Fairy, by order of the Lords Commissioners of the Admiralty. We understand that Captain Hewett considers them very perfect, and fully entitled to be taken into general use at sea, the former being calculated for deep as well as shoal water; and the latter particularly desirable, from its not only indicating the distance run, but the rate at which a vessel using it may at any time be sailing.

JERSEY OYSTER FISHERIES.

Our readers may probably have heard now and then of a vessel of war sailing from either Portsmouth or Plymouth, to protect the fisheries at Jersey; and we regret to say that not only is the presence of a man-of-war necessary during the fishing season, but that, from the designs of the French, and the artful representations of Prince Polignac to the British Government, the line of demarcation has been progressively altered, so as to deprive our fishermen of their original fishing grounds, and to drive them to deep water, by which, while their labour has been increased, their success has been proportionally reduced. The inevitable consequence of this has been an infringement of the line of demarcation on the part of our fishermen, who but ill comprehend why they may not fish where they have done so from their boyhood, and they become captured by the French cruizers, and taken to Gronville, where they are detained generally during the remainder of the season. But this is not all; such detention operates to the ruin of the persons detained, and the whole process keeps alive disputes and animosities between our fishermen generally, and those of the French, which have led to bloodshed, and which it requires the utmost care on the part of the cruisers of the two nations to prevent breaking out into open warfare.

The Jersey states have looked on at these proceedings with painful concern, and have endeavoured, by representations to their own government, and other measures, to avert them, without

success. At length things, as they generally do, have arrived at their worst; and it is stated that commissioners are appointed by the two governments to come if possible to some amicable and fair adjustment of the line of demarcation to be observed by the fishermen; the former conventions, since that of 1824, being merely *provisionary*. In our next we propose going more largely into this subject, the importance of which cannot be overrated by a maritime country like Great Britain; and we are glad to find that the interests of our fishermen are not likely to be lost sight of, or to suffer through the want of a knowledge of the subject on the part of the British Commissioner, as we understand Lieut. Spark, R. N., who has for many years commanded a man-of-war on that station, and is besides a native of Jersey, has been entrusted with the important task of meeting the French Commissioner, to determine the future limits of their ground. For our own part, we cannot see why the original line of demarcation was disturbed, unless it was as a commencement of the system, which was then adopted by the French to ruin our fishery, and to lead to those unhappy results which have followed.

Steam Navigation with the East Indies.

A prospectus has just appeared for establishing steam communication with British India, to be followed up by steam-vessels to other parts of the East, extending even to Australia. That distant portion of the world, by the proposed arrangement, will be reached at the outset in the short period of 73 days; and when experience is obtained, this time will in all probability be reduced one-third; shortening the distance, by the route in question, from England to Australia to 40 days steaming, at 10 miles an hour. If two days be allowed for stoppages at stations, not averaging more than 1,000 miles apart throughout the line, the whole time for passing between the extreme points would only be 60 days; but a relay of vessels will follow, if the undertaking be matured, in which case 24 hours would be ample time at the depôts, and a communication may be expected to be established, and kept up throughout the year, between England and Australia in 50 days.

The prospectus shews that Bombay will be reached in 48 days, Madras in 55, Calcutta in 59, Penang in 57, Sincapore in 60, Batavia in 62, Canton in 68, and Mauritius in 54 days.

It has been stated, that 50 days will be the probable time for communicating with Australia, instead of 73, as above. It is well to begin on the safe side; but this table of distances may be reduced a third throughout; so that Bombay might be reached in 32 days from England, Calcutta in 40, and so on. This is a project which every well-wisher to England and her commerce will be desirous to promote. It appears to promise complete

success. For the sums required from government and the East India Company, to enable the parties immediately to proceed, more than adequate services are promised. The mercantile interests of Great Britain furnish the capital, and the Company look to the extension of commerce as a legitimate, and no doubt certain, remuneration. Thus individual advantage will be obtained. The national revenue will be increased; internal sources of prosperity, such as manufactories, will be benefited; and intercourse and industry will be carried to distant regions, some of which are scarcely known by name to Christian Europe. It is a matter of congratulation that England will lead in thus concentrating, as it were, such a mass of the human family, and of bringing numerous savage tribes of Asia and Africa to a knowledge of the advantage to be derived from science and civilization.

The pretext for hitherto withholding this measure, so loudly called for by all India, and sought for by the mercantile interests of Great Britain, and recommended by a committee of the house of commons, has been the plea of expense that would be incurred by the East India Company in carrying out the measure. This sole objection to the arrangement is now unequivocally met by a proposal from the parties in London to open the communication monthly. They ask from the India House only £25,000 a year, for the conveyance of their despatches and letters to and from all India, and thus relieve the India Company of the necessity of expending £100,000 a year, which is the least sum a communication to Bombay alone has been estimated by the India House authorities. His majesty's government will be benefited in the same way, by being asked for a grant of £40,000 a year for the carriage of the Mediterranean mails and their despatches to and from India; whilst for the conveyance of the former alone they at present incur an expense of at least £60,000 annually, a duty which by the merchants of London is considered to be now very imperfectly performed.

EARTHQUAKE AT ANCHOR.—The following notes, made on board H.M.S. Volage, while at anchor in Callao Roads, during the severe earthquake which occurred in March, 1828, are of considerable interest. We understand, that part of the chain cable of the Volage which was exposed to its effects, from being then in use, is now in the possession of that learned gentleman, Mr. Faraday.

March 30, 1828. The morning clear, and a light breeze from the southward. At 7h. 28m. a black thin cloud passed over the ship, with very heavy distant thunder. At the same moment we felt the shock of a severe earthquake. I should think it continued seventy or eighty seconds. The ship trembled violently, and the only thing I can compare it to is, the ship being placed on trucks, and driven with rapidity over coarse paved ground. The ship was

moored with two chain-cables, and on sighting the anchors a few days after, we found 56 links of the best bower cable much injured; the iron had the appearance of being melted, and nearly one-sixth of the link was destroyed. This piece was 30 fathoms from the anchor, and 20 fathoms from the ship. The bottom was soft mud, in which the cable was buried. During the earthquake the water alongside was full of little bubbles; the breaking of them sounded like red-hot iron put into water. The city of Lima suffered considerably, and a number of lives were lost. This severe shock was felt for nearly one hundred miles north and south of Lima.

THE BRITISH ASSOCIATION.—*Extracts from the Reports.*

Phenomena of Waves.—The next point of discussion was on the application of our knowledge to the phenomena of waves, to the improvement of the navigation of shallow rivers and canals.

Mr. Russell regretted he had not had time to put his observations on this subject into writing. To gentlemen connected with railways he would say, that where canals did exist, there could be no man who did not wish that the traffic upon them should be conducted in the most favourable manner. The result of various experiments he had made confirmed the law of Sir Isaac Newton, that the resistance was in proportion to the square of the velocity. The difference of resistance between a horse drawing a vessel trotting and cantering was 108 to 136.

He had made a table which was the result of 2400 experiments. In going at a velocity of

4	miles an hour the resistance was .	33lbs.
6	. . . . .	91
7½	. . . . .	265
8½	. . . . .	215
9	. . . . .	235
11	. . . . .	246
12	. . . . .	353
13	. . . . .	444;

but at a velocity of 20 miles an hour, the vessel apparently skaited along the surface of the water, and the resistance was very trifling. They would observe, that at 8½ miles an hour the resistance was not so great as at 7 or 9. When a vessel was propelled at a certain velocity, and she stopped, it had the effect of giving an impetus to the water, and produced a wave varying in its form according to the mass of the water, and he had followed such a wave no less a distance than a mile and half: the velocity of the wave was uniform, and independent of the velocity of the vessel; for if a vessel was going 4 miles an hour, the wave would go at the rate of 8 miles; and he had seen a large wave overtake a small wave, and pass it: waves never exceed in height the depth

of the quiescent water. If the velocity of a vessel did not exceed 8 miles an hour, and it did not divide the water; but pushed it forward in the shape of a wave—but beyond that velocity the water was divided. It was possible to increase the velocity and get upon the wave, and then the resistance was nothing. Where a canal had a depth of

3 feet, there might be a velocity of . 6 miles an hour.
5 9
9 . . . . . 11;

so that the greater the depth of water, the greater velocity might be attained. The resistance was less above 6 miles an hour—but 4 and 6 miles an hour the velocity was unfavourable—beyond 11 miles an hour, you had high velocity, and comparatively little resistance. Where it was intended that the velocity should be great, he recommended rectangular canals. To make canals wide with sloping banks was an evil.

Professor Whewell considered these observations to be of the highest value and of the greatest importance. It must be recollected, that although the wave travelled, the current was not increased. He was very anxious to have the velocity of waves at sea discovered.

Professor Mosley considered this might be adopted by taking the velocity of a wave made by a steam-vessel.

Mr. Russell proposed that the wave should be measured in this way. Let two vessels go out, and one of them be anchored—have a line attached from one to the other when the vessels were each on the top of a wave, let the rope be drawn tight, and that would give the width of the wave—then when the vessels were both in the bottom, a sight taken from the mast would give the height of the wave, and by these means you might almost make a map of the bottom of the sea. The farther vessels went, the less would be the resistance, and the Atlantic might thus easily be traversed by steam vessels.

Mr. Herapath observed, that when he came into the room he thought from long experience he had known something, but he now discovered that he knew nothing, and must begin *de novo*

Mr. Russell states, that in the course of his experiments on this interesting subject, he finds many different classes of waves obeying different laws. He has observed, principally, 4 classes; 1st, the simple ripple, which is not propagated beyond the point of generation; 2nd, oscillatory waves, such as are produced by a stone dropped into water—these are propagated with a velocity dependent on the magnitude of the displaced fluid; 3rd, waves having a broken top, called surges; 4th, the single, solitary wave, which is propagated with a nearly uniform velocity. The two last classes are those which had been principally investigated by Mr. Russell; 1st, it was observed that when any addition is

made to a quiescent fluid, an elevation is propagated along its surface with a velocity equal to that which would be required by falling through half the depth of the fluid; 2d, that the height of such wave is to be added to the depth, in order that the law may express accurately the velocity; 3rd, that the length of the wave is closely connected with the depth of the fluid; 4th, that it varies with the height; 5th, that when the height of the wave is nearly equal to the depth of the quiescent fluid, the wave breaks; 6th, by a canal of variable depth the elevation of surges or waves is explained, and also the formation of a tide bore; 7th, the phenomena of waves observed in a canal which gradually diminishes in breadth, are analogous to the phenomenon of the extremely high tides observed in narrow rivers and chanels.

FIXED HARBOUR, LIGHT OF PORT-EN-BESSIN.

A small light on the right side of the entrance of the port, lit only from September to April during bad weather. Height above the level of the sea 33 feet, may be seen distant one league, situated in lat. 49° 20′ 45″ N. Lon. 0° 45′ 18″ W.

FIXED HARBOUR LIGHT OF GRANDCAMP.

A small light for the use of the fishermen of Grandcamp standing 875 yards west from the village church. Height above the level of the sea 26 feet, may be seen distant one league, situated in lat. 49° 23′ 20″ N. lon. 1° 2′ 18″ W.

CAPE FRIO LIGHT.

A statement from Lloyd's agent has appeared, informing us that the light on Cape Frio, (Brazil) is altered from the fixed to the revolving principle, and also that a new light has been established in the gulf of Finland on the north side, more of which we will say in our next.

ROYAL YACHT CLUB.—It is with great satisfaction that we can inform our readers from *authority*, that the Royal Yacht Squadron was never in a more flourishing state than at present, its funds having been more than doubled within the last two years, and the expenditure much reduced. Mr. Joseph White, (the builder of the Water Witch) is now building at East Cowes two schooner yachts of 120 tons each; one for Mr. Beaumont, and the other for Mr. Meiklam; likewise a cutter yacht for the noble commodore, Lord Yarborough, of 140 tons, and one of 60 tons for Lord Graves, and he is lengthening Sir Bellingham Graham's "Harriet" by the stern. Mr. Fleming intends lengthening his "Elizabeth," and rigging her into a schooner. Mr. Ackers has a schooner yacht, 175 tons, building at Southampton. Lord Belfast, the vice-commodore, and several other members likewise, intend to build. The Committee are about renewing the lease, which will expire next August, of the yacht

house at Cowes, and are now laying in a large stock of the choicest wines for the use of members. There are several candidates to be balloted for at the next general meeting, and we have every reason to believe there will be a great increase of members next year; it is not generally known that the yachts of this squadron have very extensive privileges, being admitted into all foreign ports free of tonnage dues, and treated in every respect as men-of-war in most countries. All this is as it should be. There are few things we should regret more than the decline of this noble establishment at once the envy of other countries and the boast of maritime England.

Records of Wrecks.

"The spoils of the ocean, the playthings of the storm."

The past month has unhappily been too prolific in producing disasters among our mercantile shipping, and has added to the list of wrecks some of the most distressing that we have ever heard of. Dreadful as are these calamities in their most mitigated form, they have been latterly aggravated by circumstances of so distressing a nature, that it is impossible to read the particulars of them without shuddering at the unhappy fate of those who perished with the fragile barque. Our limits will not enable us to preserve that full record of them which we could desire, and we must content ourselves in glancing over them, and giving what particulars we can find room for. Among the foremost in point of fatal results stands the Barque Doncaster, lost off Cape L'Agulhas, in July last, on her way home with troops and other passengers from India, not one of whom or of her crew have survived to relate the melancholy fact; not a vestige, indeed, remains of the vessel, and her name has been discovered from a memorandum-book washed on shore. On our own coast, the wreck of the Clarendon will be long remembered as most awful. This ship was dashed to atoms in Cahle Bay, Isle Wight, and three persons only saved of eight and twenty, during the night of the 4th October, in a furious S.W. gale.

The James Laurie.—A log of mahogany, known to have been in the hold of this vessel, was found in the beginning of August on Andros; most of the things were found on the east side of Abaco, so that the melancholy catastrophe of her loss must have taken place a few miles east of the Hole-in-the wall; probably 36 hours after those on board had taken leave of their friends. At p. 447 we recorded the names of two families who perished with this wreck. The name of the chief justice Munning was there improperly spelt Manning.

THE HANNAH.—In our last we recorded the loss of this vessel from a Hull paper, and we have since learned from the Shipping Gazette that she had only 20 tons of ballast on board, her cargo filling every part of her, and that she even had *four heights* of deals stowed edgewise above each other as a deck-load, which made her so crank and unmanageable, that when other vessels were carrying topgallant sails, she was necessarily under close-reefed topsails. The Shipping Gazette takes the same view of these deck-loads as we do, and adds as follows: "In the loss of the *Hannah*, then, and the dreadful sufferings of her crew, we have another illustration of the fatal consequences resulting from the practice of carrying deck-loads, a thing against which we have always protested as the most fruitful cause of the loss of timber ships. So long as underwriters permit the practice, so long will it be followed." So says the Shipping Gazette; but there are a few more particulars concerning the loss of this vessel, which should be known. Mr. Henry Woodroffe, the secretary of a seaman's society at South Shields, states, that the carpenter of the *Hannah*, on being required to swear to the protest, said he would do nothing of the kind, as the ship was unseaworthy when she left London, owing to her having lain with all her load ten days aground, exposed to wind, sea, and tide, during her last voyage at Llanelly in Wales, and never having been examined since, but sent away to America, leaky as she was, and when there, although known to be a tender ship, only 20 tons of ballast were left on board, while the deck was rafted with deals, &c. above the rails. But the owner is one of the managers of a shipping club of South Shields, and all his former vessels (lost) have been *paid for considerably above their value*, out of the pockets of the public. A tolerable illustration of the effects of Marine Insurance, alluded to in clause No. 22 of the Report of the Shipwreck Committee, at p. 593.

CHARLES EATON.—This ship affords an instance of the difficulty of arriving at the actual number of wrecks which do take place. It appears by a document, sworn to by three of the crew, at Batavia, in December last, that she was wrecked on "Detached Reef" at the entrance of Torres' Strait, in 1834, being then on her way home from Sydney, and that five of the crew were saved of about thirty that were on board. The following are extracts from the document referred to:

"That the ship struck on the reef so violently that both the keel and rudder were suddenly knocked off and carried away, and the captain declared the vessel was totally lost, at the same time giving orders to get the boats ready and furnished with provisions, in order to endeavour to save the ship's company, and reach the island of Timor.

"On being asked whether they had not been able to save more of the unfortunate passengers and crew, they answered, that such

was quite impossible, as they could not pull up the boat against the stormy current, and no individual among the passengers or crew would venture amidst the heavy breakers to reach the boat by swimming; that they, in consequence, are unable to say what is become of the captain, passengers, and the rest of the crew; they can only affirm, that at the time Richard Quin and James Wright left the wreck, all the passengers were alive on the forecastle of the vessel, with the exception of one sailor, named James Price, who was drowned by the smallest of the two cutters swamping at the time she was lowered.

"On inquiry after the name and number of the passengers who were on board at the time the vessel was wrecked, they answered, Captain Doyley, of the Bengal artillery, his wife, named Charlotte Doyley, with their two sons, George and William, and a Bengalese woman servant, name unknown, and an English gentleman, named Armstrong, aged about 25. The ship's crew consisted of 26 persons:

"And the appearants further declared, that, not seeing any possibility of saving any more of the ship's company, and not perceiving a single person in the morning of the next day on the wreck, they concluded that these unhappy persons had been washed off the wreck by the increasing swell of the sea in the night, and all found watery graves; that they took to sea on Sunday morning, the 17th of August ensuing, without being provided with compasses, or any other nautical instrument. The whole of their provision consisted of about 30lbs. of hard bread, one ham, and a keg containing about four gallons of water, which had been put in the boat immediately before she was lowered.

"The first land they made was Timor Laut, where they fell into the hands of the natives. These, however, treated them well, and after being detained among them thirteen months; they obtained permission to return with a prow from Amboyna, and arrived there on the 7th of October, having promised to return with assistance of guns and ammunition to Timor Laut.

(More in our next.)

IMPORTANT TO SEAMEN.—A communication has been received at Lloyd's from their agent, the British Consul at Coquimbo, dated March 26, setting forth the danger vessels were exposed to, that ship copper ore on the coast of Chili, and giving, as a proof of this circumstance, a survey which had been held by his desire on the cargo of the Richard, bound for Swansea, which cargo consisted of this ore, wherein it is stated that the copper ore was in such an extreme state of heat, that when the thermometer was applied, the mercury rose immediately to 162 degrees of Fahrenheit. The persons who made the survey, however, attribute it to the damp and hurried manner of the shipment.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

Continued from page 604.]

	VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS
344	Adeline	Hazard	Sunderland		Robin Hd. b.	13 Oct.	
345	Allies		Drogheda	Quebec	At sea	26 Aug.	Abandoned
346	Ardent		St. Vincents		Anticosti		Sold as wreck.
347	Beu	Henderson		Rochester	Shipwreck S.	19 Sept.	Crew saved.
348	Charles Eaton	Moore	Sydney	England	Torres I.	15 Aug. 1834	24 drowned.
349	Clarendon	Walker	St. Kitt's	London	Chale Bay	11 Oct.	3 saved.
350	Diana		Dram	Yarmouth		11 Sept.	Crew saved.
351	Dorothy	Foster	Jamaica	London	Florida R.	7 Aug.	
352	D. Marlboro'				Torbay	11 Oct.	1 saved, 11 lost.
353	Friends	Mc.Intosh	Newcastle	Gibraltar	Brake Snd.	12 Sept.	Crew saved.
354	Hannah	Clough	Rimouski	Shields	At sea	4 July	4 lost.
355	Hibernia	Sharp	Sunderland	London	North Sea.	10 Sept.	Leak, Cr. saved
356	John & Cath.	Ord	Dantzic	Yarmouth	Hasbro' Snd.	14 Sept.	3 drowned.
357	John Guise	Mc.Tee	St. Petersb.	Chepstow	Pakfield Flts.	14 Sept.	Crew saved.
358	Mars		Dalhousie	Leith	Off Kinnairds	10 Sept.	Crew saved.
359	Mich. Wallace		Halifax	Sable Is	At sea	25 Aug.	By fire.
360	Neptune	Of Liverp.			Run foul of	Sept.	
361	Ranger		Waterford	Hull	Anticosti		Cond. as wreck
362	Resolute		Dublin	Burry	Burry R.	3 Oct.	
363	Rose in June		Brixham	Guernsey	Off Start	24 Sept.	Crew saved.
364	Stranraer		Quebec	Stranraer	St. Belle I.	9 July	
365	Sun	Of Sunderl.	Quebec	Gloucester	Sable I.	20 July	
366	Wheatsheaf	Quenell	Drove out	Sunderfort	Off Tenby	13 Oct.	Crew saved. ?
367	William & Ann	Of Cardig:	Limerick	London	Seaton	14 Oct.	1 drowned.

Births.

On Thursday, the 28th Aug., at London U. C., the lady of John Harris, esq. R. N., of a son.

On the 16th Sept., of a son, Mrs. Janet Taylor, of 103, Minories,' the celebrated Authoress of "Luni-Solar and Horary Tables," and of "Navigation Simplified," &c.

At Bath, on the 28th Sept., the lady of Captain Lysaght, R.N., of a son.

At Stone Pitts, on the 6th Oct., the lady of Capt. Robert Brigstocke, R. N. of a daughter.

On 16th Oct., the lady of Lieutenant Wells, R. N., Providence-place, Stoke, of a son.

Lately, at Home Park, Stoke, the lady of Captain Mc. Quhae, R. N., of a daughter.

At Bletchingley, Surrey, on the 26th Sept, the widow of Robert Allen, Esq., Surgeon R. N., of a son.

At Titchfield, on the 18th Sept., the lady of Commander Geo. Young, R. N. of a son.

Lately, at the Royal Hospital at Haslar, the lady of Lieut. Lee, R. N., of a daughter, still-born.

Marriages.

At Falmouth, on the 6th Oct., Lieut. Blount, R.N., Commander of H.M. St.V. Hermes, to Miss Clavell, daughter of Capt. Clavell, R. N., Superintendent of the Packet Establishment at that port.

At Paull, in the county of Cornwall, by the Rev. W. O. Gurney, Francis C. Burnell, Esq., of the Bengal Horse Artillery, to Emily, only daughter of the late Capt. Wm. Woolridge, R. N

At Llamvenog Church, Cardiganshire, on 22d Sept., Capt. Delme Seymour Davies, Scots Fusileer Guards, of Penylan, Caermarthenshire, to Mary Anne Elizabeth, daughter of the late Capt. Watkin Evans, R. N., and niece of Major Evans, of Highmead, Cardiganshire.

On the 10th Sept., at St. Botolph, Bishopsgate, by the Rev. Vicessimus Knox Child, M. A., Mr. Jas. Walton, of Bishopsgate-street, to Susan Frances Blyth, the younger daughter of the late Richard Dalton, Esq., R. N.

On Sept. 12, at Torr, Devon, Capt. J. O. Hayward, of Poole, to Elizabeth Mary, second daughter of John Abbott, Esq., of Abbey Cottage, near Tor.

On the 30th September, at Millbrook Church, by the Rev. D. Haynes, N. N. Jefferys, Esq., of Hill, near Southampton, to Catherine, eldest daughter of the late D. Haynes, esq., of Tillingbourne Lodge, Surrey, and widow of Captain G. M. Bligh, R. N.

On the 15th Sept., at Tormoham, Edward John White, Esq., R.N., second son of Thomas White, Esq., Capt. R.N. of Buckfast Abbey, to Caroline Georgiana Buttevant, only sister of Dr. Barry, of Torquay.

At East Stonehouse, by the Rev. H. Greaves, Lieut. Walsh, Royal Marines, to Emma Henrietta, only daughter of the late Lieut. Col. Henry Hooper.

At Bombay, on the 17th of May last, Capt. Wm. Morgan, to Harriet, eldes daughter of Lieut. Wm. B. Weekes, R. N., and niece of Thomas P. Weekes, Esq., Member of the Bombay Med. Board.

At Paris, Sir Cavendish Stewart Rumbold, bart., to Mary Harcourt de Flasario, eldest daughter of the late Rear-Admiral Manby.

On the 7th Oct., at Hampstead, Capt. Allen F. Gardiner, R. N., to Elizabeth Lydia, eldest daughter of the Rev. Edw. Mark, minister of Hampstead.

Deaths.

On the 9th October, Admiral the Rt. Hon. James Lord de Saumarez, G.C.B. at his lordship's seat at Saumarez in the Isle of Guernsey. Lord de Saumarez was in the 80th year of his life, having been born in the month of March, 1757. He was an intimate friend of the late gallant Lord Nelson, under whose command he won many of the glorious trophies which have signalized his fame.

On the 6th October, at Edge Grove, Aldenham, in the 83d year of his age, William Marsden, Esq., LLD., F.R.S., author of several well-known works, connected with the history and lan-languages of the East, and late Secretary of the Admiralty. Mr. Marsden, some time ago, exhibited a not very common instance of patriotism, in voluntarily resigning a pension of £1,500 a year, which had been bestowed on him as the reward of his public services.

On the 16th Sept., at Weston, Robert Lambert, Esq., aged 63, Vice-Admiral of the Blue.

Lately, at Kilkenny, Commander P. P. Bagwell, RN.: he will be remembered as the First Lieutenant of the Camelion, of 10 guns, for his gallantry in boarding an Algerine corvette a few days prior to the bombardment of that fortress.

Lately, at her house in Durnford-street, Stone-house, Miss Boger, eldest sister of Captain Edmund Boger, R.N.

On board H. M. steamer Comet, N. coast of Spain, Mr. W. C. Harris, second Master, son of Mr. Harris, R.N., Liverpool.

On the 23d Sept., Sarah, the wife of Capt. Lloyd, of Caermarthen, R. N., and daughter of the late Geo. Barton, Esq., of this town.

On the 30th Sept., at Mile End, Mr. Robert Cooper, Purser, R. N. (1773) aged 64.

On the 3d October, at Greenwich, Com. Wm. Hird, R. N. (1814.)

At Chudleigh, on the 10th October, Lieut. Robt. Thos. Reid, R. N., aged 35, (1829) lately arrived invalided from the Champion, in the West Indies.

In John-street, Morice-town, on Oct. 2, Mr. Stephen Burnett, aged 72 years, father of the late Lieut. John Burnett, R. N., deceased.

Lately, in Marlborough-street, Devonport, Mr. Charles Caseley, Boatswain, R. N., aged 53, having been a faithful servant to his king and country for a period of 36 years. He has left a widow and son to deplore the loss of an affectionate husband and father.

Lately, at his residence, Bridge Terrace, Topsham, in his 76th year, after a long and painful illness, Dr. David Wake Bell, surgeon R.N., and formerly a physician in his Majesty's quarantine department at Scilly.

Lately, at Exeter, of apoplexy, aged 59, Lieut. Richard Lavers, R. N. He served as midshipman on board the Minotaur at the battle of the Nile, and was a meritorious officer.

Lately, at Landport Terrace, Southsea, Elizabeth Grace, the only daughter of Edw. Rowe, Esq., Purser of H.M.S. Scout, at the interesting age of 18.

On the 1st of October, in Beaumont Square, London, aged 29 years, Mr. C. F. Baldock, son-in-law to John Fincham, Esq., Builder, of Sheerness Yard, sincerely lamented by a large circle of friends.

At Brockhurst, Oct. 1st, after a lingering illness, which she bore with truly Christian fortitude, Mary, the beloved wife of Lieut. Hopkins, R. N. Her loss will be long and deeply lamenied by all who knew her.

At Bletchingley, Surrey, on the 19th

October, deeply regretted by his family and friends, Robert Allan, Esq., Surgeon, R. N., in his 52d year.

At Totness, on the 4th Oct., Captain Charles Farwell, R.N., aged 48 years.

At Boulogne, Charlotte, second daughter of Capt. F. Wetherall.

At Kelson House, Ryde, on the 29th September, William, the infant son of Capt. Harrington, R. N.

On the 1st October, aged 53, Sarah, the beloved wife of John Hopper, purser, R.N., 17, St. Alban's Terrace.

Lately, Commander Currie, late of H.M.S. Vanguard.

On board the Camden Packet, on his passage to England, from the West Indies, Lieut. Beck, R.N.

At Cove of Cork, Lieutenant W. D. Masters, R. N. (1833) on the Coast Guard Service of that district.

On the 25th October, at Falmouth, Mr. Alfred Eugenio, Assistant Surgeon of H.M. brig Nightingale.

In March last, John Love, Surgeon R. N. He was washed overboard with the poop of the Hercules on her way home, off the Falkland Islands. He perished at sea, but his memory is cherished by those who knew his worth.

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

SEPTEMBER, 1836.

Month Day.	Week Day.	Barometer, In Inches and Decimals.		Fahrenheit's Thermometer, In the Shade.				Wind. Quarter.		Wind. Strength.		Weather.	
		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.
		in. dec.	in. dec.	°	°	°	°						
1	Th.	29·82	29·88	65	64	54	66	S.	S.W.	6	4	Bc.	Bc.
2	F.	29 75	29·71	58	56	52	60	S.W.	S.W.	4	4	B c p (2)	Bc.
3	S.	29·93	29·79	56	65	45	65	S.	S.	4	4	B c.	Bc.
4	Su.	29·35	29·40	59	64	54	66	S.	S.W.	4	5	Or (1)	Bcp (3
5	M.	29·55	29·61	55	60	52	61	S.W.	S.W.	5	5	Bcp.	Qbc.
6	Tu.	29·35	29·31	52	56	51	57	S.W.	W.	4	4	P (1) (2)	Ptl (3)
7	W.	29·63	29·74	58	61	51	62	N.W.	N.W.	3	3	Bcp 1)	Bcl.
8	Th.	29 76	29·74	57	63	50	64	W.	S.W.	2	2	Bcmr. (1	Bc.
9	F.	29·73	29·75	53	61	49	62	S.E.	W.	1	2	O.	Ogd 3)
10	S.	29·76	29·78	49	54	44	55	W.	W.	4	6	Or (1) (2	Bc.
11	Su.	29 97	29·89	47	51	37	53	N.W.	W.	3	6	Bc.	Op (3) (4
12	M.	29 97	30·01	52	54	48	55	N.	N.	5	6	Qog.	Q o r (3)
13	Tu.	30 04	30·08	54	57	45	58	N.	N.	6	5	Qbc.	Bcp. (3)
14	W.	30·10	30·10	54	57	49	58	N.E.	N.	4	4	O.	O.
15	Th.	30·14	30·12	52	62	45	61	N.E.	N.E.	3	2	Bc.	Bc.
16	F.	30·08	30·06	52	58	50	60	N.E.	N.E.	4	4	Od (2)	Or (3
17	S.	30·06	30·05	56	59	48	60	N.E.	N.E.	3	4	Bcv.	Bcp. (3)
18	Su.	29·99	29·99	56	56	49	57	N.E.	N.E.	3	4	Opd (2)	O.
19	M.	29·96	29·94	54	55	48	56	N.	N.	2	2	O.	Og.
20	Tu.	29·97	29·96	52	57	48	59	W.	S.W.	2	3	Op 2)	Bcp. (3
21	W.	30 13	30·19	46	48	41	50	W.	N.W.	3	3	Bcm.	Bcm.
22	Th.	30·27	30·24	47	53	40	54	W.	S.W.	4	4	O.	O r 4)
23	F.	29·97	29·91	56	60	51	61	S.W.	S.W.	6	6	Qod (1) (2)	Qod (3)
24	S.	30·14	30·14	57	63	54	65	W.	W.	3	4	Bc.	Bc.
25	Su.	30·15	30·17	57	65	53	65	W.	S.W	4	5	Bc.	Bc.
26	M.	30 14	30·04	59	68	56	70	S.W.	S.W.	2	2	O.	Bc.
27	Tu.	29·82	29·83	61	63	57	65	S.W.	S.W.	3	5	O.	Or 4)
28	W.	29·66	29·60	57	56	51	61	S.W.	S.W.	4	4	Bc.	Bcptl (3
29	Th.	29·26	29·31	55	60	51	61	N.	S W.	3	7	Or 1) (2)	Orql (3)
30	F.	29·41	29·45	51	53	45	54	S.W.	S.W.	5	5	Bcqp 2)	Bcqp (3)

AUGUST—Mean height of Barometer = 29·861 inches; Mean Temperature = 54·5 degrees; Depth of Rain fallen=2·96 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

LONDON: FISHER, SON, AND CO., PRINTERS, NEWGATE-STREET.

VIEW of the PROPOSED BREAKWATER in MOUNTS BAY.

ORIGINAL PAPERS.

DECEMBER, 1836.

ON THE APPLICATION OF GLASS, AS A SUBSTITUTE FOR METAL BALANCE SPRINGS IN CHRONOMETERS.

To the Editor of the Nautical Magazine.

SIR,—On several occasions we have occupied a space in your valuable journal with some account of experiments which we have made, with the view to introduce glass into the manufacture of chronometers, as a substitute for steel and brass in the balance and balance-springs of those machines. After a trial of more than three years, conducted at the Royal Observatory by the direction of the Lords Commissioners of the Admiralty, with two chronometers of this new construction, we have requested that they may be returned to us for further improvement. Thus the first public trial of the glass spring and its balance may be considered as closed; and, with your permission, we will here briefly advert to some of the progressive experiments with it, which have been detailed in former numbers of your work, beginning with a short statement of the first application of a balance-spring to a watch.

About the year 1660, Hooke first applied a spring to the balance of a watch, so that the vibrations were returned. It also admitted of the watch being regulated, and it remains *the same* at the present time in watches, as when he first applied it. Its form is that of a flat spiral, and made of steel. The effect of heat on this spring will be seen in one of the following tables, which for 68° of Fahrenheit, amounts to 385 seconds in 24 hours. To reduce this quantity, our present experiment with glass *is the first* that has been made.

While at the temperature of 68°, the error from a steel balance and spring is 385 seconds in 24 hours; that of glass is only 40 seconds. It is also clearly desirable to introduce a balance-spring the elasticity of which is not produced by any chemical or mechanical process, and which is free from magnetic influence, and capable of resisting the effects of corrosion. By its adoption, the principle of the chronometer is altogether changed; and it is remarkable, that while the improvements of the mechanism in a chronometer have been many and various, the present is the *only* attempt to reduce the errors of the balance-spring, or, in other words, to reconstruct the chronometrical part of the machine *de novo*, and however chimerical the introduction of glass appeared in the first instance, it will be seen that we have made considerable advancement in the three years' trial. In that period it has undergone the most severe test from the discharge of guns on board ship, it has also been continually going for upwards of three years without fracture, and, we may add, has been of great

service to Captain Hewett in his survey of the North Sea. This officer states, in a private letter accompanying his official report on it, "that the daily rates derived from the comparison with his standard chronometer, perhaps never were excelled in chronometrical journal."

The obstacle which seemed to present itself to the use of glass in the chronometer was its extreme fragility; this, however, proved to be no obstacle, and having prepared a glass balance spring, we took a previously adjusted chronometer, having a hardened and tempered balance spring of steel, and having regisered its arc of vibration, which was 180°, from the point of rest, we removed this spring, and applied one of glass. The vibrations were immediately increased to an arc of 200°, thus proving that glass had greater elastic force than steel, for the weight of the balance was not disturbed by the application of the glass spring, and the arc of vibration being increased and the same time preserved, its strength was necessarily equal to the original one.

Satisfied thus far with our efforts, we took it to Captain Beaufort, the hydrographer to the Admiralty, who promised us his assistance in obtaining their lordships' order for any trial to which we might wish the experiment to be subjected in our progress. Thus encouraged, the necessary adjustments for temperature, &c. were commenced.

Two important questions suggested themselves at this early stage of the experiment. The first was to ascertain how far a low temperature would affect the fragility of the glass spring; and the second was to prove by experiment whether it would withstand the shock arising from the discharge of cannon.

To determine the first question, we placed the chronometer in a temperature of 12° of Fahrenheit. In speaking of this low temperature, it may not be considered as digressing too much to explain the manner in which it was obtained; and we may be allowed this opportunity of describing our method of procuring a low temperature even during the summer months. The chronometer submitted to the process is placed in a metal vessel, having a piece of glass in the top, to allow a thermometer in it to be read, and the chronometer to be compared. This vessel, which we may call the internal one, is placed in an outer one similarly constructed with a glass top, but having a space completely parted off within it at the distance of an inch and a half from its outer sides. The distance thus left being occupied by common air, prevents the exterior atmosphere from readily acting on the ice which is to be contained within the partition. The inner vessel containing the chronometer is then placed in the centre of this outer vessel, and kept in its place by blocks of wood, and the space between it and the partition above-mentioned is filled with ice and salt mixed together. The whole is then placed in an outer wooden vessel, which is subsequently incased in flannels. By this arrange-

ment a low temperature may be preserved for many hours. The chronometer with the glass balance spring was placed in a vessel of this description, and the thermometer soon fell to 12° of Fahrenheit, at which it continued, with little variation, during the first twelve hours; at the end of twenty-four hours the thermometer was at 28°. The result of this experiment we considered satisfactory as to the power of the glass spring to resist the effect of a low temperature. To enable us to determine the second question, namely, the power of resisting the shock arising from the discharge of cannon, the lords commissioners of the Admiralty were pleased to order the experiment to be made on board H.M.S. Excellent at Portsmouth. The Rev. George Fisher superintended these experiments, and their results are shewn by the following.

TABLE I.

13 Sept. 1833.	Distance of Chronometer from a 24lb. gun, shotted.	Number of discharges.	Situation of Chronometer with respect to gun.	Effect produced on Chronometer.
Expt. 1	42 feet	3	Placed bare on the deck abreast of gun.	None
2	32 —	3	Do.	Do.
3	20 —		Do.	Do.
4	15 —		Do.	Do.
5	12 —		Do. on the carriage of the adjacent gun.	Do.
6	Broadside from the main-deck, guns shotted.		Do. on the lower deck, 9 feet below the midship main-deck gun.	Do.

Signed, GEORGE FISHER.

Having by these experiments established the conclusion, that the fragility of glass was no obstacle to its application to the purpose of forming the balance spring of a chronometer, our next step was to ascertain at what degree of tension a glass spring would break. We made a glass spring for this purpose, and applied it to the balance of a chronometer. It was wound up to 360°, detached from the escapement, and suddenly released, being shortened one coil at each trial. The following table will shew the result:—

TABLE II.

Degrees of Tension.	Number of turns in Spring.	Results.
360°	12	None
Do.	11	Do.
Do.	10	Do.
Do.	9	Do.
Do.	8	Do.
Do.	7	Broke

As chronometers vary in their arcs of vibration from 180° to 220°, and as the glass spring was wound up 360°, and did not break until it was shortened to seven coils, we may fairly conclude that it would have performed the usual arc of 180°, even at the seven coils, without fracture. It will be remembered, that the glass spring was applied to a previously adjusted chronometer in our few first experiments; and in adjusting it for variation of temperature, we found that we had to deal with a substance, with the nature of which we were altogether unacquainted; for on applying the glass balance spring, an excess of compensation was found, and, after repeated alterations to reduce this excess, we applied the least compensation that could be afforded us by the usual balance. This was done by placing the whole of the compensating weight at the end of the arm of the balance, instead of attaching it in the usual way to the moveable end of the arc of compensation, and, as the arm expands in a direct line from the centre of the balance, we supposed that our object would have been accomplished.

Having now only the compensation rim composed of the usual laminæ of brass and steel, and the weight being also placed at the extremity of the arm, where no curvature could be produced, to bring it nearer the centre, we found that the laminæ themselves, without any weight, produced an excess of compensation; we therefore determined on finding the amount of error in time arising from the spring when subjected to a variation in the thermometer from 32° to 100°. To arrive at this, we made a solid disk of glass, and, having removed the former balance, we applied the disk in its stead, and brought the chronometer under this arrangement to mean time at a temperature of 32°. Assuming that no error would arise from the glass balance by its diameter being increased by heat, the variation shewn when the thermometer was raised to 100° would be attributable to the glass spring only.

The temperature was raised to 100°, when, to our astonishment, the chronometer lost only the small quantity of forty seconds in twenty-four hours: the experiments were repeated, and the same results obtained.

It next became an object of much interest to find the amount of error of a steel balance spring under similar circumstances. With this view, we removed a compensation balance from a chronometer, and replaced it with a glass disk. Having brought it to mean time at 32°, we raised the temperature to 100°, and the rate shewn was losing 385 seconds in twenty-four hours. We then followed up these experiments by trying a gold balance spring; also one of palladium; and their several results are shewn in the following table: the number of vibrations were 18,000 when the chronometer shewed mean time.

Metals.	Thermometer.	Loss in twenty-four hours.	Length of Spring.
		m. s.	Inch
Gold	32 to 100	8 4	14 00
Steel	Do.	6 25	11 04
Palladium	Do.	2 31	11 34
Glass	Do.	0 40	15 00

This table shews that metal balance springs vary in their results, when under different degrees of heat, in the order in which they stand in a table of expansions; and with this conclusion we might have remained satisfied, had there not been such a wide difference between the results with the glass and the gold springs. This at once led us to consider that such a difference could not entirely arise from an increase of length in the springs caused by direct expansion, but principally from a loss of elasticity occasioned by change of temperature.

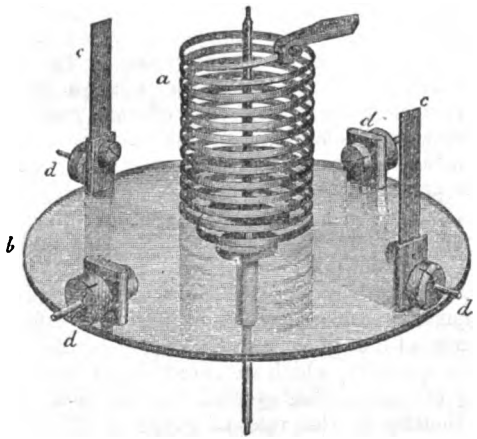
Our attention was next directed to separate these two causes of error, and if possible to account for the anomaly between the glass, steel, and gold balance springs. We may naturally conclude, if these alterations in the rates of the chronometers arose entirely from an increase on the length of the balance springs, due to the change of temperature, that by shortening the spring by the same quantity by which it had been augmented by the increase of temperature, a very near correction would have been effected, (making an allowance for a very small change in the inertia of the balance). This was by no means the case; the following experiment will shew that it arose principally from a variation in the elastic force of the springs.

We first measured the length of the steel spring, and, on referring to a table of expansions, we found that being 11.04 inch in length it would increase its length ·0065, in a temperature from 32° to 100°. This quantity being so small, we therefore preferred ·01 inch, being in excess of that given by the table. Having shortened the spring by this quantity, which we could determine by our gauge, and keeping the glass disk applied, we obtained the difference occasioned thereby in the rate of going at 32° and 100°, then reasoning from the table of expansion, that as the spring had lengthened ·0065 inches, it was fair to conclude that we had reversed the order of going, and that the chronometer would then go at the same rate when at 100° that it had gone before 32°. Instead of this, we had only advanced towards it by less than one fourth part of the quantity, shewing that the variation in the rate of going arose chiefly from a diminution of the elastic force of the spring, as seen in the following TABLE—

Thermom.	Rate per hour.	Remarks.	Experiment.
	s		
32°	+ 5 · 74	Length of steel spring, 11·04 in.	1
66	— 1 · 80	Do.	2
100	—10 · 30	Do.	3
100	— 7 · 0	Spring shortened, .01 in.	4

Having shortened the spring for the fourth experiment, by ·01 inch, if the difference of rate had depended on its length, it would have shewn the original rate of $+5^s \cdot 74$ at 100° ; instead of this, the rate was $-7^s \cdot 0$, differing only $3^s \cdot 3$ from the former at the same temperature. To the decrease in length of ·01 inch, therefore, is due the loss of $3^s \cdot 3$, while to the loss of elasticity is due the difference between $3^s \cdot 3$ and $16^s \cdot 04$, the whole difference of rate for 68°, i. e. $+5^s \cdot 74$, at 32° and $-10^s \cdot 30$ at 100°.

The fact having been proved, that glass does not lose its strength by heat in the same ratio as metals, and being now acquainted with the extent of its loss, which was 40^s for 68° of Fahr. we next had to construct a balance suitable to correct so small an error, and our previous experiments having pointed out to us that a metallic balance was unfit for such a purpose, we continued to employ the glass disk *b*, as shewn in the annexed diagram—



to which was attached the glass balance-spring *a*. To the disk we applied in an horizontal position, two laminæ composed of platina, *c*, *c*. These pieces were in length 0 ·5 in., breadth 0 ·052 in. thickness 0· 004 in. and weight 2 grains. The lightness and thinness of these pieces only allowed of one method of compensating for temperature, which was to cut off with a pair of scissors a small portion from the top, and to draw out the timing screws *d*, *d*, to bring the chronometer to mean time again, in consequence of

the balance having been lightened by cutting off a piece from the compensation laminæ.

The compensation being completed, we next proceeded to test the isochronism of the glass spring; in which respect it was proved to be as perfect as any metallic spring. The whole of the adjustments being now completed, we finally tried its rate under different degrees of heat, from 12° to 100° Fahr., and are of opinion, that there was less error shewn than generally attends metal springs, under corresponding circumstances. The chronometer with this glass spring and balance, was sent to the Royal Observatory, agreeably to the order obtained from the lords commissioners of the Admiralty, in October, 1833.

There have been two causes why the investigation has been delayed: first, until the last winter, the thermometer did not fall sufficiently low to enable us to draw a fair conclusion; secondly, there has been an acceleration, on a gaining rate, since it has been placed on trial; and this has been the sole obstacle to the complete success of this experiment. This acceleration must, therefore, be a subject of further research: that it arises from some latent cause, would appear from the circumstance, that the two chronometers, placed on trial by order of their lordships, as well as others which we have had in our possession for private experiment, have gained nearly in the same ratio. Of the two chronometers, tried by order of their lordships, No. 616 has been stationary at the Royal Observatory, and No. 790, on board H. M. S. Fairy, Capt. Hewett, employed surveying in the North sea. On the close of the season, this latter chronometer was returned to the Royal Observatory, until required; therefore, (with regard to this chronometer,) we have both a sea and land rate. The annexed tables shew the going of the two chronometers. From these tables it appears that the chronometers gained most at the earliest period of their trials, and our object is to watch the termination of their acceleration.

If we might venture to offer some practical remarks on the nature of balance springs which have been subjected to the effects of fire in their construction, to increase their elasticity, we would add, that all springs, which have been subjected to this process, have, for a certain length of time, a decided disposition to accelerate progressively; and it would therefore appear, that some particular change invariably goes on in the spring after the operation of exposure to the fire, the nature of which we are at present very imperfectly acquainted with; but, from the few experiments we have made, we are convinced that glass is in every respect capable of being introduced into the manufacture of chronometers.

We now subjoin the official copies of the rates of No. 616 and No. 790, at the Royal Observatory, and on board H.M.S. Fairy. On board the Fairy, the daily rate was derived from a comparison with the standard chronometer; the rate of which was determined by observation. When the letter *o* is annexed, it implies that the rate has been determined by observation, and the letter *c* rate by comparison.

1833.	October.		November.		December.		1834—Jan.		February.		March.		April.	
	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.
	s	°	s	°	s	°	s	°	s	°	s	°	s	°
1			−0·7	60	+1·4		+2·0		+1·8	46	+1·2	53	+1·1	59
2			0·5	56	1·4		3·1	48	2·7	47	1·7	53	2·6	56
3			0·4	54	1·9		2·5	49	2·7	48	1·7	54	2·6	55
4			0·4	53	2·2		2·0	51	2·5	49	0·9	53	2·3	53
5			0·3	49	1·9		2·4	49	3·1	50	1·9	55	2·4	53
6			0·3	54	1·7		2·4	50	2·9	50	1·0	54	2·6	54
7			0·3	51	2·0		2·5	50	3·3	47	2·4	56	2·5	57
8			0·0	50	1·8		2·2	48	1·0	44	2·7	54	2·8	57
9			+0·2	48	1·9		2·7	49	1·7	42	2·6	55	2·9	54
10			0·4	48	2·2		2·4	48	1·8	40	2·6	57	1·9	51
11			0·4	51	1·8		2·7	49	2·2	43	2·2	59	1·7	50
12	−0·8	60	1·3	51	1·6		2·5	50	2·4	45	2·3	55	2·6	49
13	0·8	59	0·4	50	1·3		2·4	50	2·2	45	1·5	55	1·4	51
14	0·9	59	0·9	46	1·7		2·6	51	2·8	45	1·9	52	1·5	51
15	0·3	58	0·8	46	2·4		2·0	50	2·8	46	1·9	53	2·4	55
16	0·1	56	0·4	45	2·3		2·6	52	2·4	46	2·0	53	2·2	56
17	0·3	53	1·2	50	2·1		2·3	52	2·3	48	2·0	54	3·5	57
18	0·3	54	1·3	52	1·9		2·4	51	2·1	48	2·4	51	3·1	58
19	0·0	55	1·3	52	2·7		1·9	50	2·2	49	1·5	50	3·5	61
20	0·2	52	1·0	52	2·2		1·9	47	1·6	49	2·1	49	3·4	65
21	0·2	57	1·2	52	1·7		2·4	49	2·2	51	1·5	47	3·5	61
22	0·2	61	1·3	54	2·0		2·2	42	1·2	50	1·6	49	3·2	59
23	0·5	62	1·4	52	2·0		2·5	53	0·8	49	1·8	50	2·7	59
24	0·3	60	1·2	49	2·2		1·9	56	0·9	51	1·8	52	2·4	57
25	+0·3	62	1·2	47	2·5		2·5	55	0·9	53	2·7	51	2·3	56
26	−0·3	64	1·2	46	2·0		2·4	53	0·9	52	1·5	48	3·2	57
27	0·8	62	1·1	48	1·7		2·4	52	1·3	52	1·9	51	3·5	59
28	0·8	62	1·3	47	2·5		2·3	53	1·8	54	2·1	51	3·6	61
29	0·8	64	1·7	44	2·4		2·0	49			1·6	51	3·9	61
30	0·7	64	2·0	48	2·9		0·1	43			1·8	51	3·4	61
31	0·8	61			3·2		1·5	46			1·9	52		
Mean Rate	−0·4		+0·6		+2·1		+2·2		+2·0		+1·9		+2·7	

1834.	May.		June.		July.		August.		September		October.		November.	
1	+2·9	60	+3·5	70	+3·9	69	+5·0	74	+6·3	67	+6·5	66	+8·3	58
2	3·4	60	3·5	73	3·1	68	5·3	77	6·1	66	6·9	66	+8·4	59
3	3·0	62	3·2	74	4·0	71	5·2	76	6·3	66	6·4	65	8·4	59
4	3·5	66	2·5	69	3·7	72	5·2	74	6·7	67	6·3	66	8·5	58
5	3·6	63	3·3	65	4·2	74	5·3	73	5·9	71	6·7	68	8·6	61
6	3·1	67	3·3	64	3·6	75	4·9	71	6·7	67	6·8	71	9·3	61
7	3·2	67	2·8	67	3·7	75	5·3	68	6·5	68	7·3	73	8·9	62
8	2·2	69	3·0	70	4·4	73	6·4	69	6·5	66	6·1	70	8·5	57
9	2·4	69	3·1	71	3·5	71	6·1	68	6·9	66	6·4	68	8·3	56
10	2·6	68	2·8	69	3·6	69	6·4	72	6·4	63	6·3	66	8·2	54
11	2·3	70	2·8	65	3·7	70	6·5	74	6·8	65	6·7	63	9·1	53
12	2·3	68	4·1	63	4·3	74	5·1	75	7·3	64	6·5	65	6·6	50
13	2·1	65	3·9	64	3·9	74	4·6	72	7·0	66	6·5	65	7·3	48
14	2·9	63	3·4	65	3·9	74	5·1	76	7·0	66	7·6	65	8·3	47
15	2·6	66	3·5	69	3·4	74	4·6	72	7·0	67	6·8	64	8·2	46
16	2·4	68	3·6	68	4·2	77	5·0	74	6·9	67	6·4	64	8·6	47
17	2·1	67	3·6	64	3·8	81	5·2	76	7·0	72	6·8	59	8·5	48
18	2·1	64	3·5	66	3·3	80	5·2	77	7·0	73	6·9	58	8·6	50
19	2·1	61	4·2	68	3·1	72	5·3	75	7·0	73	7·3	58	8·4	52
20	2·8	64	3·5	70	4·0	66	4·7	74	5·6	75	7·3	58	8·2	47
21	2·6	68	4·0	73	4·1	67	5·0	74	6·9	73	8·3	58	8·8	45
22	2·4	68	3·4	76	5·2	68	5·0	70	6·9	71	7·8	53	8·1	46
23	2·5	68	3·3	72	4·9	72	4·9	68	6·4	67	8·1	55	9·0	48
24	2·4	69	3·1	73	4·7	73	5·3	66	6·4	65	6·9	51	9·0	47
25	2·5	67	3·1	71	4·6	73	5·2	63	6·5	66	6·9	51	8·7	47
26	2·5	65	2·8	70	5·0	73	6·1	64	6·2	65	7·1	51	8·4	45
27	2·9	65	3·4	70	5·2	69	5·4	64	7·3	66	7·1	50	8·3	46
28	3·0	67	3·2	67	5·1	69	5·6	63	7·1	67	7·8	54	9·3	49
29	3·2	66	3·7	69	5·0	74	5·9	65	7·1	67	7·9	54	8·5	47
30	2·9	69	+3·6	69	5·3	75	6·3	67	+6·6	67	7·9	54	+8·9	48
31	+3·0	68			+4·7	75	+6·2	67			+7·9	54		
Mean Rate	+2·7		+3·6		+4·1		+5·1		+6·6		+7·0		+8·4	

1834.	December.		1835—Jan.		February.		March.		April.		May.		June.	
	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.
	s	°	s	°	s	°	s	°	s	°	s	°	s	°
1	+8·9	51	+10·4		+10·3		+ 9·3		+11·5	58	+10·5	53	+9·9	69
2	9·5	51	9·8		10·3		+ 8·9		12·1	62	10·4	55	9·7	62
3	9·6	49	9·1		10·6		+10·3	48	12·0	62	10·3	55	9·4	65
4	9·6	49	8·4		10·8		+10·3	45	11·2	60	9·9	55	9·5	67
5	9·2	50	8·3		9·4		9·0	45	10·9	56	9·9	58	9·2	64
6	9·4	51	6·2		10·0		9·7	48	10·9	56	9·7	57	9·7	68
7	9·4	52	6·3		9·6		9·7	48	11·0	59	10·8	59	10·4	72
8	9·3	53	6·5		9·8		9·9	49	11·1	62	10·3	59	10·5	76
9	8·7	49	7·6		9·9		9·9	49	11·1	62	10·8	64	9·2	79
10	8·7	50	10·6		10·0		10·3	45	11·0	62	10·3	62	9·1	80
11	8·8	46	7·7		10·8		10·5	49	10·1	59	10·2	62	9·8	78
12	8·2	42	letdown		9·2		10·6	50	10·0	58	11·0	63	7·8	72
13	3·2	46			9·6		11·3	50	9·8	59	10·1	63	7·9	78
14	7·7	46	7·7		9·6		10·3	51	10·8	60	10·7	60	8·0	74
15	7·6	47	11·1		10·4		10·8	49	9·9	60	10·1	59	8·1	77
16	7·0	46	9·4		10·5		10·8	49	9·2	54	10·0	61	8·0	77
17	8·8	47	9·4		10·5		10·6	49	9·1	48	10·7	64	8·1	77
18	7·6	48	8·1		8·9		10·3	50	8·3	49	10·6	66	8·0	74
19	9·0	44½	8·1		9·7		10·9	49	9·7	51	10·8	70	8·6	70
20	7·3	46	4·9		10·4		10·4	50	9·8	55	10·6	69	8·7	69
21	9·0	45	3·4		10·4		11·2	52	9·0	56	10·2	68	8·5	68
22	9·0	46	4·7		10·4		11·0	48	10·2	57	10·0	67	8·6	68
23	8·6	43	8·1		10·4		10·9	49	10·4	59	9·9	67	9·0	68
24	7·8	40	9·3		9·5		10·5	51	10·1	58	10·6	67	8·9	68
25	7·3	42	9·3		10·2		11·0	51	10·4	58	10·6	67	9·0	68
26	7·3	45	10·5		10·6		9·7	49	9·8	58	9·8	62	9·3	68
27	7·2	45	10·3		10·2		10·4	51	9·8	59	10·0	60	9·1	68
28	7·2	46	10·3		10·3		11·3	50	9·9	53	10·0	61	8·6	69
29	6·5	44	8·4		+9·3		10·9	48	9·7	54	10·4	62	8·6	68
30	9·2	45	10·2				11·0	50	9·3	53	10·0	60	+8·0	65
31	+10·8	50	+9·9				+11·3	42		53	+10·0	60		
Mean Rate	+8·4		+10·0		+10·4		+10·2		+10·2		+10·2		+8·2	

1835.	July.		August.		September.		October.		November.		December.		1836—Jan	
1	+10·3	70	+8·3	77	+10·7	70	+12·5	59	+13·2	52	+14·9	53	+12·6	35
2	10·4	73	8·9	76	10·3	72	12·8	58	13·3	50	13·9	52	8·4	30
3	8·1	73	9·0	74	10·5	74	10·5	56		47	13·7	50	9·4	32
4	9·8	71	9·5	74	10·9	73	11·5	55	13·4	45	14·1	50	9·5	40
5	9·2	69	9·9	75	10·7	72	11·5	56	12·5	43	13·1	47	14·6	46
6	9·1	70	9·9	74	10·9	71	12·3	58	12·0	43	13·7	45	14·6	46
7	9·6	78	10·0	73	11·0	72	12·1	57	13·1	42	13·8	43	14·1	43
8	9·6	67	9·9	71	11·1	70	12·3	58	13·3	45	13·0	42	13·1	41
9	10·1	66	9·7	76	11·2	65	11·9	56	13·5	45	13·1	42	12·7	38
10	10·1	67	9·8	76	10·4	64	12·3	54	13·1	40	10·9	38	11·8	35
11	9·6	68	9·5	78	9·3	60	11·3	50	12·0	39	10·9	35	11·9	35
12	9·9	68	9·6	77	12·6	60	11·3	48	11·5	41	10·7	32	12·6	36
13	9·9	67	8·6	76	10·7	61	11·5	54	12·3	41	10·5	37	12·4	37
14	9·3	68	9·2	74	10·9	62	11·7	57	12·7	41	10·6	37	12·8	41
15	9·4	70	9·5	72	11·2	65	12·5	57	13·7	42	11·7	38	13·4	46
16	9·5	71	9·8	73	11·2	62	12·1	57	13·7	45	12·1	39	14·3	42
17	9·4	73	9·8	74	10·3	63	11·2	55	13·1	49	12·2	39	12·2	39
18	9·1	75	9·9	76	11·3	63	11·6	54	13·9	49	12·0	40	12·2	37
19	9·6	74	9·9	76	10·8	65	11·7	52	14·1	50	14·0	41	12·2	43
20	9·6	77	9·6	77	11·2	65	12·5	48	13·9	50	11·3	35	12·2	39
21	9·1	78	9·7	78	11·3	65	11·5	49	14·4	51	11·4	33	11·9	39
22	9·9	77	10·0	78	11·2	65	12·4	48	14·4	52	10·5	33	11·5	43
23	8·0	77	10·8	71	12·3	65	12·1	53	14·4	52	8·5	30	14·5	50
24	8·6	77	10·8	70	+11·7	63	13·7	53	13·8	54	6·5	30	14·3	49
25	9·4	76	10·3	71			13·7	53	14·5	55	6·7	29	14·3	46
26	9·1	77	10·4	66			13·7	53	14·5	55	6·8	27½	15·0	44
27	9·2	77	10·3	65			13·1	50	14·9	55	7·4	31	13·1	45
28	8·7	77	11·4	68			12·1	48	14·6	55	7·4	35	12·7	47
29	8·6	77	11·5	69			13·1	50	13·4	54	13·5	39	14·4	44
30	8·0	78	10·7	72			13·1	47	+13·5	51	12·7	40	13·3	42
31	+8·2	78	+10·8	71			+13·1	50			+12·7	38	+12·7	43
Mean Rate	+11·6		+9·9		+10·9		+12·2		+11·6		+11·4		+9·0	

1836.	February.		March.		April.		May.		June.		July.		August.	
	Daily Rate	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.
	s		s		s		s		s		s		s	
1	+12·7	41	+11·2	44	+13·2	0	+13·5	0	+12·6	0	+11·6	74	+11·2	0
2	13·7	40	13·2	44	13·3	45	13·0		12·2	61	11·2	73	11·5	64
3	13·0	40	14·6	48	12·3		13·4		11·0	61	11·6	74	11·7	65
4	12·5	39	13·9	46	12·3	45	13·1		11·7	62	11·3	75	11·5	66
5	12·4	38	14·4	49	12·9	45	14·9		11·9	60	10·6	76	11·5	66
6	11·4	42	15·1		13·0	45	13·6		12·0	60	10·6	72	11·3	66
7	13·2	44	15·2	47	14·0	44	13·8		11·8	61	10·9	73	11·6	66
8	13·4	43	14·1	43	13·5	48	14·1		11·2	62	10·6	72	11·4	66
9	14·7	44	13·6	44	14·5	47	14·2		12·5	62	11·3	72	11·9	66
10	14·7	43	13·7	45	14·2		12·9		12·7	63	10·8	74	11·3	66
11	12·6	44	15·4		14·3	48	14·0		12·6	63	10·9	73	10·9	66
12	12·3	42	14·8	48	14·3	49	13·6		12·1	62	10·8	72	10·6	66
13	14·1	44	15·1		14·1	51	14·5		12·7	64	10·7	70	11·2	67
14	14·1	48	15·2	47	14·6	50	14·1		12·5	65	10·6	69	11·4	67
15	14·3	48	15·2	47	14·9		13·4		12·9	70	10·5	68	11·2	67
16	13·9	44	14·5		14·5	57	13·5		12·7	67	10·6	67	11·3	66
17	13·9	41	14·3	48	14·0		13·0		12·1	69	10·6	66	11·3	67
18	12·5	41	14·7	52	14·0	52	13·7		12·6	67	10·6	66	11·2	67
19	12·1	40	14·9	57	14·3	54	11·7		12·5	68	11·0	65	10·8	64
20	11·2	41	14·8		14·8	54	13·0		12·5	67	11·1	64	11·3	63
21	11·6	40	14·8	56	14·9	54	12·9		11·5	66	11·5	63	11·1	63
22	11·5	40	14·9	52	14·6	56	12·4		11·5	66	11·2	64	11·4	63
23	12·1	42	14·1	50	14·7	59	12·5		11·4	66	10·9	63	11·2	63
24	11·8	42	15·2	49	14·7	54	11·8		11·2	64	11·1	62	11·5	62
25	12·1	44	14·5	48	14·7		13·5		11·7	64	10·9	63	11·9	62
26	12·3	40	13·6	45	15·2		R N Asy	lum	11·8	65	11·4	64	11·7	63
27	12·4	39	13·7		14·0		10·8	58	12·1	66	11·4	65	12·0	63
28	11·3	39	13·8	45	13·5		10·9	58	12·3	70	11·7	62	11·9	63
29	+11·3	40	14·7	45	14·1		11·7	58	11·9	68	11·9	61	11·9	63
30			14·0	45	13·3		11·3	58	11·8	70	10·5	65	11·7	64
31			14·3	48			11·8	61			11·6	64	12·0	65
Mean Rate	+12·7		+14·3		+14·0		+13·0		+11·80		+11·60		+11·40	

NO. 616.

1836.	September.		October.	
	Daily Rate	Ther.	Daily Rate.	Ther.
	s		s	
1	+12·0	64	+12·8	55
2	12·1	64	12·8	54
3	11·8	64	11·3	53
4	11·7	63	11·6	53
5	11·9	62	11·6	53
6	11·8	61	12·2	55
7	11·5	62	12·9	56
8	11·3	61	13·0	55
9	11·2	59	14·2	55
10	10·9	58	14·0	55
11	11·2	58	13·3	56
12	11·4	58	13·9	56
13	11·7	58	13·9	57
14	12·2	58	13·9	57
15	11·7	58	13·6	57
16	11·7	58	14·1	57
17	12·0	57	13·3	57
18	12·2	57		
19	12·2	57		
20	12·0	57		
21	11·5	54		
22	12·2	55		
23	12·8	58		
24	12·8	60		
25	12·9	61		
26	12·4	62		
27	12·6	61		
28	13·0	60		
29	12·7	58		
30	12·5	55		
31				
Mean Rate	+11·90		+13·50	

NO. 790.

1834.	May.		June.		July.		August.	
1			c+0·68	62	c+2·23	67	c+2·75	71
2			0·68	62	2·23	68	2·75	71
3			1·18	62	2·23	67	2·75	70
4			1·18	64	2·23	64	3·25	71
5			1·18	64	2·23	67	3·25	73
6			1·68	63	o+2·36	69	3·25	72
7			1·68	61	c+2·19	70	3·25	71
8			1·68	63	2·19	68	2·75	72
9			1·68	64	2·19	69	o+3·13	72
10			1·68	64	2·19	68	c+2·76	72
11			1·68	64	2·19	68	3·26	72
12			o+1·73	65	2·19	68	3·26	71
13			c+1·33	66	2·19	71	3·26	72
14			1·33	66	2·19	68	3·26	71
15			1·33	66	2·19	67	3·26	70
16			1·33	65	2·19	65	3·76	70
17			1·33	66	2·69	69	3·76	70
18			o+2·09	68	2·69	71	3·76	70
19			c+1·67	66	2·69	70	3·76	70
20			2·17	65	2·69	68	4·26	71
21			1·67	66	o+2·83	69	4·26	72
22			2·17	69	c+2·65	71	4·26	71
23			2·17	68	2·25	70	3·76	69
24			2·17	66	2·75	71	4·26	67
25			2·17	65	2·75	70	o+4·74	68
26			2·17	66	2·75	71	c+4·28	65
27			2·17	65	2·75	72	4·28	65
28			2·17	64	2·75	72	4·28	65
29			2·17	64	2·75	69	4·78	66
30			o+2·17	63	2·75	71	4·78	67
31					2·75	72	4·78	67
Mean Rate	+1·08		+1·82		+2·50		+3·69	

The letter o denotes rate by observation at Harwich, c comparison with standard chronometer.

Taken on brd. H.M.S. Fairy, at Sheerness.

1834.	September.		October.		November.		December.		1835—Jan.		February.		March.	
	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.
	s	°	s	°	s	°	s	°	s	°	s	°	s	°
1	c+4·78	66	c+5·34	64	c+8·04	64	10·3	51	+10·2		+10·6		+10·9	
2	4·78	66	6·34	64	8·06	63	10·4	51	9·2		10·5		10·9	
3	4·78	66	6·34	65	8·04	64	10·2	49	9·1		9·6		10·6	48
4	5·38	66	6·34	65	8·04	64	10·0	49	9·5		10·3		10·4	45
5	5·28	68	6·34	64	8·04	64	10·0	50	9·5		10·8		10·8	45
6	o+5·76	68	6·34	64	8·04	63	10·0	51	8·8		10·7		11·0	48
7	c+5·33	67	6·34	65	8·04	66	10·3	52	8·9		10·4		10·9	48
8	5·33	66	6·34	66	8·04	65	10·3	53	9·1		10·5		10·8	49
9	5·83	65	6·84	66	7·54	61	9·7	49	9·4		10·6		10·8	49
10	5·83	65	6·34	66	8·04	62	9·4	50	10·1		10·2		12·4	45
11	5·83	65	6·84	64	7·54	59	9·9	46	10·7		10·0		11·2	49
12	o+5·83	66	6·84	66	8·04	59	8·8	42	10·8		10·2		11·3	50
13	5·72	63	6·84	63	8·04	55	9·9	46	10·2		10·6		11·1	50
14	+5·38	61	6·84	62	8·56	58	9·1	46	10·5		10·8		11·3	51
15	5·88	65	6·84	64	8·56	58	9·1	47	10·7		11·3		10·9	49
16	5·88	66	7·34	64	8·04	53	9·5	46	10·6		11·3		10·9	49
17	5·38	66	7·34	64	8·56	57	9·4	47	10·2		11·6		10·7	49
18	5·88	65	7·34	63	8·04	58	9·5	48	9·2		9·7		10·3	50
19	5·38	64	7·34	56	Retrnd	to	9·6	44½	9·2		10·2		11·2	49
20	5·88	64	o+8·23	55	Ryl.Ob	srv.	9·8	46	10·3		11·1		11·4	50
21	5·88	66	c+8·04	52	+8·2	45	9·8	45	9·1		11·3		10·6	52
22	5·88	66	8·04	56	8·1	46	9·9	46	9·2		10·8		10·3	48
23	5·8	67	8·04	56	9·0	48	10·2	43	9·0		10·8		10·9	49
24	5·88	66	8·56	55	9·1	47	9·9	40	9·6		10·3		10·6	51
25	o+6·64	66	8·56	51	8·8	47	9·3	42	9·8		10·5		10·8	51
26	c+6·34	62	9·04	57	9·2	45	10·4	45	9·9		10·6		10·6	49
27	6·34	63	8·56	54	9·6	46	10·7	45			10·5		10·7	51
28	6·34	64	8·56	56	10·1	49	9·5	46			11·0		11·2	50
29	5·84	64	8·56	57	9·8	47	9·5	44	9·5				Retrnd	on
30	6·34	62	8·56	50	10·2	48	10·5	45	9·5				brd. H	MS
31			8·56	62			10·1	50	10·3				Fairy, C	apt.
													Hewit.	
Mean Rate	+7·30		+7·07		+8·11		+9·83		+9·10		+10·60		+10·90	

1835.	April.		May.		June		July.		August.		September.		October.	
1			+11·04	61	+10·48	58	o+11·06	60	+11·24	66	c+11·57	64	o+12·59	60
2	On board		10·54	54	10·98	57	c+11·01	62	11·24	68	o+11·24	65	c+12·96	60
3	HM S		11·04	54	10·98	59	11·01	64	11·24	68	c+11·13	66	12·46	59
4	Fairy.		10·54	58	10·98	60	11·01	66	o+10·48	65	11·13	67	12·46	62
5			o+10·30	58	10·98	60	11·01	66	c+10·48	66	11·13	69	o+13·12	61
6	+9·85	55	c+10·48	58	o+10·35	61	10·57	67	10·48	68	11·13	69	c+12·94	60
7	c+9·69	59	10·48	61	c+10·73	61	10·51	66	10·48	69	10·63	68	12·41	62
8	10·19	60	10·48	64	10·23	65	10·51	64	10·98	67	10·63	67	12·44	62
9	9·69	63	10·48	65	10·23	64	10·51	66	10·48	67	11·13	66	12·44	63
10	9·69	63	10·48	65	10·23	68	11·01	66	10·48	66	11·63	69	12·44	63
11	9·69	57	10·48	64	10·23	71	10·51	65	10·48	65	11·13	66	12·94	59
12	9·69	54	10·98	62	9·73	72	11·01	64	10·98	67	11·63	63	13·44	52
13	9·69	53	10·48	62	10·23	68	11·51	65	10·48	70	11·63	61	13·41	51
14	9·69	54	10·98	65	9·73	65	11·51	64	9·98	71	12·10	62	12·94	58
15	10·19	55	10·98	64	10·23	63	11·51	65	o+11·24	65	o+12·44	62	12·94	53
16	o+10·49	57	10·48	63	10·23	65	11·51	66	c+10·57	66	c+11·96	63	12·41	64
17	c+10·04	56	10·98	62	10·23	66	11·51	67	11·07	68	12·96	62	12·44	62
18	10·04	57	10·98	60	10·23	66	11·01	67	11·07	69	11·96	61	12·94	61
19	10·54	58	10·98	59	10·23	65	o+11·15	68	11·07	67	11·96	63	12·44	61
20	10·04	60	10·98	58	10·23	62	c+11·46	68	11·57	70	11·96	63	12·94	56
21	10·54	62	10·98	59	10·23	61	11·46	69	11·07	71	12·46	63	12·94	52
22	10·54	61	10·98	62	10·73	61	10·94	68	11·07	72	12·96	63	13·94	51
23	10·54	62	11·48	63	10·73	63	11·46	67	11·07	71	11·96	65	13·44	55
24	10·54	62	10·98	64	10·23	63	11·46	67	11·07	70	12·96	64	13·44	53
25	10·54	63	10·98	63	10·73	61	10·94	68	11·07	69	12·46	64	14·44	54
26	10·54	62	10·98	59	10·23	59	o+10·90	69	11·57	68	12·46	62	13·94	59
27	10·54	60	10·98	62	10·73	57	10·74	69	11·07	68	12·46	61	12·94	60
28	10·04	60	10·98	64	10·73	56	10·73	70	11·57	68	12·46	60	13·94	60
29	10·54	60	10·98	62	10·73	58	11·24	70	11·07	67	12·96	57	13·94	57
30	10·54	61	10·98	61	10·73	59	10·74	69	11·57	69	13·46	58	13·94	58
31			10·98	56			10·74	69	11·07	66			13·44	
Mean Rate	+10·60		+10·80		+10·50		+11·20		+10·94		+11·20		+13·10	

1835.	November.		December.		1836—Jan.		February.		March.		April.	
	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.	Daily Rate.	Ther.
	s	o	s	o	s		s		s		s	
1					+13·1	35	+15·4	41	+15·5	44	+16·1	47
2					12·9	30	15·5	40	16·7	44	16·7	46
3					12·8	32	15·5	40	16·0	48	16·0	46
4			+14·6		12·8	40	14·9	39	16·4	46	16·2	46
5			14·4		14·7	46	14·8	38	16·0	49	16·4	47
6					15·4	46	14·5	42	16·7		16·4	47
7					15·0	43	15·5	44	16·7	47	16·0	48
8			13·9	42	14·7	41	15·6	43	15·8	43	16·3	49
9			13·6	42	14·6	38	15·1	44	16·1	44	16·2	49
10			13·6	38	14·3	35	15·9	43	16·1	45	15·7	50
11			13·6	35	14·4	35	16·0	44	16·5		16·1	51
12			12·7	32	14·5	35	14·2	42	16·6	48	16·2	52
13			13·8	37	14·4	37	14·9	44	16·7		16·0	52
14			13·8	37	14·7	41	15·4	48	16·8	47	15·9	53
15			13·4	38	15·4	46	14·4	48	16·5	47	15·3	52
16			13·5	39	15·1	42	14·8	44	16·3		15·4	53
17			13·5	39	14·5	39	15·8	41	*16·4	48	15·4	53
18			13·3	40	14·6	37	14·9	41	Rate at	52	15·7	53
									R.N. Asy	lum	Re-issued	to
19			14·5	41	15·7	43	14·6	40	15·8	53	H.M.S. I	airy
20			13·4	35	14·5	39	14·8	41	15·4	55		
21			13·5	33	14·3	39	15·0	40	15·4	54		
22			12·5	33	15·4	43	14·9	40	15·9	53	14·94	
23			13·1	30	15·6	50	15·2	42	15·9	51	14·90	
24			12·2	30	15·6	49	15·9	42	15·7	51	14·40	
25			12·3	29	15·5	46	16·0	44	16·2	49	15·40	
26			12·4	27½	15·0	44	15·3	40	16·1	48	14·90	
27			12·5	31	15·4	45	16·6	39	16·5	48	14·40	
28			12·5	35	14·6	47	15·0	39	16·5	48	14·90	
29			14·2	39	15·6	44	15·1	40	16·2	48	14·90	
30			14·1	40	15·0	42			16·2	49	14·90	
31			14·6	38	15·4	43			16·0	47		
Mean Rate			+13·40		+14·70		+15·4		+15·99		+15·80	

Nov. 1st returned to Royal Observatory. During this month kept going, but no rate registered.

1836.	May.		June.		July.		August.		September.		[October.	
1	+14·90		+15·65	59	+14·20	66	+15·40	69	+15·42	68	+16·56	61
2	15·00		15·16	61	14·20	66	o 15·13	63	15·02	68	16·56	60
3	15·40		15·16	62	14·20	68	c 15·34	68	15·02	65	16·56	60
4	15·40		15·16	63	13·70	67	14·84	69	15·42	67	16·56	60
5	15·40		14·66	63	14·20	68	14·34	67	15·42	68	16·56	59
6	15·40		14·66	67	14·20	67	14·34	68	15·42	66	16·06	62
7	15·40		14·66	66	14·20	68	14·84	66	15·42	63	16·56	67
8	14·90		15·16	65	14·20	67	14·84	67	15·02	64	16·56	67
9	15·40		15·16	63	13·70	67	14·84	66	16·42	63	16·56	65
10	15·40		14·66	67	13·70	68	15·34	67	16·42	62	16·06	65
11	14·90	60	15·16	64	o 14·72	70	15·34	66	15·02	59	16·76	64
12	14·90	64	14·60	63	c 14·12	72	15·84	66	16·42	59	16·56	63
13	14·90	64	15·16	65	14·12	72	15·34	67	16·42	58	16·06	66
14	14·40	63	14·66	64	14·62	69	15·34	67	16·42	56	16·06	67
15	14·90	62	14·66	69	14·62	67	15·34	67	o 16·94	61	16·06	65
16	14·90	65	14·66	69	15·12	66	15·34	68	c 16·06	64		
17	14·50	64	o 14·50	68	14·62	64	15·34	68	16·06	64		
18	14·90	65	c 14·50	67	15·12	64	14·84	67	16·06	63		
19	14·50	65	14·50	67	15·12	63	15·34	65	16·56	63		
20	14·90	64	14·50	67	15·12	62	14·84	64	16·06	65		
21	14·40	63	14·50	66	o 15·11	60	o 15·76	63	16·06	60		
22	14·90	63	14·50	64	c 15·40	61	c 15·42	64	16·06	61		
23	14·90	63	14·50	65	15·40	63	15·42	63	16·56	62		
24	14·40	63	14·50	64	15·40	64	15·42	64	16·56	66		
25	14·90	61	o 14·10	64	15·40	65	15·42	67	16·56	67		
26	15·40	58	c 14·20	64	15·90	65	16·42	67	16·06	67		
27	14·90	57	14·20	67	15·40	64	15·42	68	16·56	66		
28	14·90	58	14·20	67	14·90	67	15·42	68	16·06	64		
29	14·90	57	14·20	66	14·90	67	15·42	65	16·06	67		
30	o 14·38	58	13·70	65	14·40	70	15·42	66	16·06	68		
31	c 15·16			66	14·90	68	15·42	68				
Mean Rate	+15·00		+14·65		+14·68		+15·24		+16·14		+16·40	

* Issued, by order of the Lords Commissioners of the Admiralty, to Rev. Geo. Fisher, R.N. Asylum.

In conclusion, we may remark, that with regard to these experiments they were undertaken with the view of improving the chronometer, and we might add, that few investigations in science have exacted an eqnal sacrifice of time and personal attention; with this machine much, however, is yet to be done in the way of improvement, for hitherto we have advanced but a few steps towards what we hope may ultimately prove successful.

An error, arising from an excess of compensation is evident in the chronometer, number 616; and further, if a sudden change in the thermometer takes place, particularly in the colder months, it will be seen that a sudden change of rate is also shewn. It may be accounted for, by the compensation pieces being very thin, which being composed of metals, always good conductors of heat, and the glass spring being a bad conductor, the sudden variation arises from the compensation acting beforehand. The glass balance spring, No. 790, was constructed subsequently, and the compensation laminæ being thicker, obviates the error. Were proof wanting of the delicacy of construction necessary to perfect a chronometer, this would afford a striking one.

We are, Sir, &c.

84, Strand, 15 Nov. 1836. ARNOLD & DENT.

[In presenting our readers with the foregoing letter, from Messrs. Arnold and Dent, we consider it due to those gentlemen to point out the great pains which they have taken to improve chronometers, and the numerous costly experiments which they have made with this view, many of which have been recorded in the pages of this work. At the same time, considering the great importance of the subject, we must express our satisfaction in finding the Nautical Magazine chosen as the exclusive channel through which the results of their labours are given to the world in their complete state. The employment of glass as part of a chronometer, and that in so delicate and important a part of the machine as the balance-spring is well known to be, is indeed an invention of no ordinary kind. As there is now evidence that it will be attended with complete success, it affords us still higher gratification, seeing, as we do, that on the account of cheapness, as well as good performance, it must eventually lead, at no very distant period, to a complete revolution in the manufacture of chronometers. Cheapness with good performance is the great desideratum to secure real utility, and we have little doubt that the present price of forty guineas, to which Messrs. Arnold & Dent have already reduced the value of the chronometer from eighty, by this invention will become still less.—Ed. N. M.]

THE ST. ESPRIT.

" For this, be sure to-night thou shalt have cramps,
Side-stitches that shall pen thy breath up, ——"

The Tempest.

IT is a well-known saying among seamen, that, if all the ocean were like those parts over which the trade-winds blow, old women might go to sea. In truth, the weather there generally is very delightful; and by the contrast, to the voyager when coming from the stormy north in the winter season, most particularly so.

There are few who have been within the tropics, even among the most robust and healthy—not to speak of the valetudinarian—who have not enjoyed the fine sunny weather, the fresh and pleasant eastern breeze, the clear blue canopy of heaven, lit up by the silvery queen of night, and the starry effulgence, in glorious magnificence. But, there is one sight above all others, when nought else save air and water surrounds the voyager, that fixes his attention, and assures him that, however poets may have exceeded the sober reality in most of their descriptive scenes, their powers of fancy are unequal to do justice to that unique picture of nature, when

> "The glorious potentate that rules the day,
> Wheels his bright chariot down th' Atlantic wave."

In the tropical latitudes, the sun descends, as it were, into the bosom of the deep, amidst the most gorgeous array of meteoric drapery that the most fertile imagination can picture to itself. We have, in our own dear England, watched with delight his departure behind the mountains that border on the Severn, in what we may indeed term splendid grandeur for such a northern clime; but, compared with the warm and glowing tints that bedeck a more southern sky, it was a mere shadowy representation of a glorious sun-set in the far west: the rich imperial purple, the sombre bronze, and the brilliant golden hue, were wanting, to give, in relievo, the fairy forms of vapoury castles, isles, rocks, &c. &c., upon the bright crimson ground which overspreads all the lower concave of the heavens, almost from S.W. to N.W., and fading as it approaches the zenith into a delicate blush, where rests unchanged the beautiful ethereal blue.

It is a sight inexpressibly delightful, and cold indeed must that heart be which could not be warmed at the display of nature, thus dressed up in her most costly robes!

We had all enjoyed one of these splendid sights, nor far from the reported site of the vigia "St. Esprit," which, like the baseless fabric of a vision, has disappeared, and left not a wreck behind. Various were the opinions among the passengers, several of whom were old voyagers: some thought it was originally the production of a submarine volcano, and had submerged: others, that the bottom had been bodily uphove by an expansive force acting in the earth, which had subsided again; whilst several contended that it was a coral structure based upon the summit of a submarine knowl, and, although not found by those who looked for it, would, one day or other, come to light through the industry of its own minute architects, and vindicate the veracity of the reporters: one only disbelieved in toto its existence.

The remarks then turned on the shortness of the twilight, and speedy approach of night which followed the sun's departure, when the mate of the ship called out, "A light on the starboard bow."

There had been all day a fresh steady "trade" from E.N.E., and the ship was speeding her way at the rate of eight knots an hour, with studding-sails on both sides. Shortly after the announcement of the light, the wind suddenly lessened almost to a calm; and immediately after, ere the ship had lost her way, a smart breeze came rattling from the north, which made the sails flap and shake with such violence, as seemed to threaten their being torn out of the bolt-ropes, besides the loss of the top-gallant studding-sail booms.

All now was bustle and disorder; the former among the crew, the latter with the sails: the alacrity, activity, and strength of the sailors, and, more than all, their fearless disregard of danger, in laying out upon the rocking yards, perfectly astonished those of the passengers who had not before crossed the ocean, and involuntarily elicited their admiration and applause. Indeed, abused as they are, sailors are still a race of truly noble fellows.

Before the sails, which had been lowered, could be properly secured, the capricious wind had veered round to an opposite point, blowing in renewed puffs, at intervals almost dying away, to be again renovated by some extraordinary agency. The ship when taken aback by the south wind, had gathered stern-way, and seemed to be rubbing her keel against a pebbly bottom, and apparently every now and then jumping, as it were, over rising banks. The steward came up from the cabin and called out that the ship was aground; the captain rather sharply desired him to go down and prepare supper; but ordered the lead over the side, observing to an old lieutenant, "we have hit St. Esprit, I verily believe," and calling out, "sharp look-out a-head," walked to the gangway, where the seaman with the lead, reported "no bottom," "that's clever," said the captain exultingly, "she's over it."

All the passengers, on the first notice of the light, had simultaneously followed the captain forward, to look at it. From the fluctuating motion, it had the appearance of faint sheet lightning, but seemed extremely circumscribed.

In a short time the sails were taken in and secured, and the top-sails double-reefed; the wind having again resumed its usual course from the east. The passengers being again congregated abaft, waited with impatient anxiety until the necessary duties had been completed, to question the captain as to his opinion of what had just happened. He remarked with an ominous shake of the head, that did not in the least appease the apprehensions of most of the party, "It is indeed very queer weather, quite unusual in these latitudes; we are assailed both from below and above, and I think, almost to a certainty, we must have grazed something below." "I am of opinion, captain," said the old

lieutenant, " that we have experienced the shock of a sea-quake; the sensations were exactly similar to those which I once felt on the coast of Peru." " Well, really, I had not recollected that such a phenomenon is not uncommon within the tropic — you may be right—likely enough, likely enough; but, (giving a start, and holding his hand up,) we shall have a 'sneezer' from north again—Mr. Wilson, (calling the mate,) clew up the top-sails"— " aye, aye, Sir."

These opinions, as if proceeding from an oracle, which, confounding or perplexing by the ambiguity or contradictive framing of its answers, leaving a double interpretation to be applied separately, according to the turn of the individual's wishes, and the tone and temper of his mind—seemed to have offered no relief to the inquirers—whether we had touched upon a coral rock, or had been shook by an earthquake, could bring no consolation, further than that we had, in either case, passed the first ordeal and were yet safe; but the *uncertainty* of what might follow, that state of " nothingness," which by anticipation is often worse than reality, and at all times and under any circumstances most painful and harassing to the mind, as it were with iron grasp seized hold of the imagination and bound it in fetters!

Appearances were unfavourable; a hurricane, or, at the least, a tempest of violence, seemed rising on the verge of the horizon, and preparing to burst its wrath upon our helpless bark!

There was a manifest uneasiness among the passengers, as they paced to and fro, silent, and with " leaden eye;" some extending their walk to the waist with hurried step as if practising for a wager; others proceeding for a yard or two slowly, and then wheeling round, and looking up as if startled at some shadowy spectre flitting by, and jostling each other as they passed.

The night had now set in unsually obscure, and dense murky clouds were gathering all around from south by west, to north; the sea, which until this time had been but slightly undulated, now suddenly began to rise and dash about without any regular set; in fact, as the seamen says, " a complete bobble;" and the easterly wind had again died away, the ship tossing about, unbalanced by sail, as if she had been a mere chip in a cauldron of boiling water!

The light which had so attracted our notice, and had almost been forgotten, in the multitude of ideas which had pressed upon and flowed from the minds of all of us during these strange vicissitudes, now reappeared in the same quarter: sometimes it rose in sparkling light like that of a rocket, at others in streams like the aurora; and now and then in broad flashes resembling sheet lightning, which, at intervals, shot up vertically to a great height, and seemed as if emitted from the dark bosom of the ocean; whilst, distinct from these, but darting through the whole expanse,

zig-zag or forked fire kept incessantly playing! It was an awful sight, and enough, under the otherwise impenetrable darkness, to have harrowed up the imagination of the stoutest heart!

All the passengers, save the old lieutenant and myself, had retired to the cabin: we remained with the captain, leaning on the bulwark, silently observing the flashes; but the seamen, who had now gathered together on the forecastle, were busy with conjectures. It was amusing, even amidst the feeling of awe and uncertainty which were awakened by the obscurity, the frightful stillness, and the occasional glare of the mysterious fire, to hear the remarks of these eccentric beings, scarce any two taking the same view of the occurrence, but all agreeing that it portended "no good."

The result is given verbatim:—

Boatswain. "I was sartin sure bad-luck would come out on it—did'nt I say so at the very time Mark the pilot came aboard? And here's what the shark of a purser's steward of the old Spitfire used for to sing in the galley; and all them as takes any notice whatsomever a'things, knows the same:

"'The ship what on a *Friday* sails,
Will sure to meet wi' storms and gales.'"

The cook. "As for the matter o'that, not no one will be a'ter disputing o' the thing, 'tis sartin sure as death! but, I'm a thinking, Bosin, o' that infarnal Spanish brigantine, as sent the two dozen black niggers over the plank, to try for the nearest way home agin, when the prog fell short; she must ha' crossed this here track ————"

I heard no more, for at that instant a sensible shock was experienced, and a very extraordinary sound, like the blowing of a huge whale, which was followed by a smothered sort of report, as if a cannon with damp powder had been fired. We all at the same moment ejaculated, "Did you feel that shock!" the captain now pointed out in the direction of the fore-yard-arm, a column of smoke, it was plainly seen even through the gloom, curling up and ascending to a great height. "By Jove, it is a submarine volcanic eruption," exclaimed the lieutenant; "Oh! for a spanking breeze; blow, good breeze, blow," said the captain, holding up his hand, and whistling in a peculiar manner: the air did not respond, it was still as death, and I shuddered as the old lieutenant remarked that the flashes were rapidly drawing nearer, and the sounds getting louder.

Our fate now seemed to depend upon a breeze springing up, so as to enable us to get clear of the circle of operations, for it appeared clear that we had entered within it, and that the eruption was spreading wider and wider! I endeavoured to be firm and collected under the appalling situation in which we were so

unexpectedly placed; but in spite of myself, as I gazed on the fiery particles that ascended, and heard the hollow suppressed kind of unearthly sound which followed every flash, my very soul sickened within me. I thought of the dreadful moment when the devoted ship should be sucked into the very vortex of living and liquid fire! aye! and what was equally as horrifying to the imagination, whilst consciousness remained, that, following that last and dreadful plunge into the very womb of the volcano, my roasted body would be ejected into the lightnings upon which my eyes were now tremulously gazing, a mere cinder! I involuntarily shuddered, and placed my hand upon my face—it was not a cinder! The act brought me back to myself—and, after uttering a sort of hectic "hem," which was attended with a nervous twitch of the muscles of the neck, I felt relieved, although still awake to the dread suspense that seemed to hold us in thraldom.

Again the captain held up his hand, as if to invoke the God of the winds to aid us in our helplessness. "Now it comes in earnest," he exclaimed, springing from the side, "sheet home the top-sails;" these words had scarcely escaped his lips, ere he roared out, "hold fast:" a gentle air, warm as the siroc, passed over us, bringing with it a faint sulphureous scent, the very smell of which made my heart palpitate; and my perturbation was not a little increased at the contradictory orders of the captain, so unusual with him; but being aware that his abilities as a seaman were pre-eminent, and that his experience and habitude of observation qualified him to understand in a great degree the prognostics of sudden changes in the perplexing fluctuations of the air; I was certain that this wavering was occasioned by some sign in the heavens which had caught his eye, and which, from my inexperience, was unnoticed by me: the sequel will shew that he was justified, and my conjecture right. I had moved from my station, and was proceeding to the gangway, when at the instant a tremendous gust struck us, and almost immediately the ship plunged so deep, that I firmly believed the crisis had arrived, and that a gulf was opened beneath her, into which we were now descending. She, however, rose again, as if repelled by some hidden power, rocking from side to side, the foaming crest of the billow rushing past on either side, and curling up over the bulwarks in the most frightful manner! the same grating noise, as noticed before, supervening. The wind blew with the strength of a hurricane; from the clatter aloft, I conjectured that the top-gallant masts were carried away; in a few minutes it was a dead calm again! and the sea reduced to its former irregular motion. "We are in a mess, captain," said the lieutenant. "You may say that truly," replied the captain, "but," added he, "by the blessing of heaven, I'll try her before it, if the wind comes from

the north again." "You are right," rejoined the lieutenant, "we must keep clear of the vortex, or we shall be snug in Davy's locker before the middle watch, that's certain." "Oh! for another puff from the north, and she shall spank before it, if she buries herself," said the captain in a most emphatic tone! Here was pretty consolation for a landsman to digest! Heaven defend us!—not the latter, I trust, as a consequence of that alternative: yet it is better, thought I, to be drowned instanter than to be roasted, but, spiriting up myself with that hope, the benison of a beneficent Providence, which never wholly deserts us, even to the last gasp, I took courage from the conduct of those before me; but, the horrible, the oppressive, the terrifying, stillness which followed the wind, had something in it that affected the mind almost to despair. I can liken our situation to nothing more appropriate than to a powerful and active being suddenly struck with palsy, having all his senses left perfect, but himself unable to move from the spot, whilst he is surrounded and menaced by danger on all sides.

The sonorous voice of the brave captain once more resounded—"Here it comes—box the head-yards round, boys—let her pay round off—starboard braces in—haul away, my lads, haul away—so—stand by to square the yards again—mind your helm, Mr. Wilson, an extra hand—off she goes, look out when she gathers head-way."—Off indeed!—the hurricane now came with such a sudden burst, and with such extreme violence, that it seemed to sound our parting knell! the ship's bow rose so fearfully towards the perpendicular, and yet so slowly, that she appeared suspended as if by the agency of magnetic influence, while the forked lightning darted in every direction, confounding every thing in one blue glare, and utterly stupifying and leaving the mind a chaos. I felt unnerved, electrified, feeble, and reduced to the most perfect state of helplessness, and sank down exhausted; but the still manly and undismayed voice of the captain, heard even amid the din of elemental strife, reanimated me. "Hard a starboard—keep her right before it, Mr. Wilson—so—steady." I started up, but instantly fell again, as down the ship plunged with such desperate haste, as to bury half her length in the foaming, roaring, briny fluid, which, as she rose again, rushed aft, sweeping every thing moveable from the decks!

At this critical moment, I had fallen again upon the deck close to the bulwark, and groping about, had seized hold of a ring-bolt in the side, with a convulsive grasp, that when the dashing torrent passed over me, I retained my hold, or must have been swept away, as was the fate of three fine fellows, who found a watery grave that dreadful night.

I felt as if a large mass of molten lead had been suddenly

dashed upon me, and as suddenly removed—for a few moments I was senseless—on recovering my consciousness, the first sounds I heard were issued from the voice of the still undaunted captain; "steady, boy, steady—me-e-t her—so—steady." The wind was raging, and whistling through the cordage as if ten thousand Eolean harps had been suspended round the masts, the ship now flying with the rapidity of lightning, now stopped in her mad career as if arrested by some giant grasp—now going down stern foremost, falling, as it were, into the very abyss of the deep—and anon plunging and burying herself into the turbulent, frothy, and sparkling wave! I grew sick and giddy, and felt as if the pangs of death were creeping over my frame; but I still held my grasp of the bolt, until nature gave relief by the discharge of the salt-water I had swallowed. Oh! the horror of those dreadful moments—those dreadful emotions, to which no other feelings on earth can be likened—my ears seemed plugged with lead, which the heavy hand of some demon was driving home with a mallet—my temple, arteries, distended, as if about to burst, and my eye-balls as if protruding from their sockets; my head rolled round and round, and I gasped for breath, and, giving a loud convulsive sob, rolled from my covert upon the deck!

As my senses gradually returned, I fancied I heard roars of laughter, and felt myself in an unusual position, suspended, like a ball of cotton, by the extremes, between four sailors, and I could indistinctly hear a rough strong voice call out, "Here, steward, hand this here gentleman to his berth!" And I then awoke!—Reader, all this was but a dream—the offspring of an incubus, from indulging in an extra glass of grog!

Take ye warning.

11*th January*, 1836. VULCAN.

St. George's Channel Navigation. Marks for Sarn Badric, Cardigan Bay.

MASTERS of ships navigating St. George's Channel will do well to attend to the following information:—

In Heather's chart for St. George's Channel, the clearing marks for the end of Sarn Badric are given most incorrectly, and would infallibly place a ship upon the rocks, viz. the Rivel Mountain on with the Gimlet Rock, and the Sugar-loaf (Rhill) on with Pencillan Head.

The following correct bearings and marks are therefore given for the guidance of ships, viz.:—

The dry patches of large stones, or rather rocks, near the outer end of Sarn Badric, bear as follows, viz.

From	Harlec Castle	S.	68°	45′	W. Mag.
,,	Bardsey Island (centre & highest part)	S.	50	10	E. ,,
,,	Sugar-loaf (Rhill Mountain). . . .	S.	28	00	E. ,,
,,	Garn Madryn	S.	8	15	E. ,,
,,	Rivel Mountain.	S.	15	30	W. ,,
,,	Moel Hebog	S.	49	15	W. ,,
,,	Moelfre Hill	S.	88	20	W. ,,
,,	Cader Idris	N.	63	00	W. ,,

From these rocks the shoal extends W. ½ N. rather more than one mile distant, with not more than ten feet water over it at low-water spring-tides. The marks for clearing the outer or west end of this shoal are as follows, viz. The whole of the Rhill Mountain (which is a long level-topped hill) just clear of Pencillan Head. The Rivel must not be brought to the northward of N. 21° E.; nor Garn Madryn to the westward of north, (magnetic.)

W. L. SHERINGHAM, Lieut. R.N.

JERSEY FISHERIES.

[The following is the substance of the report lately made by the Committee of Harbours, &c. at Jersey, to the Governor, on the subject of the Oyster Fisheries. The suggestions of Lieut. Sparke as to the future line of demarcation between the English and French fishermen, appear to be most excellent, and, for various reasons which are distinctly given, most likely to give satisfaction to all parties:—]

REPORT ON THE OYSTER FISHERY, *presented to the States of the Island of Jersey on the 28th of January*, 1834.

THE Committee of Harbours have taken into consideration two letters addressed to their president by Lieut. Sparke, lately commanding his Majesty's ships stationed at this island for the protection of the oyster fishery.

The zeal with which that excellent officer has so worthily executed the task confided to him, the special care he has taken of the interests of the fishermen during the period of his command, deserve the highest acknowledgments; and the intelligence he has displayed in all that he has done for the advancement of that important branch of industry, evinces the knowledge he has acquired on the subject, and gives great weight to the information he has collected and laid before the committee, and to the accompanying suggestions. The committee therefore have thought it their duty carefully to consider his letters, and having satisfied themselves of the accuracy of his observations, and being convinced that the measures he points out, if adopted and rigorously adhered to, would increase the activity and insure the prosperity of that fishery, have resolved to lay before the States the following report on this interesting subject:—

At all times the oyster fishery has engaged the attention of the authorities of this country: as early as 1606 the royal court which then possessed legislative as well as judicial power, declared its conviction of the influence of that fishery on the welfare of a numerous class of citizens. Several documents of that period which have been preserved in our records, prove that the court sought to maintain the rights and liberty of that fishery; and the regulations in the code of 1771, which were passed by the States in 1755, shew the interest which the legislature took in its preservation.

In 1797, the exportation of oysters from this island considerably increased, and since that time the fishery, which was previously confined to the fishermen of this island, drew to our shore a crowd of fishermen from the coast of England.

From 1810 to 1819 it attained so prosperous a state as to become a branch of commerce worthy to fix the attention not only of the State, but of H. M. Government: above 300 vessels, manned by more than 1500 seamen, were annually employed in the fishery; a thousand of the poorer inhabitants of this country gained their livelihood in preparing their cargoes, and the circulation of a considerable sum created greater activity in the operations of the general commerce of the island.

The States did not neglect to take such measures as depended on them, to fix the trade in the island, the convenient position of which first attracted it. The construction of a port adjoining Mount Orgueil castle was ordered by you; and, although England had almost an equal interest with yourselves in encouraging the fishery, you asked for no assistance from H. M. Government. It was at the expense of the island that the port was constructed; and although not as complete as might be wished, it bears undeniable evidence of your wisdom, and of your vigilance, in properly fulfilling the great charge entrusted to you—that of promoting the prosperity of the county, and the happiness of your fellow-citizens. This measure alone cost the county a sum of about £16,000, levied upon its trade by means of the anchorage dues.

From the period at which the French authorities began to interfere with the British fishermen, and attempted to drive them from the oyster-beds adjacent to the coast of France, the States were fully aware of the object they had in view. They immediately saw that our neighbours had become sensible of the advantages we derived from the oyster trade with England; that by ejecting us from the beds where the shallowness of the water renders the labour of the fishermen comparatively easy, and driving us to the centre of the strait which separates the two coasts, they intended to ruin our fishery, deprive us of the trade, and transfer it to the port of Granville. Unfortunately we could not succeed in impressing the king's Government with the conviction we ourselves enter-

tained. The order transmitted to his Majesty's naval station in 1822, (when complaints were first addressed to the king's Government respecting the annoyances given by the French to our fishermen,) which went to protect the oyster fishery within a league of the French coast, was revoked in 1824. The result of the differences caused by the French themselves in execution of the plan they had laid down, was the fatal convention then negotiated by Prince Polignac, ambassador at London. Professedly our fishermen were thereby prevented from approaching within two leagues of the French coast, but in reality, by the interpretation given to the convention by those who were appointed to put it into execution, they are not allowed to approach it nearer than three leagues in those parts where oysters are plentiful.

It is impossible to account for the motives which were considered sufficiently powerful to induce his Majesty's Government to accede to an arrangement, even though it be but temporary, so contrary to the law of nations, and so prejudicial to the rights and interests of his Majesty's subjects; the committee have before them the note of the Prince Polignac, which contains the proofs and arguments on which that minister grounded the pretensions of his Government, and as an act of duty, the committee present a summary thereof.

The Prince Polignac drew his proofs from a report of the Admiralty of Coutarne, made in 1785, which stated that there were two beds of oysters, the one opposite Regueville, the other opposite Gefosse; that of Regneville extending four leagues to sea. He cited a decision of 1785, which forbad the fishery of oysters from the 15th Oct. to Holy Saturday. Further, he cited a report of the Chevalier Chardon to the Marshall de Castries, French minister of marine in 1786, in which it is stated that there is an inexhaustible bed of oysters from Regneville to Jersey. Amongst other beds which he specifies, is the Foraine or Cotaire, on which oysters of different quantities are dredged. That report likewise describes the manner in which the fishery was carried on. The French ambassador relied also on *proces verbaux*, the earliest of which are dated in 1814, by which it appears that the fishery is permitted on the beds of the Foraine, St. Germaine, Gefosse, or the Cotaire those to the north of Granville, until the 15th of October, and not elsewhere; and that after that period, the fishery is allowed on the beds to the south-west of Granville, that is to say, on the beds formed by the French, to whom they exclusively belong. The Prince Polignac also brought forward the declarations of old fishermen, with a view to prove that the oyster fishery had been at all times carried on by them to the distance of three and four leagues at sea, and even occasionally in the immediate neighbourhood of Jersey.

The French ambassador could gain but feeble assistance from

these sources. If rules had been established by the French Government in 1785 for preventing the fishery from taking place before the 15th October, our regulations, dated in 1775, which forbid fishing for oysters before the 1st of September, are more ancient. If the Admiralty report of 1785 prove, that at that time the French had a considerable fishery in these parts, the acts of the court of Jersey of 1606, shew that a long time (at least two centuries) before, that fishery was known to, and carried on by the inhabitants of this county; and as to the Chevalier Chardon, who, employed by the French Government to survey the fishery in 1785, declares that an inexhaustible oyster-bed extends from Regneville to Jersey, our right on that bed is evidently more ancient, and quite as well established as that claimed by our neighbours. It is then evident from the other documents produced by Prince Polignac, that in reality the French never entertained the idea of preserving the bed situated to the north of Granville, since they permitted the fishery at all times, and only interdicted it from the 1st April to the month of October on the beds to the south-west of Granville. This fact is proved by the *proces verbaux* above-mentioned, which are subsequent to 1814, and shew that the only beds reserved as a private domain are those contained in the space between Granville and Chaussy.

The declarations of the Granville fishermen, not made on oath, are of no weight; in fact, the interest they had in appropriating to themselves the whole of the fishery is too glaring to allow of their officious depositions receiving any credit. The marine inspector of Granville who received them, is equally open to distrust, the adverse parties not being present to watch their interests. But, on the whole, these declarations only go to establish the existence of vast oyster-beds between the coast of Jersey and that of France; and that the Granville fishermen have worked them more or less from time to time. If the same course had been adopted by H. M. Government—if our fishermen had been examined like those of Granville, it would have been easily proved that the French have never, or at least very rarely, dredged on the banks to the north of Chaussy, before the English fishermen, because they found more oysters than they required to the southward of that line, without exposing themselves to danger, or incurring the increase of labour required to fish beyond those limits.

Prince Polignac could not expect to reap any great advantage from these proofs. Therefore, whilst he admitted that his Majesty's Government had a right to insist that the line of demarcation should be settled at one league from the coast of France, he alleged that the limits proposed on that basis by the British minister in the conference of the 15th of January, 1824, presented insurmountable difficulties—1st, that of defining the oyster-beds, which in reality have been formed by the French; 2nd, the facility

the English fishermen would have of introducing themselves in the small interval which divides the beds from each other; 3rd, that of deciding if the British fishermen would have the right of dredging the oysters which by the action of winds and currents may be drifted from the beds belonging to the French beyond the limits, and which might be claimed by both nations. The futility of these objections is manifest. The beds belonging exclusively to the French might be easily pointed out and defined by seamarks. Let the line of demarcation be settled at one or at two leagues from the coast, it will always be possible that the more fearless, and the least delicate, amongst the fishermen, may still illegally infringe the limits, and the further the line of demarcation is extended from the coast, the more difficult it is to detect the delinquents; moreover, what justice would there be in depriving an individual of his rights, and making them over to another, only because it might be possible that he would make an abuse of them. The fear of a dispute respecting those oysters which might by the force of winds or currents be drifted from one bed to another is illusory; for it would be difficult, nay, impossible, to ascertain where they have been bred, and, like floating fish or game, they belong to those in whose waters or in whose domain they are taken.

Prince Polignac rested his last argument on the advantages of conciliation. In order to reconcile the differences which had arisen, it was necessary, according to his theory, to yield every thing to France. In virtue of the order of 1822, and on the basis of the treaty proposed by the British Government, the French were to possess their exclusive domain—the oyster-beds situate within the limits of one league from low-water mark along the coast and the isles of Normandy, and they were to share with us as a common domain the oyster-beds beyond that line. But, according to the system proposed by the French ambassador, we were to be excluded from all participation in those oyster-beds, which alone are profitable. Is it necessary to point out the injustice of such reasoning?

It is clear that principles, facts, and the usage of nations were in our favour; and if in 1824 the pretensions of Prince Polignac prevailed, it was because our interests were sacrificed to state necessity, or from a strange remissness on the part of those who were entrusted with the negociation.

The object of the French negociator was entirely accomplished by that provisional negotiation. It guaranteed to him all that he had proposed to secure; and the manner in which it was subsequently interpreted, when the limits it laid down were settled on the spot, gave him more than he ever dreamt of claiming. Thus our rights and interests were twice misunderstood and sacrificed. The British fishermen were excluded from all the oyster-beds on which they could work with advantage; compelled, if they con-

sented to respect the line of demarcation so unjustly traced, to dredge in deep waters, where their occupation became laborious, and little productive, it was to be expected that they soon would become dissatisfied with their condition; that the merchants, no longer able to procure a sufficiency of oysters, would go to Granville to lay in their stock. These were the fruits which the French hoped to gather from the provisional convention of 1824: it was not likely that they would subject them to the hazard of a renewed negotiation for a definitive treaty; since that period the question has not been mooted.

The expectations of our opponents have not been however fully realized in the event. The courage, industry, and perseverance of our fishermen have enabled them partly to surmount the obstacles they had to encounter; and it must be admitted they have been found sometimes in the violation of the limits, a resource of which even the extreme vigilance of the French cruizers could not deprive them. By these means they have been able to supply the market; and although the trade is not now so flourishing as it was before it encountered these difficulties, still it is sufficiently important to call for the benevolent protection of his Majesty's Government; and if it be accorded to the extent that we have a right to expect, it will without a doubt resume its former activity.

The state of things which the committee have above described, has nevertheless produced great inconveniences. Nothing can tend more to demoralize the men employed in the oyster fishery, than the situation in which they are placed by the provisional convention. It is difficult to persuade them that it is criminal to profit by the bounties of Providence; to explore the bottom of a sea, (common to the two nations for every other purpose,) in order to obtain by the sweat of their brow the necessary support of their families, especially when they well know that there are to be found abundance of oysters for all who will take the trouble of dredging them. No doubt a great portion of the fishermen prefer dredging by day without the limits, rather than be exposed to capture and detention by the French cruisers, which separate them from their families, make them lose their precious time in inactivity, and oblige them to spend in idleness the fruits of their economy. But there are many who do not hesitate to incur all risks consequent on the violation of the limits, in the hope of speedily and easily obtaining their cargoes. The more honest are under the necessity of following this example, or of abandoning their avocation, being otherwise unable to compete with the more daring. Once embarked in this hazardous career, they cannot be expected to stand upon any great delicacy as to the means of obtaining their end. The extreme rigour exercised by the French towards those who have, or who are supposed to have infringed the limits—often against those who, though innocent, are made to suffer for the

guilty; the vexations to which the complete state of hostility which exists between the French cruisers and the fishermen gives rise, perhaps induce the latter to take their revenge, when an opportunity offers, through the absence of the former, and to dredge wherever they find most oysters; and thus, to make up their losses which they have sustained by arbitrary detention. For the French, whether justly or unjustly, accuse them of not even respecting the reserved beds near Granville, which are incontestably private property. It is hardly necessary to say, that the habit of violating the property of others, that the disorders occasioned by such expeditions, undertaken at night, must have a baneful influence on the morals of those engaged in them; and that the oyster-beds which the French work, the exclusive property of which has never been denied them, suffer much more from that state of hostility than they would do if more just limits were fixed, and if the British fishermen could freely and openly dredge at one league from the coast, on a space common to both nations, where they would find a sufficiency of oysters, without having recourse to means as dangerous as they are blameable. Under the present system, a number of fishermen are detained during the season at Granville, always to the great detriment of their families, often to their ruin; and in moments of exasperation, collisions have taken place between them and the French armed force, and in a time of profound peace blood has even been shed.

If the violation of the limits has often given cause for the just detention of the fishermen, it cannot be denied that a great number have been unjustly and arbitrarily captured and detained at Granville. It is impossible it should be otherwise, when the French officers are at once accusers, witnesses, and judges, and there is no appeal from their decisions. This is evident, from the fact that when his Majesty's ships are on the fishing ground, vessels are seldom detained, for the commissioners at once inquire into the circumstances of the capture, and if the fisherman be not in the wrong they set him free. The committee must state that seizures have been more frequent, more unjust, and more vexatious this year than ever, as appears by the petition of the fishermen which was laid before you at your last meeting, the allegations of which are well founded, and can be proved if it be required.

The provisional convention therefore, far from having settled or diminished the differences which had before arisen, has on the contrary increased them, and made them assume a more formidable character. If the intention of the French be that which they avow, the protection of the oyster-beds they say they have themselves formed, or the more probable one we impute to them, of compassing the ruin of our trade for their own benefit, they appear to have been equally unsuccessful. Some other plan must therefore be devised to reconcile the respective rights and interests of the two

nations. The committee purpose to point out to you that which they think most advisable to accomplish that desirable object.

Though the French sedulously continue the system they at first adopted of driving our fishermen from the coast, it appears by the report of Lieut. Sparke that they do not altogether confine themselves to that mode of supplanting us. Some English merchants, preferring their own individual interests to that of their country, have for two or three years past gone to Granville to purchase oysters. In order to fix them there, the French Government allows them a premium equal to the dues paid on that fish, which reduces its price considerably. It seems that for some time those merchants found the trade lucrative by evading, through some fraud, the payment of duties in the English ports—that more than sixty cargoes were introduced in this way within two years, and that the British Government have been defrauded of duties to the amount of £2,700. If that trade had continued, it would have annihilated the fishery of this country. It was Mr. Sparke who first discovered it, and he took immediate and decisive measures to put a stop to this fraud, and thus protected us from the loss with which we were threatened. The duties on oysters imported into England from France is 4s. 6d. per tub, and is considered sufficient for the protection of our fishery, if rigorously enforced. It is therefore necessary that the State should make known to the Government the fraud that has taken place, in order to awaken its attention, and induce them to prevent in future the success of all similar enterprises.

There is also another subject of the highest importance, which the committee have to submit to the consideration of the States. From the observations made by Lieut. Sparke, it appears that a large extent of sea in the immediate vicinity of the islands, including the bays of Granville and St. Catherine, and the space between the rocks called the Anquettes and the Ecrehor, offers fit beds for the propagation of oysters. Already there are to be found there several oyster banks, which even in their present state would be a great resource to our fishermen, if they were preserved with care and attention. Mr. Sparke, and all those persons who have acquired a knowledge of the matter, are of opinion, that at a moderate expense it would be easy to sow new oyster-beds in those parts, and that in a few years, if the States adopt efficacious measures to preserve them, and rigorously enforce their regulations, we would have enough oysters there to supply the demands of trade, and the consumption of the island; that eventually we might be able to give up altogether the fishery on the coast of France.

This project, which may be so easily tried, deserves all the attention of the States. If it succeeds, the advantages to be derived therefrom are striking; our fishermen would find almost at

their own doors the means of gaining a livelihood; they would fish with more economy, by means of less expensive boats than those they now employ, and they consequently could sell the produce of their fishery at a cheaper rate, and thus destroy all hope of competition which the French seem still to entertain; they would no longer be exposed to the dangers they run on account of the present distance of the fishing ground on a coast studded with rocks; they would be at all times near the harbour, where they would find that shelter from the storm which they are now often forced to seek in the roads of Chaussy, with the prospect of being captured, taken to Granville, and detained during a part of the season; moreover, the difficult question of the limits would become of no importance. These advantages would be great even in time of peace; should war be declared with France, they would be incalculable. It may likewise be reasonably presumed, that the fishery would be more advantageous to the island—that a greater number of inhabitants would join in it, and that soon we would reap great benefit from the outlay that the prosecution of this plan would require.

The preceding observations suggest three very important measures, which the committee strongly recommend for immediate adoption by the States:—

1st. Earnestly to pray his Majesty's Government to obtain a settlement of the limits of the fishery upon a more equitable basis than that fixed by the provisional convention of 1824, which would afford equal advantages to both nations—which would put an end to all those differences that every year sees renewed, to the hostility carried on between the fishermen and the French cruisers, and to the vexatious and arbitrary proceedings which result therefrom.

2nd. To pray his Majesty's Government to exert an active vigilance, in order that the duties on oysters being the produce of the French fishery, that are imported into England, may be strictly levied, with a view to protect the public revenue, and the fishery of his Majesty's subjects.

3rd. The creation of new oyster-beds in the vicinity of Mount Orgueil, and other places on the coast of the island where it is practicable, and the preservation of such as already exist.

The first measure is that which presents the greatest difficulty; but the committee have reason to suppose that the times are propitious for the attempt. If the French Government can be in the end persuaded of that which experience must have taught, of the inutility of their efforts to benefit their subjects at the expense of the English; if they are convinced that it is the desire and the intention of the authorities of this island to concur with them in protecting those oyster-beds which may be considered as belonging exclusively to them; and if they are fully satisfied that it is our

intention to establish definitively our fishery within our limits, whereby a large space not easily passed will be left between our fishermen and theirs; it may be reasonably expected they will readily consent to a concession which, in accordance with the laws that regulate the intercourse of nations, will not deprive the French of a single advantage that they now enjoy, or militate against their interests.

The difficulty, not to say the impossibility, of watching so extended a line as that near which the fishery is carried on, at whatever distance its limits may be fixed, must strike every one acquainted with the subject. This is the great cause of the disputes that have taken place since the convention of 1824. It would not therefore be advisable to trace a line from north to south, at the distance of one league from low-water mark, along the coast of France and its dependencies. Certainly our fishermen would find within those limits an abundance of oysters; but pretences would not be wanting to annoy them, and the disputes which have heretofore taken place might be renewed. But a line traced from east to west—a convention in virtue of which British fishermen would be prevented from dredging to the south of that line—would prevent all difficulty. That line having but little extent, would be easily watched by the united vigilance of the British and French cruisers; and if it were carried sufficiently to the southward to allow the British fishermen a liberal portion of the oyster-beds on which the French never, or at least very rarely, fish, the former would find plenty of occupation in a shallower sea, and would not be tempted to infringe the limits in order to load their vessels expeditiously and with little labour.

The information which the committee have collected induces them to recommend, that you should suggest to his Majesty's Government that the new line of demarcation ought to commence at the rock called *La Marie*, and proceeding east, or nearly so, end at the *Tour d'Azon*; and that south of *La Marie* the limits should continue as they are at present; that the oyster-beds to the north and west of that line be declared the common domain of the two nations, and those to the south and east the exclusive property of the French fishermen. All the oyster-beds which the latter work would thus be definitively adjudged to them, and they still could, if any event rendered it necessary, use the others whenever they thought fit.

In that case, it would be necessary to give his Majesty's Government the assurance, that if the limits which were settled provisionally by the convention of 1824 are thus modified, the States will immediately pass a law, containing enactments of a nature to repress and punish by severe penalties any violation of the line of demarcation, and compelling the fishermen to register their vessels, and to bear distinctive marks that would make them known, and

would facilitate the means of detecting and punishing any delinquency they might commit.

The second measure which is recommended to you cannot, as the committee think, meet with any obstacle. It will be sufficient to shew its urgency, to induce his Majesty's Government to adopt it, and afford protection to the oyster-trade of this island.

The third measure, which has for its object the creation of a fishery in the immediate vicinity of this island, may be carried into effect independently of the two others, as it is entirely in the power of the States. Convinced of its great utility, the committee entreat you to take it into consideration as soon as possible; so that if it meet with your approbation, it may be accomplished without delay.

The committee propose that the States shall purchase annually one thousand tubs, or measures of oysters—500 in the first days of September, and 500 in the last days of May; that these oysters shall be deposited in such places as the Committee of Harbours, or such other committee as you may think proper to name for the purpose, shall fix upon, so as to form several distinct oyster-beds. The committee also recommend the repeal of 3rd and 4th articles of the law of 1828, which prohibit the importation of oysters less than two inches and a half in diameter, and that they should be replaced by an article that would compel those who bring or receive such oysters to set them aside in heaps on the parks, so that the person to whom you will confide the inspection of the fishery may have them carried to the new beds. They further recommend the repeal of that clause of the 9th art. of the said law, which grants one-third of the fines to the harbour fund, and the application of those fines to the purchase of oysters to increase the new beds. And, finally, the committee recommend that the fishery of oysters in the bays of Granville and St. Catherine, and in all other places where oysters are laid down, be prohibited under heavy penalties, until the new beds shall be fit for dredging, and that a committee be appointed to regulate the fishery every year.

And in order that the regulations you think fit to establish may be duly attended, and the new oyster-beds well protected, the committee recommend the appointment of an inspector, who shall be furnished with a good boat of ten or twelve tons burthen, with a crew of two or three men, who shall be invested with sufficient authority to enforce the law.

Such are the measures which the committee has thought proper to submit to you, with a view to preserve and advance the prosperity of a branch of industry, the benefits of which are known to, and fully appreciated by, all classes of the community, and which the States have heretofore encouraged and protected as far as lay in their power. But, in closing this report, the committee entreat the States not to lose sight of the recommendation addressed to

them some time since, to lengthen the pier of Mount Orgueil. The adoption of this measure appears to them of great importance. The harbour in its present state is too confined, and therefore inconvenient; all the vessels employed in the fishery cannot, during the season, always find shelter and security there. The want of more extensive parks has been long felt, but the space which affords shelter in the pier is too limited to allow the merchants to extend those they now have, or to form others; for if they were to lay down new ones further in the bay, exposed to the action of the sea, they would incur frequent and serious losses.

Port Natal, South Africa.

The following important information, on the harbour of Natal has been copied from the South African Commercial Advertiser of 26th March, 1836:—

We have been favoured by Capt. Haddon, of the Dove, with some valuable observations on the harbour of Port Natal. They are highly important to mariners:

The Dove brought a valuable cargo of ivory from Port Natal.

The following are the remarks of Capt. Haddon, to which we subjoin a letter from a gentleman who went as a passenger in the Dove from Algoa Bay. His testimony may be fully relied on.

Remarks for sailing to Port Natal.

"In leaving Algoa Bay steer out from the anchorage S.E. ¼S. per compass 40 miles, and then E.S.E. 160 miles; you will then be out of the stream, which sets at the rate of three to four knots per hour W.S.W., and you will have a little help by a current which sets N.E., (for in that part I was laid to with the Dove 36 hours, and only drifted 17 miles.)

Then shape your course to bring you into lat. 29° 30′, and long. 30° 30′; you will then be to the N.E. of Natal, and with a N.E. wind you will soon run down to it. It is easily known from the northward, as you can see the entrance better than from the southward.

Should the wind be from the S.W., you should only run to 30° lat. if the breeze is very strong, and the same meridian as before; but do not keep too close in-shore, as the wind dies away suddenly, and the strong current which inclines towards the shore may endanger the ship and lives.

The Bluff Point is easily known by the back-land running in a sloping direction, and several flat tops notched here and there. The Bluff is also very thickly wooded; and the other side low and sandy shore, with bushes a few yards from the beach.

If the wind is from the N.E. keep your ship under canvass, but with her head off shore; anchor in 9 fathoms; the Bluff S.W.

by S. If intending to enter the harbour, go in with your boats first, and sound for the deepest water on the bar, and lay buoys down, but they must be well made fast, or the tide will sweep them away. The bar consists of ridges. The wind from the S.W causes the deepest water to be close to the reefs, and N.E. makes it deepest in mid-channel. The surf is always worst at high-water; but it is seldom that you can pass it in a small boat without risk.

The course over in mid-channel is S.S.W., and you will see a large remarkable tree upon a hill, ahead going in, and keep this well on the starboard side.

Should you not find sufficient water for your ship to cross the bar at spring-tides, and you have cargo to land there, moor with open hawse to the N.E.

The winds blow strong at times, but seldom last more than 24 hours, and then there is not such a heavy sea sets in as at Algoa Bay, and the ground is equally as good. The cutter Circe rode out the heaviest gale ever recollected there, for four days.

There are two boats which in fine weather would greatly help in the discharge of a cargo; but the best way is to land it on the beach outside the harbour, as in fine weather, and off-shore winds, it is very smooth about half a mile to the northward of the bar.

In crossing the bar with a vessel drawing from 8 to 10 feet, if with a good, commanding breeze, et hands stand by the braces, as the tide is strong, and in shallow water a ship will not answer her helm quick enough without the help of bracing about the yards as required. In coming in, you shoal from 8 fathoms. It gradually shoals to 2 fathoms on the bar, and with good way you have not time to get a second cast on it. You then gradually deepen to 7 fathoms, and when a breast of a large sand-coloured stone, haul sharp up, and steer up for the sandy shore, and hug it as close as you can. The tide will keep you from getting on it. The anchorage is at the first commencement of the bushes, on the sandy point, and a new store abreast of you. If you run past the large store, on the rocky side, you will see a sand-coloured patch half up the Bluff side amongst the trees; but if you go past that, you will be sure to be get on a sand point, and ground.

I erected a beacon at the anchorage, and placed a buoy on the sand, with directions for others to be placed on the Bluff side, in lieu of the large stone, and there they are sure to be seen.

A ship will not take any hurt laying aground inside the harbour, as in the strongest winds it is as smooth as London docks (provided she is not a sharp-built ship.) A ship ought to be coppered, as the water fouls the wood very soon with barnacles, and the worms are very bad also.—The variation is 30° W. and the time of high-water at full and change from 4 h. to 4 h. 30 m."

We sannot forbear copying with the above the following eulogium on Capt. Haddon from the same source.

Bethelsdorp, March 3, 1836.

MR. FAIRBAIRN: Dear Sir,—Having been wholly occupied since my return from Port Natal, I have said nothing in public respecting either the passage or the country, which is but little known. Of the country, of which much might be said, I will now only say, that, without exception, it is the finest country I ever saw, and the climate is equally fine.

Respecting the harbour, bar, anchorage, tides, &c. I hope Captain Haddon will himself give you some account, as I think he has taken a much more thorough survey of the harbour, its entrance, and the depth of water, than has before been taken, and as he had abundant opportunity to do, his ship lying at anchor in the harbour from December 21st to February 3rd.

Were it necessary, I could speak with the utmost confidence and pleasure of the kindness and attention of Captain Haddon to his passengers. Nothing was left undone that could be done for their comfort, even to the giving up of his own berth when theirs was uncomfortable! He evidently would rather suffer himself than see his passengers suffer.

As it respects Captain Haddon's fidelity as commander of the ship, (which should in justice have come in with the account that has already been given,) I can say it was ceaseless. I never knew him asleep if the least danger was apprehended, and have known him for two or three days in succession go with no more than one or two hours' sleep in twenty-four. I have no concern with Captain Haddon's reputation; but it does me good to see enterprise and fidelity in business, and especially as in this case, when the ship was but chartered, and it would have been for the interest of the ship to have been detained longer.

Both when we went in and came out of the harbour, it was not in all respects the most favourable time for doing so. And here again, (while I would feel grateful to God for protection,) if it would do good, would I delight to speak of the good judgment. presence of mind, and good management of our Captain; but it is not necessary for the satisfaction of those who chartered the ship, for one of them went in her; and it is not necessary for his reputation elsewhere. My associates and fellow-passengers, I have no doubt, would say this and more, if it would do good.

Yours, &c. A PASSENGER.

THE NEW BREAKWATER IN MOUNT'S BAY.

IN one of our recent numbers we announced that an undertaking, second only to that great national work, the breakwater at Plymouth, was contemplated, on the stormy and dangerous coast of Cornwall. In considering the comparative ease with which such a

praiseworthy enterprise can be accomplished, it is rather surprising how one so vitally necessary to the protection of some of our first interests can have been so long neglected. Notwithstanding the many troubles with which the present age is supposed to be visited, there is indeed some true ground for self-gratulation, that these are times in which the spirit of a private company is sufficient to achieve an enterprise similar to one which, four-and-twenty years since, required all the powerful authority of Government. It need scarcely be said that Plymouth Breakwater is not yet completed.

Since the project of a breakwater at Mount's Bay was first contemplated, the numerous shipwrecks that have so rapidly followed each other on that iron-bound coast during the late autumn, have been so many proofs of the sound wisdom which suggested it. In adverting to these recent melancholy disasters, it will be no random assertion to say, that the dreadful sacrifice of life occasioned by the loss of the Clarendon West Indiaman might have been averted, had the Mount's Bay Breakwater been formed, as it is well known that she tried to put into Falmouth, as well as Plymouth, without success.

It has often appeared to landsmen not only most extravagant, but perhaps contemptible, that persons who have traversed the cheerless ocean for four or six months, on their return from India, when approaching the British Channel, should become so suddenly panic-stricken as to offer immense sums of money to be landed by a pilot-boat. Even as much as ninety guineas is absolutely known to have been given to a Deal boat for a passage from the Downs to Deal, the duration of which could not possibly exceed one hour! And yet, however ridiculous such an act may at first appear, it must be acknowledged that it is by no means imprudent or blameable in those who can afford it.

When the many dangers are considered that lie in the track of ships from first making land in the channel up to the safe entry of Gravesend reach, there is more real cause for apprehension perhaps in traversing these few short miles, than in all the rest of the immense distance from the Indian shores. Let him who is sceptical on this point sit down, and sum up the number of wrecks which have taken place on the Goodwin Sands, and the shores of the Swin channel alone, and compare this with the number of ships foundered on their passage from our Eastern viceroyalty, and he will quickly find that he need not have recourse to the losses on the Cornish and other channel coasts, to swell the frightful majority of the former.

It was once proposed to cut a canal from Portsmouth to London, of such dimensions as would allow of the passage of the largest of our commercial craft trading to the Thames. But gigantic as this undertaking would be, it could still do little more than half accomplish the great end in view. The success of such a plan would

be hailed as a blessing by that extensive, wealthy, and powerful portion of our community, who are bound to protect the lives of those engaged in either nautical or commercial pursuits. The happy adoption of railroads, however, does away in a very great degree with the necessity for canals; and in a case like the present, where a very extensive and perfectly secure harbour can be guaranteed, a railroad communication with the metropolis presents all that security to life and property which are indispensable, while it obviates the chief difficulty in canal navigation, namely, the enormous expense.

Reasoning from the above, if such a connection and safe way were desirable from Portsmouth, how much more so would it not be from one of our ports near the Land's-End, where the perils of our channel navigation may be fairly said to commence. Whoever originated the idea of converting the exposed space of Mount's Bay into a safe haven and port of retreat, it would be hard to say; but that the facility of doing so has been long proved cannot be doubted, since the public despatches of Lord St. Vincent, and Admiral Cornwallis before him, amply point out the great advantages to be derived from the project, and the conveniences afforded on the spot for carrying it into effect.

Government, at that time the only power equal to the realization of such a scheme, was already occupied with other important matters. In an auspicious moment, for our own mercantile interests, and a more peaceful era, the proposition has been again revived; and perhaps amongst the whole range of undertakings in which the vast capital of this country is employed for her welfare, there is not one more truly worthy of it, or one more likely, as an investment of money, to produce a better return.

Penzance, one of the principal towns of Cornwall, is situated at the mouth of a creek only ten miles to the north-eastward of the Land's End, and 29 miles west by south of London. The mildness of its climate, and the extreme cheapness of the necessaries of life there, have long rendered it the resort of the less favoured either in health or wealth.

The trade of the town is extensive, and is divided in the produce of its fishery and its mines. From the above reasons, and the advantages which its fishery will derive from the proposed breakwater, there is little doubt that it will become the site of a most flourishing and important place.

In addition to this, it has capacities for forming the seat of a first-rate naval arsenal and harbour, which from its position would also derive much importance. Second to our merchant service, the great source for manning our navy is to be found in the various fisheries on our coasts. In that of Mount's Bay alone there are now employed upwards of three thousand men. By affording them shelter for their boats and increasing the demand for their

labours, not only in the multiplied number of the neighbouring inhabitants, but also in opening a vent by which their produce may, by the proposed rail-road, reach the London market, the whole public welfare must be improved.

At present it certainly is no slight reproach to us, that, celebrated as we may be on the seas, our chief reliance for a great part of our fish markets is on Holland. But so productive is our Cornish coast, and so little able are we from want of proper locomotive powers to avail ourselves of its fishery, that in the Mount's Bay, French fishing-boats annually appear as regularly as spring comes, and, after making extensive purchases of makerel at a low rate, return to the continent with them, and there realize a profit of several hundred of pounds, which should, by every right, have found its way not into the pockets of foreigners, but into those of our own countrymen. Surely it is time to put an end to this neglect of our own interests.

Those who are acquainted with the fisheries of the western coast, are aware that off many parts of Ireland the cod abounds to a considerable extent; and not long since, a cod-bank was said to have been discovered by some of the fishermen of St. Ives, between that port and the sister isle. The existence of Mount's Bay breakwater may, therefore, in all probability lead to the permanent establishment of a cod-fishery between Ireland and that port.

To that particular branch of trade, connected with the south of France, the Mediterranean, Madeira, the Western Isles, and Indies, the completion of this project must necessarily be a matter of great anxiety. The cargoes with which the traders from these countries are generally laden, are of so perishable a nature, that nothing can be more desirable than a port which will present the twofold advantage of a secure haven, and a rail-road communication with the metropolis. The vessels in this trade are too often detained a greater space of time than would be required for their whole voyage to the Land's End, and not unfrequently become lost altogether. Nor will these advantages be less felt by vessels in the American trade. The great obstacle hitherto offered to running steam-boats from London to the United States, has been the difficulty of taking in a sufficiency of coal to last the whole time of the voyage, and the frightful sum which even the coarsest coal (the Welsh) fetches in the metropolis.

As soon, however, as the Mount's Bay haven is formed, this stumbling-block will be removed, since there the Newport coal is to be obtained, of the first quality, at the low prices of eight to thirteen shillings the ton; and steamers having thus supplied themselves with fuel, have only to touch at any port in Ireland, there to obtain provisions; and thus in every single voyage so made to America, a saving will have been effected of *one half* the expenses.

Second only to the great saving of human life which this project will effect, there is not a more important benefit which any undertaking of this kind can be expected to confer, than that of facilitating the intercourse with a land which was peopled by our fathers, which holds in common with England the same language, and to a great degree the same admirable spirit of human laws, and with which it should be always the earnest desire of each true lover of his species, that we may ever march hand-in-hand in the advancement and maintenance of freedom, peace, civilization, and science, and in the enjoyment of that happiness which such blessings must diffuse at large among mankind. W. M.

The Merchant Seaman.

Of all the useful information brought under the notice of the readers of the Nautical Magazine, nothing has interested me more, as a traveller by sea as well as land, than the remarks on the subject of our mercantile marine. The advantages to be derived by the public from ships being built on strong and safe principles, in the pages of this valuable work have been fully and ably pointed out, and proved in almost every possible way. The subject is one which, from its magnitude and importance, calls loudly for the attention of an enlightened and liberal government, jealous of the lives and property of those over whom it is, or ought to be, the watchful guardian.

In this age of legislation, when almost every trade, occupation, or pursuit is made the subject of some special act of parliament; when house property, from the palace to the pig-sty, is placed under the *surveillance* of qualified persons, employed and paid for that purpose, to take care that in their erection the safety of the public is attended to by compliance with the provisions of the several statutes for that purpose made and provided; when even the coercion necessary to make the jackass perform his daily labour is limited by parliamentary enactment; surely, when human life to a very great extent, and property to an amount almost incalculable, is every day placed in jeopardy by being embarked in vessels that may with more truth be denominated sea-going coffins than trust-worthy ships, it might not be unworthy of a reformed parliament to turn its immediate attention to seek some remedy for the numerous sea murders that are almost daily perpetrated under the name of shipwrecks. It may be replied, that the sea traveller will only take his passage on board ships of known character, and that the merchant may safely be left to protect his own property. But what is the situation of each? There are few travellers, if any, who take the trouble to inquire on entering a stage-coach when and where it was built—whether all the various

parts are secure, and of sufficient strength to perform the journey with safety; and if he even did so, the reply may readily be anticipated, "All right, your honour, step in." So it is in going on board ship—that which is first and readiest for the purpose is adopted, without any question being asked.

But the sea traveller, when once embarked, is in quite a different situation to him in the coach. With the latter, should an accident occur, either by overturning, breaking down, or from the unskilfulness, carelessness, or drunkenness of the coachman, he has some remedy. At any rate, his luggage is taken care of; if not killed, his dislocated limbs are renovated at the expense of the coach proprietors, and he has a well-grounded expectation of getting a further alleviation of his disaster in a pecuniary point of view. Contrast this with the condition of the sea traveller, in the event of shipwreck: no matter how improperly and insufficiently the vessel was originally constructed, or how rotten and unseaworthy she may be, she is insured—no matter how incapable the master, or whether he turns out to be both drunken and careless—the storm rages, down goes the ship into the ocean, and he along with her—the waves close over them both, and put a stop to all inquiry. The notification of the loss at Lloyd's is a receipt in full of all demands to his surviving relatives; unless, anticipating his fate, he has covered the value of his luggage by an insurance, of which more anon.

In regard to the merchant, it is true that in general he does protect his property by insurance, but if so in all cases, he does it at the expense of the public, though not immediately felt by them. John Bull is a docile animal in all that does not attack his pocket *directly*, giving himself little trouble about remote contingencies, which may at some after period increase the price of his wants, either of necessity or luxury. There can be no truth, however, more obvious, than that every ship which is lost, whether she were bringing Johnny butter and bacon from Ireland, sugar and rum from the West Indies, tea from China, or wines from France or Portugal, must, in a degree proportioned to the extent of that loss, affect the value by advancing the price of the kind of article lost in her, which advanced price honest Johnny pays, with a grumble to be sure, but without, in addition, troubling himself to inquire into the *why* and *wherefore*. The loss however makes no difference either to the owner of the ship, or the proprietor of the goods, both have taken care to effect an "insurance;" the merchant to the value of his goods, together with a *profit* equal at least to what he calculated on getting, had they reached their port of destination; the ship-owner, to the full value of his ship, and likely "something more," together with the freight, as he would have received it had he safely landed his cargo at the port of destination. Thus, in the case of shipwreck, he may say with my coun-

tryman, and without making much of a bull either, that he has "*gained a loss.*" So far all seems apparently right—the public is the general paymaster—matters pass off quietly—the system "works well."

But what becomes of the hard-working sailor, who, for the support probably of an aged parent, or of a wife and family, encounters all the privations, anxieties, and hardships necessarily attendant on a sea life? Why, who would ever think of asking such a question? The care of him forms no part of the system; his carcase is not insurable—for, suppose that by jetson or floatson his unfortunate body was rescued from the merciless ocean, what is its value? It is clear it could never form the subject of an average either general or particular. True, he may have done his duty faithfully in navigating the ship from the most distant quarter of the globe, and had been so employed for many months; was even within view of his long-looked-for port at the time of the shipwreck; and though, as before noticed, the ship-owner has secured his freight in full, and the merchant his merchandise, poor Jack's representatives by the present system are not entitled to a single farthing of his hard-earned wages. He is gone to render up his great account, and his family, benefiting nothing by his labours, are left to starve, so far as any claim they have on the owner of the ship is concerned in whose service he has lost his life. This is one solitary instance only of the many evils spreading over, and interwoven into, our whole vicious system of "marine insurance," as chiefly regulated by the gentlemen known by that mystical word "Lloyd's," whom, themselves an irresponsible body, have nevertheless contrived, like the old man who so unmercifully rode poor Sinbad the sailor, to get across not only the whole mercantile navy of Great Britain, but to exercise very considerable influence on that of other countries; and there they stick like an incubus, withering by their assumed power every effort made for the improvement of ship-building; for, as has again and again been proved, the very essence of underwriting is to encourage the use of weak and unsafe ships, rather than strong and safe ones. Hence their eagle-eyed scrutiny to find out and choke in the birth every attempt at improvement; hence the refusal of this self-constituted but powerful body to receive or examine any plan, however demonstrable, or however certain to lead to this desired end. To encourage such undertakings would never do, for all underwriters are fully aware that any system leading to the introduction of strength and safety into ship-building would be the forerunner of ruin to their craft, and, once accomplished, they might with truth exclaim, that as to their trade, "Othello's occupation's gone."

That "Lloyd's" has acquired this influence, and that other underwriters follow their leaders, those who have read the pages of the Nautical Magazine with attention, or otherwise informed them-

selves on the subject of marine insurance, cannot have failed to observe. How underwriters have acquired this power, the various means and extended ramifications by which they maintain and keep their herculean grasp, would be both laborious and dangerous accurately to describe. The machinery is so complicated indeed, that it would be a task infinitely less difficult to give a graphic explanation of the wheels within wheels that constituted the moving power of Ezekiel's vision, than to lay open and expose to public gaze that system which binds ship-builders to underwriters, and cements ship-owners to both, by that strong bond of union, self-interest. Let us see how the thing works. The first object is to get a cheap ship, giving heed to no other quality, only taking care to have it *well* insured—the more ships the owner loses at sea, well insured, including freight, the greater are his profits—the more trade has the builder in replacing them; frequent losses create high premiums, high premiums are the very heart's blood of an underwriter. Who then can be surprised that this worthy and united trio should bid defiance to all reform, and join in a hearty chorus of—Cheap ships for ever, hurrah! John Bull pays for all! bravo, bravo! never mind reform!

In making these remarks, I disclaim entirely, and in the strongest manner, their application to any particular underwriter. I have known among that class many gentlemen of the highest character and strictest integrity; my arguments are not directed to individuals, but to the system—that pernicious system which no individual can oppose with success, whatever may be the extent of his wealth, or the maturity of his wisdom; and which, if reformed at all, must be reformed by an act of the legislature, beginning at the right end, namely, taking effectual measures that ships are properly constructed, and commanded by qualified persons, responsible to some authority to whom they must render an account of the causes of a loss when one does occur; when it would appear whether the misfortune arose from the unworthiness of the ship—want of skill, or carelessness of the master—misbehaviour of the crew—or from natural and unavoidable circumstances.

This course is uniformly pursued in the Royal Navy, where insurance is not practised, and where few losses occur; because the ships are built on the combined principles of strength and safety, and where a strict inquiry is made into the causes of every shipwreck. Why then are the public not as well protected in the mercantile navy? Simply for the reasons before stated, that the growers of ships, and all those crafts that have their living out of them, thrive and fatten best by the work of their hands being short-lived; and while the present vicious system of underwriting is allowed legally to exist, it will continue to be so. Are merchant ships not national property, as well as ships of war? I lately read the advertisement of a marine insurance company recently con-

cocted in London, with a capital of one million. Several of the gentlemen advertised as directors of this concern are well schooled in all the mysteries of "Lloyd's;" and the prospectus holds out inducements for parties to make their insurances with them, which will afford even further facilities for keeping up the good old system. The first clause adopted in their policies on sailing vessels is to the following effect: "Upon taking the insurance, to admit the seaworthiness of the ship." This surely gives every facility that a ship-owner can require on this score—all that is necessary is to secure means of getting the ship insured—that done, all then "works well;" sink or swim, all's well for the owner.

Another clause provides, that "upon all British-built ships, the owner shall not be liable for one-third of the repairs until the vessel exceeds eighteen months old." Now, can there be a greater inducement than this to have short-lived ships? what encouragement for the manufacture of any thing that will float, and bear the outward appearance of a ship—does it not hold out as it were a premium for the construction of them on the most slender principles that will enable them to keep together? Can it then admit of a doubt, that a very large proportion of the wrecks and drownings at sea are clearly attributable to the abuse of marine insurance, as at present conducted—and is not a reform of the whole system absolutely necessary? Why then does the country remain in a state of apathy on this most momentous question to a maritime nation? I am aware that a committee was appointed last session of parliament to inquire into the state of British shipping, and the causes of the great increase of shipwrecks; and no doubt much useful information will be embodied in their report,* which I have not yet seen. But, to make any inquiry of this kind effectual, it must be supported by the public giving expression to their feelings and opinions on the subject, in that earnest way that cannot be resisted. That the remedy is both easy and practicable, we have only to look, as before noticed, at the Royal Navy, where no insurance being made, the ships are built on the principles of strength and safety; while mercantile ships, for "interest's sake," that powerful lever on the human mind when left unrestricted, are put together on principles precisely the reverse—those employed in their manufacture being fostered and encouraged so to do by the working of that pernicious system of insurance, which it has been my design to expose. Those who desire further information on the evils arising from the existence of this system, I would refer to an article published in No. 38 of the Westminster Review, entitled "Profits of the sinking system at sea," to the remarks of your able correspondents "Mercator," "Nearchus," "The Master of a British Merchant Ship;" and also to "Ballingall's Mercantile Navy,"

* Our correspondent will no doubt have already found it in our October number, page 588.

published by Morrison, London; where the subject is fully examined and exposed; and to articles in the Edinburgh Review and Metropolitan Magazine of November last.

Dublin, 8th Oct. 1836. SCRUTATOR.

A HARBOUR OF REFUGE AT LOWESTOFFE.

THE clear and able report of the Select Committee of the House of Commons, appointed during the last session of parliament for the purpose of inquiring into the *principal causes of the numerous shipwrecks*, and the best means of preventing them in future, must impress every one who considers the subject, with the feeling that it is indispensably necessary to revive the long dormant energies of this great maritime nation on a matter of such vast importance, and to induce the immediate adoption of such means as are within our power, to prevent or even to diminish the frequency and extent of evils, which occasion the annual destruction of millions of property, and a frightful loss of human life.

It is difficult indeed to account for the supineness of the British people on so momentous a subject; a supineness that is incompatible with our national character, inconsistent with our interests, and inimical to the precepts of Christianity itself: and in addition to the immediate affliction caused to the surviving relatives and dependents of our drowned sailors, who are thrown on the hands of the charitable for their very existence, the moral evils in the increase of crime, incident to poverty and the loss of their protectors, are too obvious to require a word of explanation. The sin of omission in our duty in this case is tantamount to the sin of commission; whether we deliberately cast our seamen one by one into the sea, or suffer them, by our obdurate, heartless, or sordid neglect of those means which we possess, to sacrifice their lives—the moral turpitude is much the same—in quality and in degree differing but shade.

The Shipwreck Committee in their report state, that "the want of harbours of refuge is one of the causes of the frequency of shipwrecks," and they named two stations in particular as eligible for their construction, viz. Redcar, on the Yorkshire coast, at the entrance of the river Tees, as one, and the bay between the Great and Little Orm's Head, on the Welsh coast, as the other. The *practicability* of these schemes, except at an enormous expense, and the utility of them if executed, are questioned by experienced nautical and scientific men, for it is indisputable that neither the margin of the great German Ocean on the Yorkshire coast, with a storm from the north round to the east and south, nor that of the Welsh coast at the Orms Head, with a gale from the west to the north-east, could be approached in a dark night,

except at the imminent hazard of immediate destruction to the vessels and their crew who would dare to make the attempt; so that such harbours would be unavailable at the time and under the circumstances when they would be most required. I venture an opinion, that the harbour of Beaumaris in the vicinity of the Orm's Heads might, at a comparatively small expense, be so improved, as to secure a safe entrance and a safe harbour at all times for ships of the largest class.

But leaving the consideration of those places, LOWESTOFFE NESS *is a situation preeminently calculated for a* HARBOUR OF REFUGE, where nature presents great facility for its construction, and on a coast where no risk or impediment would exist to a free ingress or egress, at all times of the tide, and during the most stormy and tempestuous weather. The importance of a harbour of safety at Lowestoffe cannot be questioned, when it is recollected that it is on a part of the coast where the annual loss of ships exceeds that of any other part of our island, amounting to about fifty vessels in the present year, and where large fleets of valuable ships, richly laden, trading to and from the northern ports, and from the Baltic, are often obliged to rendezvous in an open and dangerous roadstead, in adverse winds and stormy weather, surrounded by shoals and dangerous sands, there being no other anchorage, or safe and accessible harbour, between the Humber northward and Harwich southward, a distance of about 140 miles. The report of the committee as quoted in the Nautical Magazine states, that the loss of property by shipwreck of British vessels exceeds £2,000,000 annually, and the loss of human lives in the same period, 894, and that the annual loss of property from the *Tyne only* was about 68 vessels, of the aggregate value of £150,000, leaving many widows and orphans,

The total annual loss of property (£2,000,000) would be adequate to construct harbours of refuge on the various parts of the coasts of the united kingdom, so as to prevent a large number of shipwrecks that would otherwise occur, provided such harbours were judiciously selected, and economically executed.

This important subject some years ago engaged much attention, and an act of parliament was obtained for constructing a harbour at Lowestoffe, but from causes connected with the execution of the plans (and which causes were pointed out by evidence before the committee of the House of Commons) the scheme, as a harbour of refuge, *its ostensible object*, entirely and irretrievably failed.

An earnest solicitude for the preservation of so useful a class of men as our seamen, who are too often hurried to an untimely end by shipwreck, and altogether unprepared for that awful termination of their lives, induces me to hope that this important subject will be taken up as it should be, being confident that when it is in

masterly hands, the British public, who know that the bulwark of their country is the British seaman, will be ready to protect him in peace, whose protection they require and receive in war.

NAUTICUS.

HINTS OF A VOYAGER.

England to Alexandria.

THE best cargo to take to Alexandria is coals. If your vessel be small and *strong*, you may ship iron railway at Cardiff; but there is no accommodation at Cardiff for vessels of any burden above 150 tons, and I do not hesitate to attribute the loss of many vessels* to being left dry at low-water, with a cargo of iron straining their butts and wooden ends.

On the voyage out, if you have a chronometer, you may make the land about Cape Finisterre, and with north-easterly winds keep the coast in sight to Cape St. Vincent, and shape a course for Cape Spartel, as, in case of meeting a *levanter* or *siroc*, anchorage under the cape may be obtained. You should then shape a course for Cape de Gatte, but in the Mediterranean by no means should you make long tacks, never more than twenty-five miles either side of your direct track, as the winds are too variable to expect their continuance long enough to be benefited, and the currents are influenced by the direction of the land, as well as by the winds.

The port of Alexandria is spacious, and the approach bold by day, as the water is deep close to the reefs. The pacha's palace, Pompey's pillar, and the masts of the ships, are always visible before you approach danger. A stranger should attend to his lead, as his soundings are a *sure* guide.

If the day is waining, haul off—you do not lose time, and you make your vessel secure—for, should you obtain a pilot, (which is not likely, except in remarkably fine weather,) and get in, you will find that the custom-house, consul's office, and all other places, have long been closed, and the worthies either discussing wine or tobacco, mayhap brandy. Captains of merchant vessels should be cautious in signing charter-parties in England, as by neglecting that, their homeward-bound freight is charged a commission of two and a half per cent. by the merchant to whom their outward cargo is consigned, and deducted from the freightage, contrary to all law.

The improvements lately made render watering an easy job, but its free use is to be guarded against, as producing dysenteries,

* The Nymph dried at Cardiff, with her cargo in, sailed, and has not since been heard of. Her anchor was under her bottom, but when she floated, not making water, no danger was apprehended.

fluxes, &c.; it is however very soft, makes capital tea, and washes well. Meat is obtained in the market at very reasonable prices, such as 1½d. to 2½d. per lb.; and the mutton, though small, might rival some in Whitechapel for flavour. Pigeons and quails in season are plentiful and cheap; very excellent biscuit is manufactured, rather dearer than English, but it is not good for long voyages. Vegetables, barring potatoes, are plentiful, varied, and cheap. Geese are cheap, but fowls are small and dear. The rate of passage money is from £20 to £30, according to the time of year and bill of health.

A passenger, upon his arrival at Milford, by immediate application before the hatches are opened, can be put in a lazaret, (should one be to spare,) and have from twenty-five to thirty days' quarantine; whereas, should he remain in the vessel, he will not commence his quarantine until the cargo is clear, occupying, with airings, and transporting from moorings to hulk, sometimes ten or fifteen days.

There are only two decent inns at Alexandria, one kept by an Englishwoman, the widow of an officer killed in the pacha's service at the siege of Acre by the explosion of a rocket-boat. The charges are very high, but some think they are recompensed for their money by the situation of the house, which is about three-quarters of a mile from the town. The other is the Aquila d'Ovo, kept by an Italian, who speaks French and English, is very civil, and not so exorbitant in charging. Billiard-tables and coffee-houses abound, from the first-rate down to those of the miserable and squalid Maltese, gambling and quarrelling for grains.* I would advise all vessels to carry a sufficiency of salt provisions for their voyage home; and they will find a cask, too, much better than having to purchase, as good English mess-beef fetches a high price.

When you leave Alexandria, work up to Candia; the average summer passage to Malta is twenty-two to thirty days; in winter, from eighteen to twenty-five; but the vessels that have pursued the above-mentioned track have had the shortest voyages. To the southward of the islands of Lampedusa, a current of one mile per hour, S.W. by S. (compass) was found by trial in a calm evening. The variation in the general charts I found tolerably correct.

The directions for entering either of the harbours are too accurately described to need any enlargement from me; suffice to say, vessels of burden and steamers, on account of their length, are permitted to perform their quarantine in La Valletta. I should recommend vessels to pass the Esquerques by Maritimo, as in a fleet of seven vessels, those which came by Cape Bon lost, some two, some three days' time, from being embayed when the wind changed to N.E., previous to its blowing a levanter (or east.)

Should the wind be contrary, make Sardinia, then work along

* A grain is half a farthing.

the African shore to Algiers, then keep the Spanish shore until you sight the rock: with a westerly wind, you may anchor behind the rock, and save your dues, which in quarantine are considerable—eleven dollars for anchoring, and expenses for guard-boats, &c. When leaving Tarifa, Cape St. Vincent ought to be made; but caution is necessary, especially by night, as I was informed by the captain of a brig* that he saw the sea breaking over the Dedalus; its appearance was like a half-tide rock, and its situation, by his dead-reckoning, where pointed out in the general charts. From Cape St. Vincent, should the wind be north-easterly or northerly, stretch to the westward. The vessel I was in reached 23° W., and was in port sooner than those which kept closer *in-shore*.

Your whole voyage to Milford is from fifty to eighty days; but, two days after passing Gibraltar, we fell in with a schooner that had been forty-two days from Alicata to that port; and I much fear her voyage is not "well ended," as I have not seen her since. Her name is Shelldrake, of Dartmouth. She was deep with sulphur, had been run foul of by an American ship on her way out of Gibraltar bay, which broke her main boom, carried away her bowsprit, head, and started her wooden-ends.

I have been brief; but, should these remarks be deemed serviceable, I shall be happy at a future period to enlarge.

London. W. S.

SCARBOROUGH AGAIN.

SIR,—It is gratifying to observe how ably your correspondent,† "A British Seaman," has exposed the pretensions of Scarborough as a harbour of refuge; and it is at the same time painful to discover such a false statement as he has shewn in the report of the Harbour of Refuge Committee. For my part, I wish them well over it. But, by way of shewing your readers the kind of document which Mr. Hill handed to the committee, and in which *they confided*, I send you herewith an extract or two from Lloyd's lists, of the same date as Mr Hill's "return." In this you will find proof of the difficulty of entering Scarborough, from rocks, &c., by vessels which do not appear in the "correct return" of Mr. Hill.

Extracts from Lloyd's Lists, March 30, 1821:—The sloop *Newbeggin*, Hammond, from Sunderland, in entering Scarborough on Wednesday, ran against the inner pier, and carried away her bowsprit, and broke her anchor.—June 5th, the *Jean*, Williamson, of Sunderland, ran upon a *rock* in *turning out* of this harbour on the 21st May, and it was with great difficulty she was got off again, and brought into this port with considerable damage.—Nov. 6th. (Scarborough, Nov. 4th) This morning, between nine and ten o'clock, it came on a tremendous gale of wind at N.N.E. accompanied with rain, and continued increasing till noon. Several ships, both light and loaded, were passing at the

* The Astrea, Belfast, Captain Neate. † See No. 56, p. 602.

time the gale took them. The *Providence*, Greives, of South Shields, and *Caledonia*, of Boston, tried for the harbour, but could not get in; they are on the beach half a mile south of this. A sloop, supposed to be the *Hope*, Lovet, of Wisbeach, by a boat which has come on shore, has foundered, with all the crew half a mile south of the Spa house. A *schooner* was trying also to make the harbour, when a tremendous sea struck her, and laid her on her broadside, and she disappeared immediately. I fear you will have a dreadful account from the north, the gale coming on so suddenly.—Nov. 9. (Scarborough, 5th Nov.) The *Collingwood*, of Rye, Moeraith, bound to the north, was lost during the late gale two miles southward of this place: came on shore yesterday. The *Bucephalus*, Goddes, from London, and the *Eagle*, of and from ditto, both in ballast: the crews are saved by the life-boat, and the vessels are expected to be got off the beach. N.B. No mention is made in Lloyd's Lists of No. 1, the *Good Intent*, and No. 3, the *Swallow*.

Scarborough, Oct. 12th, 1824.—Yesterday it blew a dreadful gale from south-east, with heavy rain, and a tremendous sea; the following vessels were driven on shore near this place: the *Prospect*, Edmonds, of this port, with trifling damage; crew saved. The *Hebe*, (No. 30,) Leckley, of Sunderland; crew saved by life-boat. The *Mercury*, Mackenzie, of this port; totally lost, crew saved. The *Friends*, (No. 34,) of Yarmouth; crew saved. The *Argo*, (No. 40,) Pattison, of Rochester; totally lost, with all the crew. The *Hanbury*, Feaster, of this port, and it is feared will be totally lost; crew saved. *Hope*, (No. 39,) of Sunderland, Davison; crew saved. Several others, names unknown, are also on shore.—13th Oct. The *Harmony*, Voch, is on shore near the Spa. The *Louisa*, (No. 31,) Kayper, from Husum to Grimsby; and the *Tay*, (No. 33,) of and from Dundee for London; sunk. A Dutch vessel, name unknown, totally wrecked on Cayla Sand, three miles south of this place; crew drowned. 14th Oct. *Unity*, of Rye, brought in last night; the *Jane*, of Sunderland, this morning; both dismasted. The foreign vessel appears to be the *Anna-Maria Lawson*, from Husum, from papers found on the master, who has been washed on shore.

The numbers which I have placed against some of the vessels are those against them in the return by Mr. Hill, of vessels placed under his care in Scarborough harbour. How is it these proofs of the inutility of Scarborough were not brought forward by the Committee?

ÆOLUS.

SUGGESTION FOR STRENGTHENING STEAM-VESSELS.

To the Editor of the Nautical Magazine.

Oct. 24th, 1836.

SIR,—Should you think the following suggestions worthy a place in the pages of your valuable magazine, I should feel obliged by their insertion.

Every person who has read or heard of the lamentable accident of that fine steamer, the Red Rover, must feel desirous that a similar calamity may in future be avoided; but the present, and the still increasing, state of our steam-navigation on the Thames, do not augur favourably for such avoidance. Steam-vessels must at all times be more liable to collision than others, from their con-

stant running, and their great velocity; and it is indeed painful to think of so many human lives being put in jeopardy by such frequent accidents. If therefore collision cannot at all times be obviated—foundering in many instances might be, by the following simple means.

I would suggest that in future those steam-vessels intended for constant plying on the Thames, should at the time of their building, and while in frame, have a bulk-head of stout planking, say three, or three inches and a half thick, placed by means of a groove wrought in their frame timbers, from side to side, (allowing a little more siding and moulded breadth for such timbers,) and such bulk-head placed as many feet abaft the stem as the fore-cabin would possibly admit of, and to be properly secured and caulked, so as to be water-tight. Another might be built up at the fore-part of the engine-room in the same manner—the little inconvenience of not having direct communication by means of doors through that part of the vessel, could be compensated by extra hatchways, or skettles on deck: such bulk-heads might in small vessels serve instead of beams, and fastened to the side by iron knees, &c., and would no doubt add to their strength.

It is a well-known fact to most nautical men, that in general vessels come in contact with each other at the fore-part—not one collision out of a hundred occurs abaft the beam, particularly with steam-vessels, which always meet rapidly. It is obvious, if the Red Rover had been built with such bulk-heads, or substantial partitions, she would in all probability not have sunk. It is really frightful to contemplate, that the Magnet steamer might have shared the same fate; and both vessels in this instance received their damages before the paddle-boxes. I need say no more, to intrude on your useful pages; the preventive is simple and easy.

I am, &c. A. B. Mile End.

A Subscriber to your Magazine.

Naval Chronicle.

EXPERIMENTAL SQUADRON:—In the trials of sailing which have lately taken place between the Pique and the Inconstant, the superiority of the former vessel, constructed by Sir William Symonds, has been completely established. The Pique not only weathers on the Inconstant, but outsails her. The Vanguard, which was also present at the trials, proved herself superior to both of the frigates in bad weather, when the sea was up, by leaving them far to leeward.

AMERICAN SCIENTIFIC EXPEDITION TO THE PACIFIC.—We understand that the government of the United States is about to dispatch

a surveying expedition into the Pacific Ocean, which in point of magnitude, and the liberal scale on which it has been projected, bids fair to surpass any that have gone before it to any other part of the world. The vessels composing it will consist of the U.S. frigate Macedonian, two new brigs of 250 tons, a schooner of 130 tons, and a storeship, built and fitted for the express purpose; all of which, it is stated, will be under the immediate command of Capt. Jones, an officer of the United States' navy, who has already visited most parts of the Pacific. The principal object of the voyage will be to examine and survey the numerous reefs and islands of that great ocean lying within and near the tropics, many of them yet remaining, not only unexplored, but in some cases not even laid down on the charts. It is thus expected, from the very complete manner in which operations will be carried on, that a chart of any particular portion of the Pacific will contain every reef and island, and its approaching soundings, that should appear in it, a quality which the present charts by no means possess. It is intended, we believe, if favourable opportunities should offer during the voyage, to extend discovery towards the south-pole, and, if possible, to gain some knowledge of the regions within the Antarctic circle. A large sum has been appropriated by the American government for the equipment of this expedition, and the best constructed instruments which British, French, and German artists can produce, have been supplied. The internal arrangements of the Macedonian have been so altered in rebuilding her, as to afford ample accommodation for the several persons who will fill the various departments of science, and whose attention will be exclusively devoted to the subjects entrusted to them. The storeship will be employed to carry provisions to serve the whole expedition, and will convey them to the various rendezvous as determined on; she will also occasionally assist in the duties appertaining to the expedition.' All the vessels are new, and every attention will be paid to their full and efficient equipment.

H.M.S. Sapphire.—We understand that the sailing qualities of the Sapphire have been put to the test by a schooner constructed by Mr. Bally of Shoreham, and that, when turning to windward for Corfu, in August last, she was beaten by her competitor, the Saucy Jack, a distance of four miles in one and twenty. It appears that the Saucy Jack has good reasons to boast of her laurels, the Sapphire being considered by no means a bad sailor, having previously beaten the American squadron. We congratulate Mr. Bally, her builder, on his success, as such feats as these must obtain him celebrity.

Sir John Barrow, at the last meeting of the Geographical Society, stated, that intelligence of Capt. Back had been received

at the Admiralty. That gallant sailor was seen on the 1st of August in Hudson's Straits, lat. 62. long. 71. The ice was represented as being very thick upon the coast; but we know, if skill and perseverance can conquer the obstacles of climate, Capt. Back is the man to overcome them. We may, for memory's sake, repeat, that he is in command of H.M.S. Terror, and directed to proceed with her to Wager River, on the western shore of Sir Thomas Roe's Welcome. He is there to ascertain the most convenient place for transporting boats and stores across the intervening isthmus; and, having placed his ship in security, he is to proceed, with the resources thus placed at his command, both north and west along the shores of Regent's Inlet,—to connect the point whence he will thus start both with Hecla and Fury Strait, and Point Turnagain.—*Literary Gazette.* [See page 435, No. 53, for a full notice of this Expedition.]

Steam Navigation to India:—The Kyle takes home 1,539 additional signatures to declarations in favour of the steam petition, from 27 places in the Mofussil, making in all 4,090 signatures, from 83 places, from which 2,823 are the signatures of Europeans, and 1,267 of natives. Adding these to the names on the petition, we have a total number of 7,632; a pretty good testimony of the general feeling on this side of India. *Calcutta Paper*, June 10.—[The overland conveyance that left England June 1, arrived at Bombay about July 16, or in somewhere about 45 days; and the Parkfield, which left Bombay July 28, has brought home answers to the letters forwarded hence June 1. After such expedition, have not the merchants and others the right to learn from the East India Company whether it will in any way sanction the New Bengal Steam Company, or whether it will supersede its necessity by measures of its own?]—*Times.*

His Majesty's Sloop Beagle, Captain Fitzroy, has arrived, and is now lying paid off at Woolwich. The Beagle sailed from England in 1831, for the purpose of surveying the coasts of South America; on which service she has been employed since that time, and on her way home has performed the circuit of the globe. She has successively visited the Galapagos, Tahiti, Tongataboo, New Zealand, Sydney, King George's Sound, Keeling Island, Mauritius, Cape of Good Hope, and other points in the Atlantic, between which she has measured meridian distances. In the course of her voyage, observations of the most valuable and interesting kind have been made, and additions afforded to our knowledge of the natural history of the places she has visited, by Mr. Charles Darwin, which will ever reflect the greatest credit on him, and on Captain Fitzroy who conducted the voyage.

AMERICAN NAVY.—The following statement of the vessels building at the different navy yards of the United States, is extracted from the report of the secretary of the navy, in January last. "Those building under the laws for the gradual increase of the navy are as follows. PORTSMOUTH, N. H., one ship of the line, one frigate. At CHARLESTOWN, Massachusetts, two ships of the line, one frigate. At BROOKLYN, N. Y., two frigates, one steam-vessel. At PHILADELPHIA, one ship of the line, one frigate. At WASHINGTON, one frigate. At GOSPORT, one ship of the line, one frigate." All these vessels are under cover, and generally in good order, with the exception of their keels, keelsons, and dead-woods, of which some have been found defective.

There is building at Norfolk a frigate, under the authority of the act of congress of July 10, 1832, to replace the Macedonian. She has a roof over her, and is in a perfect state of preservation.

THE DEW POINT.—The following mode of obtaining this important observation may not be known by some of our meteorologists, who may perhaps give it up as soon as their stock of æther, supplied with Daniell's instrument, is exhausted. To them it will be particularly useful. A very simple and accurate method of taking the "dew point," is to use a thin tumbler of tin, kept very bright and clean on the outside; and in the summer cold water; in the winter snow or ice, and, if necessary, salt mingled with water, (or, when these are not at hand, a mixture of muriate of ammonia and nitrate of potash, in equal quantities, pounded very fine,) put into the tumbler with water. By any of these means a temperature may soon be obtained below the "dew point." When dew settles on the tumbler, it must be carefully wiped off, very dry, and the fluid within stirred with a thermometer; and this must be repeated until the fluid is gradually heated up by the air, so that the moisture ceases to settle; the highest temperature at which it will settle is the "*Dew point.*"

For observations of the dew point to be of any value, however, they must be made constantly every day, at least once a day.

THAMES HAVEN DOCKS AND RAILWAY.—Of the various designs now going forward in the way of harbours and railways, we look on that of Thames Haven as one which is likely not only to turn out profitable as a private adventure, but, independent of the advantages which it will afford in the saving of time. to secure also the saving of life. We hear almost every day of accidents which take place, attended with loss of life, all arising from the crowded state of the river Thames: it is well known, that so numerous are the vessels on our river, that it is with difficulty a passage can be found between them, and the loss of life arising from boats being continually run down, which not all the laws for

regulating the river navigation can prevent, is really painful to contemplate, in addition to which a sacrifice of time is always inevitable. If it were only on account of its obviating these evils, the Thames Haven Railway has well-founded claims for support, and it is in this light that in our nautical capacity we take on ourselves to allude to it. Our readers are no doubt already aware, that an act of parliament has been obtained to construct docks on a magnificent scale for the reception of shipping and goods at Thames Haven, at the entrance of the river, nearly opposite Shell-haven, and that from thence a line of railroad will lead to the metropolis near Aldgate. Thus passengers arriving from various parts of the coast will land at Thames Haven, and in a few minutes reach their destination, without being obliged to undergo three or four hours of circuitous navigation in a crowded river, at the risk, which is too frequently realized, of the destruction of human life. The establishment of this railway, while it secures this ready transit to the metropolis, will have the effect of gradually clearing the river from all its superfluous incumbrances; the tribes of colliers and many other vessels, which now disfigure the river and interrupt its navigation, will eventually find berths at the entrance, leaving the interior to the free passage of the vessels belonging to the different towns on its banks. This will be a national benefit; and while this is in progress, the public will also benefit by the means through which it is effected. On these accounts every one must desire to see this undertaking prosper; for our own part, we look on it as one of the most useful and important projects of the day, and on entirely disinterested grounds shall rejoice to see it completed.

ADMIRALTY COURT, Monday, Nov. 14.

The Prince George—Wages.

Sir John Nicholl decided in this case, (which was a claim for wages by the purser,) that the party was entitled to recover his wages by summary petition in this court as a mariner, though the rate was not specified in the articles. The learned judge intimated his opinion to that effect on the last court-day, when the case was argued, and he now admitted the summary petition, and expressed his hopes that the wages of the claimant would be paid at once, without further litigation.

The Sussex—Salvage.

This case was opened last court-day. It was an action by the master and owner, and the crew of the bark Ariel, a South Sea whaler, for a remuneration for salvage service rendered to the brig Sussex, of 211 tons, from Odessa to London, laden with wool, linseed, tallow, staves, &c. She sailed on the 1st of March, and on the 22d she arrived off Lisbon, when the weather began to be tempestuous. By the 27th it blew a perfect hurricane from the

west, the sea running tremendously high. Next day, a heavy sea carried away the masts and yards, and swept the deck, and the second mate and an apprentice were washed over; this was in the Bay of Biscay. After being 24 hours in this state, the Ariel came in sight, a vessel belonging to Southampton, fitted out for a whaling voyage to the South Seas, which had, after leaving Cowes, encountered the gale on the 27th in the Bay of Biscay, and suffered so much damage, that the master determined to put into some port to repair, when they perceived the Sussex, which made a signal of distress. The second mate of the Ariel, and four of the crew, made an effort to board the brig, at an imminent hazard, and Pugh sprung into her. Hawsers were got on board the brig, and the bark took her in tow, and conducted her safely to the Motherbank on the 2d of April. In the course of the early operations, Pugh was washed (or fell) overboard, and it was admitted that it was a perilous service. The value of the ship and cargo was £10,500.

The King's Advocate, (with whom was Dr. Nicholl,) for the salvors, observed, that it was the policy of the court to hold out a liberal encouragement to salvors, who naturally expected a remuneration; and there was no more reason for imputing interested motives to these salvors than any other. The situation of the brig, at the time the Ariel came up, was almost desperate. The crew had apparently made preparations for abandoning her, and the master said (though he now denied it) that it seemed as if a merciful Providence had sent them to save their lives. The crews of whalers were generally more hardy and adventurous than those of other vessels; and the service had been a most important one, rendered to a valuable ship in imminent peril, at the risk of life and with great skill; he hardly recollected a case in which the services rendered by the salvors were paralleled.

Dr. Addams, (with whom was Dr. Haggard,) for the owners of the Sussex, did not contend that the salvors were not entitled to a salvage, and a handsome salvage; but the question was one of amount in the first instance, and of improper conduct on the part of the salvors in the second. If the salvors had stated their case without exaggeration, and had been guilty of no improper conduct afterwards, he would not have stood up to oppose their claims. The learned advocate then proceeded to show, that the services had been ridiculously exaggerated in the statement of the salvors; and then he animadverted on their conduct when they got the vessel to Cowes, detaining her there, getting a commission of appraisement, which was wholly unnecessary, and entering their action at £8000, valuing her at £15000, and setting up a claim of a moiety, besides expenses. He contended that the process of the court had been abused by the salvors, to the injury of the owners of the ship and cargo.

Sir J. Nicholl said, that the services rendered in this case had been of considerable benefit to the owners of the ship and cargo. There were two striking features in this case: first the extreme danger of the property; secondly, the risk and peril incurred by the party claiming the reward. After reading the affidavits on both sides, and pointing out the admissions on the part of the owners, of the distressed situation of the Sussex on the 28th of March, which, he observed, exposed the property to great peril, and salvors had to encounter, divesting the affidavits of the colouring in which they had been dressed up, and looking to the facts—that the vessel was in a dismasted state during a hnrricane in the Bay of Biscay, with the danger of a lee-shore, and had no means of erecting a jury-rigging, except by stretching a bit of a sail on the hold-ladder, and that the salvors towed her safely to the Motherbank—it was hardly possible to suppose that the property would not have been totaly lost but for the assistance rendered by the Ariel. But there the merit of the salvors ended, if their demerit did not begin before. He could not but think, from their own showing, that they had made an exorbitant demand, and had required excessive bail. There was no pretence for considering the vessel a derelict, for she had not been abandoned; and even in cases of derelict, where the owners appeared, there was no instance in which this court had given more than a moiety. Taking the value of the ship and cargo at £10,500, he thought he could not give less than £2,000, which was about one-fifth, with costs; not, however, including the costs incurred at the out-port, in respect to the commission of appraisement.

Euphrates Expedition.

The following most recent accounts of this interesting expedition is from the Literary Gazette. In laying it before our readers, it is with pain we are obliged to add, that Colonel Chesney has been deprived of one of his most valuable and amiable officers in Lieut. Murphy, R.E., who was carried off by fever at Bussorah.

Grain Coast of Arabia, Persian Gulf, July 27th, 1836.

My dear ——. — The last place that I had the pleasure of addressing you from was Annah, the most graceful city on the Euphrates, but which then derived a melancholy interest from the recent loss of the Tigris. I had the misfortune to be left behind at the departure of the steamer, and, being without arms, was robbed and maltreated before "I caught her up." There are many powerful and opulent tribes on the river below Annah; sometimes they occupy date-clad islands in the centre of the river, as at Hadiva; at others, they castellate the islands, and occupy the river-banks, as at Jibba. It was a new and unexpected occur-

rence, to find the chieftains of these respectable clans coming forward on every side to seek the protection of our commander. The very castles which had sneered at the ill-fated author of the "Misopogon" [?], seemed to be weary of anarchy; the industrious classes feel the evil effects of a state of perpetual warfare, for not a harvest of corn or dates is reaped, without the desert-rovers coming down to help themselves. They felt at the same time the inefficiency of their own government, and they are willing and anxious to seek a *protection* which gives promise of greater activity, greater means, and a real desire to *protect*. Believe me, that those who, using the word Arab in its utmost latitude, assert that there is no confidence to be placed in them, are very wrong with regard to the sober, industrious, and high-spirited tribes who shelter themselves beneath the date-groves of the Euphrates.

From Feluga (the resident at Bagdad not having made his appearance) a party went to that city, and returned across the plains of Babylon, to join the vessel at Hillah.

Fanaticism, accidentally aroused by a mistake of the moment, had nearly armed our friends and allies against us in this last populous town. Our situation was for a few minutes one of great anxiety. Happily the bridge of boats which here crosses the river had been unstrung, and, at the first alarm, the steam being up, we took our station in the middle of the river, thus commanding both wings of the town, and at the same time carrying on a parley which terminated in a perfect understanding, and the renewal of confidence. Our superior armament and means would have caused a destruction, in such an undisciplined crowd, which gives humanity reason to rejoice at the happy termination of this and other occasional minor misunderstandings.

In the Lemloon we met with thieves upon a small scale, and ingenious thieves too. I regret that I have neither time nor space to relate some of their exploits, and the watchful night-work which they gave us. But we met with difficulties of a more formidable nature in the character of the river, which did not, as had been prematurely asserted, lose itself in innumerable branches, for there never was a difficulty about the channel; but this became so narrow and so tortuous, with very low banks, that our paddles, not being protected, were often in danger, and with them our machinery.

The Euphrates is a large boat, admirably adapted for most parts of the river; but there appears to be some doubt as to ascending this winding fragment against the current. A smaller steamer would do it with facility.

We had an unfortunate rencontre with the natives not far below the marshes, where a quarrel occurred on the occasion of cutting wood; and the Arabs, having no chief to counsel them, and being exceedingly barbarous, would hear no reason, but commenced

firing on the vessel. I was at the time enjoying a wolf's hunt on the plain, and on my return was covered by a discharge of rockets thrown over the village. This, however, did no good; for, on sending another mission to them, "we had fired at them," they said, "and done no harm;" and they recommenced their war-dance. At this time the musketry was popping at us from both sides of the river, and, at length, we ascended a little, and returned their fire for about two minutes, there is reason to hope, without any injury being done, although it is surmised that some of them fell victims to their savage obstinacy.

From hence we visited Sugh el Suli, the capital of the numerous and wealthy tribe of Montafidque. Here, as at other places, goods brought for experiment sold uniformly at cent per cent, and the demand was unlimited.

I need scarcely mention, that from the marshes to the *emboucheur* of the river, it is a most magnificent and noble stream, of great depth, and without any impediment to steam navigation. We arrived at Bussora on June 19th, when our commander's loyalty manifested itself in the discharge of a number of guns, corresponding to the number of sere winters which had crowned the career of the friend to our labour, and the monarch of our country.

On our arrival here, the impossibility which there would have been to have put together the boat at the bottom of the river, as was advocated by some, in opposition to the practical knowledge of Colonel Chesney, was completely demonstrated. There was not a plank or a rope to be obtained, and we had no resource but to cross the head of the gulf to Bushire. Little was the steamer expected there, and her appearance caused a degree of surprise and conjecture, which was only overcome as we were entering into the very heart of the noble harbour. The tardy ensign of the residency of the ships belonging to the Honourable East India Company was at length hoisted, the Amherst's yards were manned, and a warm-hearted cheer welcomed our arrival among our countrymen.

Our situation here, at the present moment, is not at all an agreeable one, independently of the lukewarmness which has been shewn in supporting the enterprise after its first delay at home. Although, by the colonel's excellent arrangement, we have already received one mail *via* Aleppo and Bussora, and not, as usual, at Bagdad, the steamer was several days at Bushire before the time appointed to receive a mail from Bombay: none has yet made its appearance; and, in the mean time, the river is rapidly attaining its lowest level, against which the larger steamer was never calculated to work her way. The commander has come over here, to secure the transport of despatches, and the keeping that line of road open; so that no delay, occasioned by the

unpleasant position under which we are now placed, can ensue in the upper part of the river.

At all events, it is probable that we shall not have time to try the ascent; and, if not, shall proceed to do whatever can be done for the Tigris' wreck, which, you will be glad to hear, has been found with the retiring waters; and, as far as we can learn, in a tolerable state of preservation. We have at the present moment an officer upon the spot, which alone relieves the anxiety of every one to be there as soon as possible.

I have further the pleasing intelligence to convey of a constancy of excellent health among both officers and crew since we have been on the river. I have myself been on an agreeable trip to Shirez and Persepolis, and we are all only waiting for a little more promptness and activity in support from those quarters which ought to feel a national pride in our success; as there now will certainly be disgrace in our abandoning so great an undertaking, when, to our own knowledge, there are nations in the north who look with an ill-concealed jealousy, and a little secret spitefulness, on the bright prospects held out to Great Britain by the opening of this noble river, and gigantic line of communication.

Bussora, 9th September.—The latest accounts *via* Smyrna state that the lowness of water in the river prevented our expedition from proceeding to Bir, and that Colonel Chesney was waiting for the rising of the flood.

THE INDUSTRY.—Three men, named Hibbill, Harris, and Smith, were found guilty at Sydney of the murder of Captain Bragg, of the schooner Industry, by throwing him overboard when that vessel was about 300 miles to the westward of Hokianga, in New Zealand. They underwent the extreme penalty of the law on the 12th of February.

SALE OF A SLAVE SHIP.—On the 14th ult., the Captain's Room at Lloyd's was crowded with ship-owners, masters, and others, to witness the sale of a captured slave-vessel, the last which can be exposed to public sale within any part of the British dominions, all such vessels, by a recent act of parliament, being in future to be broken up, and not sold. The vessel sold was the coppered brig Cazador, condemned to his Majesty by the Vice-Admiralty Court at Gibraltar, as forfeited for a breach of the laws for the prevention of the slave-trade, and is now entitled to a British register in consequence. By a letter received from Sierra Leone, dated the 17th July, it appears that there are twenty-four empty vessels, fitted as slavers, lying there, which have been detained during the past seven months by the squadron on that station. The Gazita schooner, captured by the Pylades, had been condemned, hauled up, cut into two parts, and afterwards sold for £132.—*Southampton Advertiser.*

SALE OF SHIPS.—On Sept. 1st., at two o'clock, pursuant to an order issued from the Admiralty, a squadron of superannuated ships of the line, frigates, and other government vessels, were put up for sale by Dutch auction, in the hall of the Admiralty-office, Somerset-Place. Sir Thomas Troubridge and Lord Dalmeney were the Commissioners superintending the sale. A number of eminent shipowners and builders connected with the port of London, and also from Chatham, Portsmouth, Plymouth, Liverpool, &c. were in attendance. The ships and vessels sold were the following:—

	Guns.	Tons.	Lying at	Sold for
Scarborough	74	1,745	Deptford	£6,220
Surly, lighter	—	137	Chatham	No bidder
Greenwich	74	1,754	Portsmouth	5,310
Salisbury	58	1,199	Portsmouth	No bidder
Swallow, packet brig		236	Plymouth	1,000
Zephyr, packet brig		228	Plymouth	640
Experiment	44	892	Liverpool	1,400
Santa Margarita	36	993	Liverpool	1,710

Purchasers of king's ships are not allowed to refit any vessel larger than a sloop—all others must be broken up; nor is the agent of a foreign state allowed to purchase them.

ABSENCE WITHOUT LEAVE.—A midshipman of a frigate in which the author had served, was in the constant habit of indulging in this Gallic liberty. The First Lieutenant, aware of his freaks, for four or five successive nights permitted him unmolested to follow his "fling." The nocturnal roamer would return on board about six in the morning, entering one of the bridle ports on the main-deck. The first lieutenant was something of a wag, and had planned for the fearless offender a punishment which the latter was little prepared to expect. At an early hour in the morning, the midshipmen were summoned on deck—Watch, or no watch, all were required to appear on the King's Parade. The master-at-arms, the corporal of marines, together with nine rank and file, regularly accoutred with cross belts, and armed with drawn bayonets, had been previously planted in line in the immediate vicinity of the cook's coppers. As usual, boarding on the bow, and entering the "bridle," attired in top-boots and his shore-going suit, the new actor was not a little surprised to find, drawn up in full array, a guard of honour ready to receive him in the galley.

In accordance with his private instructions, the master-at-arms proceeded to tap the defaulter on the shoulder, intimating to him that he was already his prisoner, and requiring him forthwith to "fall in" in the line for military escort. "Right-about face! march!" cried the commander of the "party," parading his prisoner twice around the main-deck, gangways, forecastle, and quarter-deck, in the presence of a numerous assemblage of boys, blue-jackets, marines, mates, and midshipmen, bursting their sides with suppressed laughter at this ludicrous scene. As soon as his second turn had been completed around the different decks, he was halted in front of the first lieutenant, who, with the greatest gravity, directed the cast-down criminal to "proceed forthwith to the fore-top-mast head, and to keep a good look-out that no boats *boarded on the bow.*" It is needless to add, that, though an *old* practice, the "new act" was never repeated.—*Captain Glasscock's Naval Officer's Guide.*

Records of Wrecks.

THE MARYS.—The Marys, Tucker, left this port for St. Petersburgh, with a valuable cargo of bale goods, on Wednesday noon. Early on Thursday morning she was run down at sea by a large ship, which bore away, and never offered to render any assistance. One man had both his legs broken in the concussion. The crew had just time to get into their boat to save their lives. The captain and crew have since arrived here. The ship which ran her down is supposed to be an Archangel vessel, of about 700 tons burden. After the disaster, the crew remained 13 hours in the boat, when they were picked up by the Aurora, and put on board the Fairy, bound to this port. The poor sufferer was removed to the infirmary, where he expired on Monday. The vessel which was the cause of this lamentable event has since arrived at this port. The amount for which the cargo was insured is upwards of £70,000. This is one of the most expensive losses experienced for many years.—*Hull Paper.*

THE PLYWELL.—On Friday noon (28 Oct.) the Active, Dalrymple, and Plywell, Gibson, Dumfries traders, left that port for Whitehaven, and were overtaken by the storm of the same night. After contending with the gale for some time, the Active ran for this port, which she reached in safety. The Plywell was less fortunate. The last time Captain Dalrymple saw her was at sunset; she was then standing to windward, evidently with a view of keeping off until the tide would permit of her entering the harbour, and nothing more was heard or seen of her until next morning, when parts of her wreck and cargo were seen floating off the mouth of this port. It was soon ascertained that the ill-fated trader had been driven on shore between Parton and Harrington, abreast of Mickleham Pit, one of the most rugged places along the whole coast, that the captain and crew had perished, and the vessel had become a complete wreck. The bodies of two of her crew, a man and boy, were found near the place where she had struck. The body of Captain Gibson has not yet been cast up, nor can it be correctly ascertained whether there were any more than three persons on board or not.

SUPERINTENDANTS OF EMIGRANT SHIPS.

Dublin, Oct., 1836.

To the Editor of the Nautical Magazine.

SIR.—A correspondent in last month's Nautical, p. 570, asks, "Is there no naval officer superintending emigrant ships at Cork? or is it 'justice to Ireland' to leave the Irish at full liberty to be drowned in emigrant ships at pleasure?" Will any of your correspondents be so good as to inform me whether government agents for emigration have instructions and authority to look into the condition of vessels about to carry emigrants, and to reject

such as are unsafe? The wrecks and founderings of such vessels, and drowning the unhappy emigrants, together with the crews of the vessels, by wholesale, which has been in practice for some years past, more particularly in 1834, (when I think about seventeen such cases occurred,) proves, that, if they have such instructions, they have most grossly and shamefully neglected their duty. On the other hand, if they have not such instructions and authority, in the name of reason and common sense what are they appointed for? Taking a bond from a shipowner to the extent of a thousand pounds, that a vessel about to convey emigrants is seaworthy, which, I am informed, is the practice, and which fact of sea-worthiness is to be proved, or rather *disproved*, after the vessel is at the bottom of the ocean, is such a libel on common sense, and is made the means of such infamous frauds, attended with the drowning of hundreds of human beings, for the purpose of making money, that were it not verified by facts, and in daily practice, no person possessed of reason could be brought to believe that such practices could be tolerated. Do then the emigration agents neglect their duty, or have they no authority to look into the condition of vessels? and does the law tolerate the law of God being set at open, daring, and insulting defiance, when money is to be made, by sinking *over*-insured ships, loaded with human beings, in the sea? An answer will oblige your obedient servant,

A PROSPECTIVE EMIGRANT.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS: *Captain*, W. P. Hamilton; *Commander*, J. E. Parlby; *Lieutenants*, Lord W. Russell, Reid.

APPOINTMENTS: BEACON, Sur. Ves.: *Mid.* W. Walker.—BLAZER, St.V.: *Lieut.* J. M. Waugh.—BRITANNIA, 120: *Mate*, F. S. Murray.—CONWAY, 28: *Surg.* W. Ekin, M.D.; *Col. Mids.*, C. T. Glyn, R. R. Quin, H. F. Elliott, J. E. Parish, C.R. Read; *Clerk*, J. A. Haile.—CLIO, 16: *Lieut.* W. Reid.—COAST GUARD: *Lieut.* F. J. F. Henslow to Burling Gap as chief officer; *Lieut.* J. Stuart, Tower, 27, Dymechurch; *Lieut.* J. S. Hall to Ranger, R.C.—DIDO, 18: *Capt.* L. Davies, C.B. *Lieut.* F. Blair.—EXCELLENT, 50: *Mate*, H. J. H. Hutchinson.—ECHO, St.V.: *Lieut. Com.* W. V. Read.—FLY, 18: *Lieut.* H. T. Laye.—GREENWICH HOSPITAL, Outpension: *Capt.* M. Head, *Com.* R. Tomlinson.—GRIFFIN, 3: *Lieut. Com.* J. G. D'Urban.—HARLEQUIN, 16: *Purser*, W. Wallis.—HASTINGS, 74: *Mid.* W. P. Johnson.—HOWE, 120: *Lieut.* J. Campbell.—INCONSTANT, 36: *Col. Mate*, F. Denison.—NORFOLK, Con. Sh.: *Surg.* C Inches, M.D.—PEMBROKE, 74: *Purser*, G. Hodskins.—PINCHER, Sch.: *Mid.* W. Herbert.—ROYAL GEORGE, Yacht: *Assist. Surg.* Baily.—ROSE, R.C.: *Lieut. Com.* V. H. Jones.—RUSSELL, 74: *Lieut.* G. Vincent.—SAMARANG, 28: *Capt.* W. Broughton, *Lieuts.* R. Inman, A. Lavie, J. H. Murray; *Master*, J. Penn; *Surg.* A. Lane; *Purser*, A. Frame; *Sec. Master*, J. Tucker; *Mid.* J. K. Hancock; *Vol.* W. Crowder; *Col. Vol.* J. K. Hancock, T. Webster.—SARAH, Con. Ship: *Surg.* J. M. Ternan, M.D.—SERPENT, 16: *Lieut.* Dixon.—SHEERNESS, Ordinary: *Master*, A. Thompson.—SULPHUR, 8: *Com.* E. Belcher; *Purser*, E. Owen; *Mate*, G. Robinson.—THALIA, 46: *Assist. Surg.* W. Baily.—VANGUARD, 80: *Lieut.* C. Nowell.—VICTORY, 104: *Chaplain*, Rev. H. Small; *Lieut.* W. V. Lee.—WOLVERINE, 16: *Com.* Hon. E. Howard; *Lieut.* A. Fairman; *Purser*, J. Taylor.—WINCHESTER, 50: *Lieuts.* W. R. Pelley, H. Dunlop.

MOVEMENTS OF H.M. SHIPS.—ENDYMION; 4th Nov,. arrived at Devonport.—INCONSTANT, 36; 19th Nov., arrived at Spithead. —NORTH STAR, 28: 28th Oct., paid off.—SERPENT, 16: 8th Nov., arrived at Portsmouth.—SATELLITE, 18; 15th Nov., sailed for West Indies.—SCORPION, 20; 22d Oct., sailed for Sierra Leone.—TALAVERA, 74; 8th Nov., arrived at Plymouth.

Births.

On the 14th of November, at Chelsea, the lady of Lieut. Alfred Miles, R.N., of a son.

At Trematon Hall, the lady of Capt. Jervis Tucker, R.N., of a daughter.

On the 20th of Oct., at Malta, the lady of Captain George Bohen Martin, C.B., of his Majesty's ship Caledonia, of a daughter.

On the 26th of Oct., at Aldborough, in Suffolk, the lady of Lt. G. Thomas, of a daughter.

Oct. The lady of Dr. Armstrong, of the Royal Naval Hospital, of a son.

On the 9th of June, at Benarpore, near Calcutta, the lady of R. Garrett, Esq., H.E.I.C.S., of a son and heir.

On the 25th of Oct., at the Ryalls, Seaton, Devon, the Lady of Captain W. H. B. Proby, R.N., of a daughter.

At Somerset Place, Stoke, the wife of Mr. L. Shanks, Purser, R.N., of a son.

Marriages.

At Poona, Bombay, Capt. W. Scott Adams, D.A. Quarter-master General, to Helen, daughter of the late Captain Methven, R.N. St. Andrew's.

On the 26th of Oct., at Cranbourne, Dorsetshire, Thomas Pery Knox, Esq., eldest son of the late Rt. Hon. George Knox, to Frances Elizabeth, eldest daughter of the late Captain George Burdett, R.N.

At Chelsea, J. E. Gordon, Esq., R.N., M.P. for Dundalk, to Barbara, daughter of the late S. Smith, Esq., of Berkeley-square, and Woodhall Park, Herts.

In Natclash, Cork, St. Leger Aldworth, Esq., Lieut. R.N., to Alicia, daughter of the late C. Deane Oliver, Esq., of Rock Mill Lodge.

At Barbadoes, Lieut. Philip Chetwode, R.N., of H.M.S. Belvidera, fifth son of Sir John Chetwode, Bart., of Okeley, Staffordshire, to Joanna Bishop, second daughter of the late John Gay Alleyne, Esq.

On the 26th of Oct., by the Very Rev. the Dean of Jersey, at the Town Church, St. Hellier's, Henry Anderson, eldest son of the late Col. Anderson Morshead, R.E., of Widey Court, Devon, to Margaret Ogilvie, daughter of the late James Milne, Captain, R.N.

At Hampton, Captain Courtenay Boyle, R.N., Groom of the Privy Chamber to his Majesty, to Miss Wallace Ogle, daughter of William Wallace Ogle, Esq., of Causey Park, Northumberland.

Lately, at St. Andrew's, Scotland, Dr. Mason, of Jamaica, to Elizabeth, daughter of Lieut. Henry Cox, R.N., late of Devonport.

On the 5th of November, at St. Thomas's church, Portsmouth, George Johnson, Esq., master of H.M. ship Conway, to Agnes, daughter of Mr. Thomas Burnett, of Southsea.

On the 8th of Nov., at St. George's, Hanover-square, Captain Freemantle, R.N., second son of the late Vice-Admiral Sir T. F. Freemantle, G.C.B., to Isabella, relict of J. Wedderburn, Esq. and daughter of the late D. Lyon, Esq. of Portland-place.

At Cramahe, U. C. on the 29th Oct., by the Rev. J. Grier, Henry Lawrence Rowed, Esq., youngest son of the late Capt. Rowed, Esq., R.N., to Kate, only daughter of Dr. Bally, formerly of Surrey, England, now of Cramahe.

At Paull, in the county of Cornwall, Francis Claud Burnell, Esq., of the Bengal Horse Artillery, to Emily, the only daughter of the late Capt. Wm. Woolridge, R.N.

In London, Lieut. Robinson, R.N., to Miss Weary, daughter of J. Weary,

Esq., and grand-daughter of Mrs. Colley, of Portland-square, Plymouth.

On the 3d of Nov., at Bath, George B. Bunbury, Lieut., R.N., third son of the late Thomas Bunbury Isaac, Esq., of Holywood House, County Down, Ireland, to Elizabeth Ann, only child of Edwin Reeves, Esq., of Bath.

At Lyme Regis, John Nicholson, Esq., of Clifton, to Ann Elizabeth, second daughter of Capt. Waring, R.N., of Lyme Regis, Dorsetshire.

At Tormoham, by the Rev. Matt. Lowndes, Vicar of Buckfastleigh, Edw. John White, Esq., R.N., second son of Thomas White, Esq., Captain, R.N., of Buckfast Abbey, to Caroline Georgiana Buttevant, only sister of Dr. Barry, of Torquay.

At St. Gluvais, Cornwall, Edward Dunsterville, R.N., of H.M.S. Howe, to Jane, daughter of Wm. Edgecombe, Esq., of Penryn.

On the 3d inst., George Cartwright, Esq., R.N., second son of the late Rev. Edmund Cartwright, Prebendary of Chichester, &c., to Henrietta Maria, niece of the late General H. Watson Powell.

Deaths.

On the 31st of October, at Southampton, in the 72d year of his age, Vice-Admiral Matthew Henry Scott. By the naval service he was well known as an able, active, and zealous seaman.

On the 2d of Nov., in his 63d year, in London, Mr. William Rowes, of Southsea, Superannuated Master in the Royal Navy.

On the 26th of Oct., at Backwell's Baths, Devonport, aged 51, Captain George Harris, R.N., (1807,) Companion of the Bath, and son of the late Thomas Harris, Esq., who for half a century was the principal proprietor of Covent Garden Theatre.

On the 8th of Nov., at Milbrook, Mrs. Hodges, wife of Mr. Peter Hodges, Master, R.N.

Sept. 11th, at Exmouth, aged 16, Augusta Margaret, only daughter of Captain the Hon. George Poulett, R.N.

Lately, the infant son of Lieutenant Kennedy, commanding H. M. steam-vessel Spitfire.

At sea, on his voyage from Lisbon, Mr. Richard Langdon, master of the schooner Lovely, of Dartmouth.

On the 5th of November, at the Villa Caponi, near Florence, after an illness of only 14 hours, Caroline, wife of Capt. H. E. Napier, R.N.

At Truro, Capt. John Alexander, R.N., in the 75th year of his age.

At his seat, Thornbury, Queen's County, on the 18th of Oct., Commander Richard Croker, R.N., magistrate of that county.

At Boulogne-sur-Mer, on the 30th of Oct., Charlotte Georgiana, second daughter of Capt. F. Wetherall, R.N.

On the 12th of Nov., at Manor-house, Deptford, in the 70th year of his age, John Hillman, Esq., many years Surveyor of Shipping to the Hon. East India Company.

At Melrose, Scotland, Capt. Walter Tait, R.N., aged 60. He was in the hard-fought engagement between the Mars, 64, and the French Hercules, 74, when the latter was captured, both Captains being killed.

On the 22d of June, at Lea, Mr. Arthur Hamilton, second son of Sir Edward Hamilton, in the 26th year of his age.

On Oct. 16th, at Crewkerne, Lieut. John Hopkins, R.N., aged 45 years.

At Brixham, on the 1st of Nov., Lieut. Samuel Langley, R.N.

On the 20th of Oct., at Ottery St. Mary, Frances Martha, the fifth beloved daughter of Captain Stupart, R.N., aged 8 years.

On the 18th of Nov., aged 68, at her residence in Somers Town, Mrs. Galton, relict of Lieut. William Galton, R.N.

On the 28th of Sept., at Lisbon, Mr. Ferdinand W. Gambier, midshipman of H.M.S. Hastings.

In July last, at Sierra Leone, of fever, universally esteemed and regretted, Mr. William Jackman, second master of his Majesty's brig Leveret, eldest son of Mr. Jackman, of Devonport.

On the 29th of Oct., the Rev. W. Lax, Lowndes Professor of Astronomy, whose Nautical Tables are well known to the Navy, at St. Ibbs, Herts, at the age of 75.

On the 31st of July, on his passage to England, between the Cape of Good Hope and St. Helena, William Hawkins, Esq., in the 78th year of his age, second son of James, late Lord Bishop

of Raphoe, and elder brother of Admiral Sir James Hawkins Whitshed, Bart. G.C.B.

On Sept. 26, off Martinique, Lieut. Harvey, commander of the Pigeon packet.

On the 2d of August last, on board the Claudine, on her passage to England, Maika Anna Rose, wife of W. H. Rose, Esq., of Madras, and daughter of the late Vice-Admiral Baron Capellen.

In Princess-street, Devonport, Mrs. Birkhead, wife of Captain Birkhead, R.N.

On the 1st of Nov., at Portesham, Mrs. Ann Hardy, sister of Joseph Hardy, Esq., of Charminster, and also of Rear-Admiral Sir Thomas Masterman Hardy, Bart., G.C.B., Governor of Greenwich Hospital, aged 78.

On Tuesday last, at Southsea, Mrs. Johns, aged 71, widow of the late Mr. Johns, master, R.N., whose loss is deeply regretted.

Recently, in London, Capt. James Green, R N.

At Wickham, Hants, on the 30th ult., Lieut. Thomas Dorsett Birchall, R.N., (1790.)

METEOROLOGICAL REGISTER, *kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.*

OCTOBER, 1836.

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.
		in. dec.	in. dec	°	°	°	°						
1	S.	29·35	29·10	51	53	40	54	S.	S.	7	9	Qr (2)	Qr. (3)
2	Su.	29 00	28·90	47	51	42	52	S.W.	S.W.	6	6	Qp (1) (2)	·· Qp (3)
3	M.	29·01	29·29	44	50	41	51	N.W.	S.W.	7	7	Qp (2)	Qp (3)
4	Tu.	29·48	29·50	41	54	35	54	S.	S.	3	3	· B.	Bc.
5	W.	29·81	29·85	42	54	36	56	S.	S.W.	3	3	F.	B.
6	Th.	29·84	29·76	49	55	43	59	N.E.	E.	1	2	Fr 1)	Or (3)
7	F.	29·50	29·40	58	60	53	61	S.E.	S.E.	2	2	O.	Or (3)
8	S.	29 39	29·37	54	56	53	59	S.W.	S.W.	3	3	O.	O.
9	Su.	29·35	29·41	52	56	45	58	S.W.	S.W.	4	5	Bv.	Bcp. (3)
10	M.	29·21	29·31	55	59	47	61	S.	S.W.	7	7	Qor 1) (2)	Qbc.
11	Tu.	29·23	29·37	55	56	53	59	S.	S.W.	8	7	Q r (1) (2)	Qbc.
12	W.	29·60	29·56	50	58	45	59	S.W.	S.W.	5	6	· B.	Qr (4)
13	Th.	29·11	29·26	57	58	51	60	S.W.	S.	7	5	Qbcp (1)(2)	Or (3)
14	F.	29·77	29·90	53	58	51	58	S.W.	S.W.	5	3	· Bc.	O.
15	S.	29·85	29·85	56	60	51	61	S.E.	S.	1	2	Ocr (2)	Bc.
16	Su.	30·22	30·20	50	56	42	58	S.	S.E.	2	2	F	Bc.
17	M.	30·20	30·18	55	59	51	59	S.	S.E.	2	2	O f	Of.
18	Tu.	30·16	30·12	57	63	54	64	S.E.	S.	1	2	O.	Bc.
19	W.	80·23	30·29	58	57	53	59	W.	N·W.	2	2	Fd 1)	Bc.
20	Th.	30·43	30·41	47	53	39	54	S.W.	N.	2	1	Bcm.	Bcm.
21	F.	30·32	30 30	47	53	42	54	S E.	E.	1	1	M w.	Mcw.
22	S.	30·38	30 38	48	54	44	55	E.	N.	1	1	· Mw.	· Bcmw
23	Su.	30·41	30·39	44	51	36	52	S.W.	W.	2	2	· Fw.	Bmw.
24	M.	30·38	30.36	49	53	44	54	S W.	S.W.	1	1	Of.	Of.
25	Tu.	30·25	30·22	49	50	48	51	S.W.	S.W.	1	1	O f.	Gof.
26	W.	30 17	30·11	50	52	48	54	S.W.	S.W.	1	2	G of.	O
27	Th.	29·64	29·76	52	44	34	52	N.W.	N.W.	7	8	Qp 2)	Qbc.
28	F.	29·88	29·82	39	39	34	41	N.W.	N.W.	6	6	Bcmpsr (2)	Bcm.
29	S.	29·45	29·65	32	32	24	33	N.	N.	8	6	Qos 1) (2)	Qos (3 4)
30	Su.	30·03	30·05	32	35	28	37	N.	N.	2	2	·· B.	· B.
31	M.	30·17	30·07	32	37	26	38	N.W.	N.W.	3	3	Bcm.	Bcm.

OCTOBER—Mean height of Barometer = 29·808 inches; Mean Temperature = 48·5 degrees; Depth of Rain fallen = 3·85 inches.

For explanation of abbreviations used in the columns "Weather," and "Strength of Wind," see former numbers.

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THE

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Vol. V.

A

JOURNAL OF PAPERS

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Supplement.

ORIGINAL PAPERS.

DECEMBER, 1836.

AUSTRALIAN SETTLEMENTS—NORTHERN COAST.

(Continued from page 645.)

ON the following morning (21st Sept.) Capt. Bremer landed with a party of gentlemen, to examine the country, and search for fresh water on the north side of Table Point, while the master was sent in charge of a party in the same neighbourhood to haul the sein. Mr. Smith, master's mate, was detached in another direction to search for fresh water, and I obtained permission for the cutter on a similar service. Accompanied by Mr. Capponi, the surgeon, Lieut. Williamson, R. M., and a midshipman, I commenced the examination of that part of the east coast of the harbour on the south side of Table Point. Landing there, we proceeded along-shore southerly, followed by the boat, and strictly examined every spot that was considered at all likely to reward our search, but without effect, the soil being very dry and parched, though in many parts exceedingly good, and covered with gum trees (eucalypti) and casuarina of small dimensions. The pandanus and fan palm were also plentiful, but recent conflagrations have totally destroyed all brush or underwood, and have given the country the general pleasing appearance of being open forest land. It was generally destitute of much grass, and in some few parts very sandy and sterile, but seemed capable of being made a fine grazing country by thinning the woods.

Traces of the kangaroo were occasionally met with, and from a dry ravine we started an opossum, about the size of a rabbit, but saw no other quadrupeds. The ground in many parts had been so perforated and burrowed by lizards, snakes, kangaroo rats, and perhaps some other animals, that it gave way under foot, and we frequently sunk several inches into it. The soil thus exposed to view was in general extremely good, though in some places it resembled the sand of hour-glasses, and was of a red colour. On these spots numerous ant-hills had been erected, from a few inches to five feet in height, terminating mostly in sharp-peaked summits, and the majority of them inhabited by a great variety of these industrious little insects. The most tormenting species of them to man is a light-coloured green ant, which generally forms its nest by binding together the large leaves of trees and bushes; and when

disturbed by a luckless passenger, they do not fail to display their power of resentment with ample ferocity. During a walk of fourteen or fifteen miles in different directions, we observed among the feathered race the handsome black cockatoo of the country, parrots of a deep-red and dark colour, parroquets, quail, the small Australian pheasant, doves and pigeons, numerous sand-larks, hawks of very beautiful plumage, and a great variety of others quite unknown to me by name or character; but we saw no snakes, though this must be considered a wonderful part of Australia, if found to be without them.

The dry beds of numerous small ravines and hollows were searched for fresh water without effect, until we arrived at a low sandy point bearing from the ship at anchor S. 30′ W. distant about seven miles. Here we found a deserted encampment of the Malays, that had been occupied by them not long since for the purpose of curing their trepang; the rude fire-places for this purpose, ranged in five or six rows of half a dozen in each, were still quite perfect, and filled with the embers of their recent fires; temporary stalls or bed-places remained undemolished, and piles of fire-wood, that had been cut and laid in heaps to season, plainly indicated the intention of these Mahometans to return. About the fire-places that appeared to have been used for cooking, were several pieces of earthen pots or boilers, and five or six water-holes about two feet in depth, staked round with split bamboo, to keep out the loose sandy mould in which they were dug. On clearing one of them of the loose drift-sand with which it had been nearly filled up, water began to flow into it at three feet below the surface, and proved perfectly fresh and good. There could be little doubt of our meeting with equal success in all the others; but our point being gained by the discovery of water, and our time not admitting of farther delay, we walked to the extremity of the point, and under the inner side of two casuarina trees growing close together at the edge of high-water mark, we dug a hole in the sand nearly four feet deep, and buried a bottle containing, on parchment, a copy of the Declaration already given, together with an English farthing of his late Majesty's reign. The mouth of the bottle was secured with a cork, covered over with wax, bladder, canvass, and sheet-lead. The neck was placed downwards, with an English penny-piece under it, and an old and new coin of the same kind on the top; after which we filled up the hole level with the surrounding sand; and to guard against the probability of its removal by Malays, or the natives, we left no external marks by which it could be discovered. With my pocket-compass, I then set the point of entrance to Knocker's Bay, bearing N. 55° W., and the south trend of a projection southward of Spear Point S. 33° W. This spot, which we named Point Record, being the only prominent sandy projection in its vicinity, may easily be

found by the above bearings, and its situation with respect to Table Point.

Returning on board about half an hour after sunset, we found that a party of gentlemen who had been amusing themselves with their fowling-pieces on the same shore, had seen, in addition to what I have enumerated above, a great many kangaroo of a rusty brown colour, of various sizes, besides clouds of large vampyre bats, which took wing on the discharge of a musket in their neighbourhood, and completely darkened the air by their numbers: one of the latter was shot, but lodged in a tree, and could not be recovered. The fishing party caught with the sein a good supply of sand-mullet, king-fish, guard-fish, mackerel, and some other kinds; while those on board caught some of the same sort alongside with hook and line, and fared sumptuously. The principal object to be desired, fresh-water, was not however discovered by them, though traces of natives were numerous, and, with the presence of so many kangaroo, &c., leave room for supposing that there certainly were some at no great distance.

The morning of the 22d being calm, the boats of the expedition hauled the sein with success in the sandy bay north of Table Point, while I accompanied Captain Bremer to the opposite shore in the Tamar's barge, with Captain Barlow of the Buffs, and the commander of the Harcourt, in further search of fresh water. Landing on the projection which forms Knocker's Bay, we climbed a very narrow ridge of the red earthy cliffs, which are here about thirty feet high, and very rocky, and found their summit crowned with forest land that had been cleared of underwood by recent fires, and thereby rendered easy of access to the explorer. The surface was mostly covered with iron-stone gravel, and ants had been as busily employed in the erection of habitations here as on the east side of the port; upon the whole, the soil was not so good as we found there, though the narrow neck of which I am remarking is not a fair criterion by which an opinion should be formed. The soil being perfectly dry and parched, I left the shooting party, and went in search of water alongshore towards the head of Knocker Bay, accompanied by Lieut. Williamson, R. M., and some of the young gentlemen of the Tamar.

Along the beach we observed the tracks of two dogs, and several human feet, and the remains of shell and turtle repasts were plentiful in every part. In making choice of convenient shady spots in which to enjoy these repasts, the aborigines have here displayed a very considerable degree of rural taste, their resting-places being generally under the spreading branches of some beautiful tree at the water side, or under some of the many clusters of a very picturesque tree, called the pandanus, which thrives with extreme luxuriance and perfection on the small flats between the steep cliffs and high-water mark. It was near one of these enchanting little

wild spots that I found two baskets made of the sheath or covering that encloses the leaves of a beautiful palm called "seaforthia elegans," at their insertion in the stem. These baskets were constructed in a simple but neat manner, and were neatly sewn together with strips of a cane peculiar to the country; their use appeared to have been to hold water, of which they were capable of containing about a gallon apiece; but the specimens in question had been long out of use, being rent in several places by the action of the sun, and totally unfit for service.

This seemed to have been the encampment of a whole tribe of natives, the soft barb of the tea-tree which is used by them to lie upon being scattered about in large pieces, five or six feet in length, half buried in the sand. Large shells of the voluta species, that had been used by them as drinking utensils, and numerous heaps of cockle-shells, tended to corroborate this opinion; and against a bush I found a young sapling, broken off to the length of nine feet and a half, and trimmed of its branches, being evidently placed there to season for a spear; with my knife I made a small incision in the upper end, and fixed in it a penny-piece of the reign of George the Third.

Continuing on a few hundred yards, we came to a sandy low point, bidding fair to reward our search for fresh water; and while eagerly examining it for that purpose, we discovered the old neglected fire-places of parties of Malays, who had been some months ago curing trepang, and several water-holes dug around them. Some young trees having grown up among these fire-places, plainly shewed that they had not been in use for several months at least. The water-holes which had been dug, were now very nearly filled up with drift-sand, but by clearing them out, fresh water would very probably have been found. The afternoon was, however, so far advanced, that the barge was beating about, awaiting our return. Captain Bremer being in hopes of getting the ships out of the port before dark, with a fresh sea-breeze that had set in from the north-eastward; for the great want of fresh water in sufficient quantity for our purpose, seemed to act entirely in prejudice of Port Essington as a settlement; we, therefore, made the best of our way on board, but did not reach the Tamar till the sun had disappeared behind the land. It was then too late to venture running out of a place so little known, and the cable was again veered to its former range.

On our arrival on board, we received the melancholy intelligence of a boat belonging to the Harcourt having upset a few hours previous, on her passage on board, with a party of gentlemen belonging to the intended new colony, who had been on shore shooting. The accident was providentially discovered by our youngest midshipman, Mr. Frederick Paul, and with an alacrity suitable to such an occasion, Mr. Golding, the first lieutenant, proceeded to

the spot in time to rescue from a watery grave seven or eight individuals, who were clinging to the boat and to oars. The Harcourt's cabin steward, with a fine young apprentice-boy, named Graham, (son of a clergyman with a large family,) and two soldiers of the Buffs, unfortunately sunk to rise no more, after contending with the watery element under the disadvantages of not being able to swim. The gentlemen who were so opportunely saved on this occasion, were the surgeon, commission officer and storekeeper of the new colony, together with the Harcourt's second mate, to whom no blame was attached, but, on the contrary, every praise for his coolness and presence of mind. The boat was upset in consequence of the obstinacy of a man attending the sheet not easing it off when ordered to do so by the mate.

During the excursions that were made on the east shore to-day, a young alligator, about seven feet in length, was seen by Mr. Smith of the Tamar, who was preparing to discharge his piece at the animal, when it disappeared among some rocks at the foot of the cliffs, and was not seen again. No natives had been seen to-day, but their fires were observed smoking to a great extent for the last two days on the narrow neck of land that separates Port Essington from Van Diemen's Gulf, and towards Mounts Bedwell and Roe, and they appeared to-day to have approached us much nearer than usual. On a sandy beach some of our people saw the representation of a turtle drawn with a stick, together with other marks, apparently intended to amuse children. It was greatly to be regretted that we could not hold a conference with any of these people, though I consider their encounters with the Malays to be of so hostile a nature, that it may be some considerable time before any friendly intercourse can be established with them. While at Timor a few years ago, I understood from a Malay rajah who had for many years sailed as chief of the numerous forces that periodically visit the northern coasts of Australia for trepang, that the natives were invariably very hostile towards them, and took every opportunity of collecting in the greatest numbers for the purpose of attacking them while procuring or preparing trepang. He represented them as a savage, ferocious, treacherous set of people, whom they stigmatize with the appellation of *Marengos*, which in the Malay language signifies a rascal, or great rogue. It should nevertheless be remembered, that in describing the Australian aborigines, the rajah was strongly portraying the character of his own countrymen, from whom they have doubtless imbibed many of those degrading principles for which that nation is so notorious, and which could not fail to degrade a character perhaps originally unamiable. It appears evident that the natives have purposely kept aloof since our arrival at Port Essington, on the shores of which numerous recent traces of them have been seen, and the actual sight of two can leave little room for doubting

that they have frequently been near us. Should the same feeling predominate at the intended colony on Melville Island, it will perhaps be beneficial to their new visitors, who will thereby be enabled to establish themselves without molestation, and be spared the necessity of keeping such strict watch and guard as will otherwise be found necessary.

This forenoon it was new moon, and we ascertained it to be high water at half past two, P.M., the tide having a rise and fall of fourteen feet. It has not set regular or with any strength at our anchorage, being considerably affected by the near neighbourhood of Table Point, and the reefs which project from its southern termination. We were a good deal astonished early this morning at discovering about three hundred yards in-shore of us, or half a mile westward of Table Point's north bend, a small rock just awash, which had previously escaped our observation. The master, who went to sound about it, found the water decrease gradually to three fathoms close alongside of it, and the same depth was preserved all round at the distance of as many yards, the rock not being more than a dozen yards in circumference. Between it and Table Point were found four feet in apparently a clear channel; but this projection should not be approached within a mile by any ship, unless necessity requires it, as the rock dries only at the lowest tides, and appears then only as large as a bucket. Our boats must frequently have passed over without discovering it, on their passage to and from the shore, as it is covered by more than two fathoms at high-water spring tides.

23d. Sept. Having a light easterly air at daylight, we made all sail out of Port Essington with our convoy, carrying very even soundings nearly on the same ground we had previously ran over, and trying by boat several large patches of discoloured water off Vashon Head, without finding any diminution in its depth. A considerable reef and shoal surrounding that projection, render it necessary for a ship not to approach it within two miles in any direction, unless with a very clear and good look-out ahead. Being about the period of low water, the rocky reef off Point Smith was also dry to some extent, and should be carefully avoided in going in. On clearing Port Essington, and bringing Vashon Head (which is low and sandy) to bear S. by W. ½ W. to S. by E, distant six or seven miles, we steered a west course by compass for Cape Van Diemen, about 120 miles distant, and found the variation by a setting amplitude off Dundas Strait to be 1° 24′ with the ship's head west. The N.E. part of Melville Island was then in sight, bearing from S. 23 to 56 W., 20 miles distant.

It was not until the 25th of September, after being detained by anchoring to avoid the set of the tide, that with a light northerly breeze, we made all sail with our convoy towards the north entrance of Apsley Strait. The steep bright red cliffs of Piper's Head

were very conspicuous to the E.N.E., and, keeping them on our larboard bow, we gradually neared the southern verge of Cape Van Diemen's Shoal, (which Captain King called *The Mermaid Shoal*, after the little cutter in which we discovered it,) decreasing the depth of water on a very even bottom of seven and six fathoms. Edging away gradually to the northern extreme of Bathurst Island, which is low, sandy, and covered with trees, and has a sandy shoal projecting from it in a N.W. direction; we increased our depth, and, when approaching this shoal within half a mile, got suddenly from eight and nine to eighteen and twenty fathoms. The Mermaid Shoal approaches Bathurst Island hereabout in the form of a small sand-bank and a reef of rocks, both of which were dry at low water, and form a channel about a mile and a quarter wide, with the above sandy spot off Bathurst Island. The sand-bank was set at E. ½ S. by compass, (which may also be considered as the true bearing,) in a line with the steep bushy south view of Piper's Head, and N.E. on with the end of the bushes on Cape Van Diemen. The dry reef above alluded to, bears about E. 25° S. from the sand-bank, three and a quarter miles distant, and was set at E. 17° N. in a line with Piper's Head south view. There did not appear to be any safe or practical channel for ships between these dangers and Piper's Head, that space being occupied by numerous reefs and shoals, partly uncovered at low water. In the channel to southward of them, we had 16 and 18 fathoms, borrowing towards Bathurst Island, and, on hauling in to the S.E. towards Luxmore Head, shoaled gradually on muddy bottom to ten and twelve, about half way over. That projection is easily distinguished by its lofty cliffy appearance, being more elevated than the adjoining land, and projecting considerably from the larboard shore. Indeed, its locality in many respects seeming to recommend it particularly for the site of our new establishment, we anchored about three-quarters of a mile from its N.W. trend, bearing S. 65 E. All boats were immediately lowered; and our convoy having brought up near us, we landed on Luxmore Head in the same form as at Port Essington, and took possession of the country in a similar manner, by hoisting a British union jack in a conspicuous tree.

The Declaration being read as before, the same ceremonies were observed. The Tamar fired a royal salute with the national colours displayed at each mast-head, and terminated the ceremony of taking possession of this valuable tract of country for the British crown; a supremacy which this portion of the globe has hitherto known only to admire and respect.

Having adjusted this desirable point, we separated into two parties in search of fresh water: Captain Bremer, with the first lieutenant, proceeded with four marines to examine the northern part of Luxmore Head, while I took the opposite direction with

four more, and about a dozen seamen who wished to follow. The ridge of stony land that forms Luxmore Head, is about two miles in length, parallel with the coast line, and then falls back with a gradual descent towards a flat of mangroves, overflown nearly half way across at half a mile from the ridge. I walked to the southern extreme of Luxmore Head, and traced along a great portion of the mangroves without finding any fresh water, or immediate indication of it, although several spots appeared capable of producing it by digging, and traces of natives were frequently fallen in with. Captain Bremer met with as little success; but a few men, who strayed alongshore to the northward, observed a small quantity of brackish water near some nativs huts behind the beach, two or three hundred yards from Luxmore Head. The huts were said to be composed of bark of trees, supported by branches bent in a curved form, and capable of containing about two persons each in a recumbent position; the greatest elevation of any of these frail edifices above the ground being no more than four feet; but it being then late, we were obliged to defer our further examination until the next day.

On the morning of Monday, September 27th, every man was active and alert in the discharge of his duties. Our principal object being the attainment of fresh water upon any spot that should be found most eligible for the new town, several parties were despatched in various directions about Luxmore Head for that purpose, while Captain Bremer deputed me to land, and take possession of Bathurst Island, and afterwards to search for fresh water in any place most likely to afford it. With Lieutenant Clayton, R.N., Mr. Lairie, midshipman, and my boat's crew of six hands, I landed on the north sandy point of the island, erected a British union jack upon an oar, and took formal possession of Bathurst Island, &c., in the name of his Majesty, George the Fourth, with three times three. Having drank to the health of our noble sovereign, and to the success of our new colony, I left the boat's crew digging a deep hole in the sand for water, and with two men walked inward to the southward and westward to examine the produce of this land.

GEOGRAPHICAL COLLECTIONS.

Number.	Observatories	Country.	Latitude. +When North −When South	Longitude. +When West. −When East.	Authorities for Longitude.
			° ′ ″	° ′ ″	
49	Point des Monts	Canada	+49 18 48	+68 26 24	Capt.H.W. Bayfield
50	Ditto *	Ditto	+49 19 42	+68 25 0	Ditto.
51	Balbriggan *	British Islands	+53 36 30	+ 6 11 48	Com. W. Mudge.
52	Loop Head *	Ditto	+52 33 51	+10 52 31	Capt. M. White.
53	Hunstanton *	Ditto	+52 57 8	— 0 29 39	Com. W. Hewett.
54	Lowestoffe †	Ditto	+52 29 10	— 1 45 12	Ditto.
55	Duncannon *	Ditto	+52 12 9	+ 7 58 42	Capt. M. White.
56	Cape Chat	Canada	+49 6 0	+66 48 18	Capt.H.W. Bayfield
47	Girgenti *		+37 15 39	—13 32 37	Gapt.W. H. Smyth.
58	Passaro ‡		+36 41 30	—15 10 3	Ditto.
59	Syracuse *		+37 2 58	—15 17 59	Ditto.
60	Cawee Island §	Canada	+49 49 30	+67 4 54	Capt.H.W. Bayfield
61	Manitou River ‡	Ditto	+50 17 42	+65 17 6	Ditto.
62	Amsterdam Isl.		—37 52 0	—77 52 0	Capt. P. P. King.
63	St. Paul's Island		—38 40 0	—77 52 0	Ditto.
64	Cape Leeuwin	Australia	—34 21 0	-115 6 0	Ditto.
65	D'Entrecasteaux	Ditto	—34 52 0	-116 1 0	Ditto.
66	Columbiete Isl.		+39 58 38	— 0 44 25	Capt. H. W. Smyth
67	Formentera		+38 39 56	— 1 31 12	Arago and Biot.
68	St. Mary, Cape		+36 55 36	+ 7 49 23	Franzini.
69	Pentld. Skerries*	British Islands	+58 41 38	+ 2 55 2	Mr. G. Thomas.
70	Dunnet Head*	Ditto	+58 40 30	+ 3 22 3	Ditto.
71	Haisborough*	Ditto	+52 48 57	— 1 39 2	Com. W. Hewett.
72	Harwick	Ditto	+51 56 43	— 1 17 6	Ordnance Surv.
73	Mewstone Rock	Ditto	+50 18 30	+ 4 5 35	Ditto.
74	Maiden Rocks*	Ditto	+54 55 33	+ 6 44 12	Com. Mudge.
75	Egg Isl. N.W. Pt.	Canada	+49 38 18	+68 13 12	Capt.H.W. Bayfield
76	Chatham Cape	Australia	—25 2 30	-116 29 0	Capt. P. P. King.
77	Howe, West Cape	Ditto	—35 8 30	-117 40 0	Ditto.
78	Bald Head	Ditto	—35 6 15	-118 0 45	Ditto.
79	Seal Island	Ditto	—35 4 55	-117 58 7	Ditto.
80	Riche Cape	Ditto	—34 39 0	-118 14 30	Ditto.
81	Knob Cape	Ditto	—34 31 30	-119 24 30	Ditto.
82	Kinsale Light	British Islands	+51 36 18	+ 8 33 20	Capt. M. White.
83	Land's End	Ditto	+50 4 7	+ 5 41 33	Ordnance Surv.
84	Leasowes Light	Ditto	+53 24 50	+ 3 6 51	Ditto
85	Cape Chat	Canada	+49 6 0	+66 48 18	Capt.H.W. Bayfield
86	Mt. Louis Riv.¶	Ditto	+49 14 36	+65 46 36	Ditto.
87	Gt. Fox River **	Ditto	+49 0 6	+64 25 54	Ditto.
88	Pt. St. Margaret	Ditto	+50 2 12	+66 47 42	Ditto.
89	Carousel Island, S. extreme	Ditto	+50 5 33	+66 26 36	Ditto.

* Lighthouse.
† Church.
‡ Higher Lighthouse.
§ Fort.
‖ West Poiut.
¶ East point of the bay.
** Entrance.

Remarks on Quarantine Systems. *By Usher Parsons, M.D., formerly Surgeon in the U.S. Navy.*

[From the New York Naval Magazine.]

The commercial welfare and prosperity of maritime cities, as well as the health and convenience of crews and passengers who arrive at them, are involved in the subject of quarantine restrictions, and impart to it greater interest than any other question of medical police that can offer itself for discussion. It is a subject, too, particularly suited to the pages of the Naval Magazine.

The term quarantine is used to express detention, for any specified number of days, of persons, ships, goods, &c., supposed to be capable of propagating any infectious or contagious disease. The number *forty*, implied in the derivation of the word, probably originated in a superstitious notion of the dark ages, that this number of days passed in seclusion purified the body of pestilential taint, as forty days of Lent is supposed to do the soul of its moral pollutions: and as Lent claims kindred with forty days' fasting in the wilderness, and this probably with the forty years' march of Israel to the land of promise, so the term in question can certainly boast of a remote ancestry. But, that forty days marks a crisis, or defines a boundary to the existence of contagion in persons or vessels, is a doctrine which neither experience proves, nor common sense any longer tolerates.

Quarantines are the offspring of a belief in contagion, as a cause of some epidemics. The origin of such belief is traced by some to the year 1545, and is attributed to a political intrigue said to have been practised by Pope Paul III. at the council of Trent. The story is, that, desirous of removing the assembled conclave from that city to Bologna, in Italy, where his supremacy was absolute, this pontiff commissioned one of his cardinals to propagate the report, that a contagious fever prevailed in the former place; which he accomplished through the instrumentality and connivance of an eminent physician named Fracastorius. But, although such a *pious fraud* is recorded in history, and has been often recited by eminent writers both in Europe and America, yet it is demonstrable that a belief in the existence of contagion is of a much earlier date. Dr. Pariset, of France, has faithfully investigated this subject, and cites numerous extracts from Greek and Roman writings, which shew that some pestilential diseases were regarded as contagious in those nations. Authentic facts prove also that quarantine laws existed in Italy, generally, as early as 1484; and in Venice prior to 1448, or nearly a century prior to the council of Trent.

The northern nations of Europe feeling less apprehensive of plague, were slow in imposing commercial restrictions for its prevention. England deferred them till after the plague of Marseilles,

in 1720, and Holland and Denmark to a still later period; and neither of those nations have enforced them with such rigour as is done in the south of Europe, nearer the seat of the plague.

In the American colonies, sanitary laws were enacted as early as 1700, providing against the admission of vessels from sickly ports nearer than within one mile of wharves, without a bill of health; and against the landing of any person without permission, under a penalty of one hundred pounds. As early as 1742, a lazaretto was established below Philadelphia, and similar ones were erected in other cities at about the same period.

Quarantine restrictions vary in their rigour and duration in different countries, proportionally in some degree to their proximity to the sources of pestilential diseases. In the Mediterranean ports of Spain, France, and Italy, they are nearly uniform, and more severe than elsewhere. This uniformity is necessary, in order to preserve free intercourse between such neighbouring ports. As a sample of them, I will describe the laws of Marseilles, which will serve to shew their embarrassing effect upon commerce. I shall then advert to those of Great Britain, and lastly to those of the United States.

No ship can be admitted into Marseilles without permission from the health officer. If it comes from the sea-ports of the Levant, the coast of Dalmatia or Barbary, or directly from the coast of America, the sailors, passengers, and cargo must perform quarantine either on board or at the lazaretto. This varies in length, and consists of the following kinds: those of *clean bill*, *affected bill*, *suspected bill*, *foul bill*, *particular quarantine*, and *quarantine of observation*. By *clean bill* is understood, that which states that there is no sickness on board, and no suspicion of there having been any plague or contagious disease. The first, or clean bills, however, which are brought after the cessation of the plague in a foreign port, are regarded as *foul*, unless twenty days have elapsed after they commenced drawing up such bills. By *affected bill*, that which states no sickness or suspicion of contagious diseases in the port, but that vessels had arrived in said port from some other infected port, although their crews are in good health. By *suspected bill*, one which states that the port whence the vessel comes is affected with a disease of a malignant character, which spreads in families, and is suspected to be pestilential; or if there has been a communication held with a caravan, or with merchandise that has come from a place infected with a contagious disease. By *foul bill*, is one which states that the vessel has come from a country where a pestilential disease prevails, or has goods on board from such a place. All ships which left after an interval of sixty days from the cessation of the malady, are subjected to the form and rigour of *foul bill*; after an interval of more than sixty, and less than seventy days, to those of *suspected bills*; from seventy to eighty

days to those of *affected bills*; lastly, after more than eighty days have elapsed, they are subjected to the rules of *clean bills*. *Particular quarantine* is precautionary, and is applied to ships coming from Constantinople, from the Black Sea, and from Gibraltar, on account of the frequency of the plague in the Levant, and in Barbary; also, to vessels from Vera Cruz, Havana, and to other equatorial regions, where yellow fever is frequently occurring. Lastly, *quarantine of observation*, applies to vessels which have been visited by the corsairs of Barbary, or even by vessels of war, and privateers of European nations at war.

The number of days varies according to the supposed degree of susceptibility of the cargo, provisions, &c., to receive and retain contagion, a table of which is drawn up by the board of health. The quarantine of cargoes coming from Dalmatia and Barbary is 18, 20, 25, or 30 days, according to the kind of bills, provided they are *non-susceptible*, and 20, 25, or 30, if the cargo be of a suspicious kind. For ships coming from plague regions, the quarantine is 25, 30, 35, or 40 days, with a *clean bill*, and from 30 to 60 days, if the bill be *affected*, *suspected*, or *foul*. It is augmented if a great mortality prevails at the place of departure. *Quarantine of observation* is from 18 to 30 days, and particular quarantine 12 days.

Passengers may remain in ships anchored at the quarantine ground, and be supplied with provisions by guard boats; or they may pass their time on shore in the lazaretto. In the latter case they are subjected to three fumigations, together with their effects. Those who arrive with perfectly *clean bills* are allowed to see their friends through iron gratings. Those with *foul* bills are confined to an apartment for fifteen days; and if any person belonging to their ship dies of any disease, they are from that day to recommence the quarantine.

The quarantine of merchandise is, in all cases, ten days longer than that of persons, commencing it after, from ten to twenty days airing, according to its susceptibility to contagion, and after it has been fumigated.

By an ordinance of Louis Philippe, dated April, 1835, quarantine upon our merchant vessels is mitigated as follows:—

"Article I. Vessels coming from the United States of America with clean bills of health, shall not in future be subject to quarantine of observation."

"Article II. Bales of cotton coming from the United States with clean bills of health, shall not in future be opened, or sent to the lazaretto."

The Quarantine Laws of England relate chiefly to vessels coming from the Levant, and to the prevention of plague. Commanders of ships having any such disease on board, are directed, if within the straits of Gibraltar, to proceed to some Lazaretto in the Medi-

terranean, and if without the Straits, to proceed to the Scilly Isles.——There are six kinds of quarantine:

1. That performed at the Scilly Isles, on account of actual pestilence, or suspected sickness, forty-four days; and which is to recommence in the same ship on the day any person dies on board. This kind is rarely, if ever, enforced.

2. When there is a *clean bill* of health, fifteen days. This is imposed on account of danger from infected goods.

3. That performed at Stangate Creek, thirty-four days; and is applied to vessels with suspected bills—the port from which the vessel sailed being suspected of infection, although no sickness actually exists on board.

4. Where the vessel brings a *foul bill*, forty-four days at Stangate Creek. The vessel in this case comes from a port known to be infected. This is the most frequent of all quarantines.

5. Goods enumerated in first and second class, (supposed to be most capable of retaining the poison,) and coming in ships that have already performed quarantine at any of the lazarettos in the Mediterranean, are detained fifteen days in addition to the above.

6. Turkey goods coming from any other European port without the Straits, or from America, where there is not a regular establishment for performing quarantine, are treated as if coming directly from the Mediterranean. This last seems to be merely a politico-commercial regulation.

Quarantine Laws of the United States originate from the government of each state, and from city authorities; and consequently present no uniformity between different cities. In 1832, when it was feared that the cholera would reach our shores, the attention of Congress was called to national measures of defence. The committee to whom the subject was referred, after corresponding with different city authorities, introduced a bill, the tenor of which was, to interfere in no degree with the quarantine laws of any city, but merely to assist in the enforcement of *all* sanitary laws. This bill passed both houses, and contained the following provisions:—

1. Every vessel arriving at any port in the United States, shall be subject to the quarantine regulations of the port.

2. It shall be the duty of all officers of revenue cutters to assist in carrying into effect the quarantine regulations of the several ports, under the direction of the Secretary of the Treasury.

3. It is the duty of all licensed pilots to place in the hands of the commanders of all vessels they may board, copies of the quarantine regulations of the port, and of this act.

4. Any person violating the provisions of this act shall be liable to a fine not exceeding 1,000 dollars, one half to the United States, the other half to the informer.

The authority for regulating quarantine in our commercial cities is vested in a board of health. In Boston, the corporation of the

city act as a board of health. In New York, it consists of such persons as the mayor and councils shall appoint. In Philadelphia, it is composed of twelve persons; six of them appointed by the city councils, and six by commissioners of the neighbouring precincts. In Baltimore, the board consists of three commissioners and a consulting physician. The Charleston board is composed of thirteen commissioners appointed by the city council.

As it would occupy too much space to insert here the quarantine laws of all, or even more than one, of our large cities, I shall select those of the largest city only.

AN ACT to amend Title Second, Chapter Fourteen, Part First, of the Revised Statutes, relating to the Quarantine Regulations of the Port of New York. Passed May 2, 1836.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:—

Sec. 1. All articles arriving in vessels subject to quarantine, whose exportation by sea, or transportation up in the north or east rivers, and which may, without danger to the public health, be shipped from the wharves of the city of New York, may, by permission of the board of health, or the mayor and commissioners of health, be brought to the city of New York for the above object.

Sec. 2. No vessel subject to a regular quarantine of two days, unless she shall have sailed from some port in the West Indies, or in America, south of Louisiana, and north of the equator, or from some port or place in the United States south of Georgia, before the first day of June in the year of her arrival, shall, when released from quarantine, approach within three hundred yards of that part of the island of New York which lies southward of Bank-street, on the north river, and of Eighth-street on the east river, until after the first day of October in the year of her arrival, unless by virtue of a special permission to be granted by the board of health, or the mayor and commissioners of health; which permission shall not extend to embrace any time between the first day of June and the first day of September, in the year of her arrival, unless under the circumstances mentioned in the following section.

Sec. 3. If such vessel shall have arrived from any place in the Mediterranean, in Asia, in America, south of the equator, or from the Madeira, Canary, Cape de Verd, Western, Bermuda, or Bahama Islands, the mayor and commissioners of health may, by special permission in writing, direct her to be hauled to a wharf south of the bounds so prescribed, and in their discretion, may first order her cargo, or any portion thereof, to be unloaded, subject to their orders and regulations.

Sec. 4. No vessel subject to a regular quarantine of thirty days, when permitted to leave the quarantine ground, shall approach within three hundred yards of the city of New York, between the first day of June and the first day of October, in the year of her arrival, unless permitted by the board of health, or the mayor and commissioners of health; which permission shall not be granted except as prescribed in the second section of this act.

Sec. 5. All vessels wholly loaded with salt, being healthy, and from healthy ports, may be permitted to discharge their cargoes at any wharf to be designated by the board of health, or by the mayor and commissioners of health: but immediately upon being discharged, such vessels shall be subject to all the restrictions imposed by title second, chapter fourteenth, part first, of the revised

statutes; and all the provisions of said title and chapter inconsistent with the provisions of this act, are hereby repealed.

State of New York, Secretary's Office.

I have compared the preceding with an original act of the legislature of this state, on file in this office, and do certify that the same is a correct transcript therefrom, and of the whole of said original.

Albany, May 3, 1836. ARCHIBALD CAMPBELL, Dep. Sec.

The foregoing sketch of quarantine laws in a few of the cities in the commercial world, are fair samples of those that exist elsewhere; and furnish data for estimating their expensive and embarrassing effect upon commerce. Those of Marseilles, and its neighbouring ports, are the most rigorous and oppressive, on account of proximity to the source of plague, and its occasionally devastating visits. There seems to be unquestionable proofs of its introduction in ships, both before and since those restrictions were imposed, but more rarely of late years. This is probably attributable as much to improvement in local and personal cleanliness, and in the comforts of life enjoyed by the people, as to quarantine laws, though the latter have no doubt had some preventive effects.

But, that the existing laws for preventing plague are susceptible of great amelioration, cannot for a moment be questioned. It must ever appear absurd to Americans, and is beginning to be thought so by physicians in the cities referred to, that danger can attend the landing of a healthy person, from a healthy ship, arriving from a healthy port in the Levant, in a healthy season of the year, after divesting his body of clothing brought in the ship, and after cleaning and reinvesting it with new apparel; and yet such an individual is incarcerated at a lazaretto some twenty or more days, and subjected to sundry fumigations and ablutions.

I have assumed it as a fact, that plague is contagious; and this will not be doubted by most of my readers, although many authors have, in their closets, theorized themselves into an opposite belief. And it must be conceded in favour of their opinion, that it does differ from other febrile contagious diseases in many of its laws; such as liability of a person to a second attack—its rise, progress, and termination, being influenced by seasons—and its preference of certain localities. Yet those who have observed it closely for a succession of years, are, with few exceptions, unanimous in pronouncing it decidedly contagious. To use the words of Bancroft, who was attached to the British army when it prevailed, "We could fill volumes with valid and well-attested proofs of the contagious nature of plague." Howard states that every physician in the Levant to whom he submitted written questions, and they were submitted to all residing within the circle of its ravages, reported without an exception that plague was contagious.

Yet in the face of such authority, there are writers, as before observed, who strenuously maintain a contrary opinion; and one

particular, whose zeal in support of it urged him to brave then danger of an exposure to plague in a pest-hospital, where his temerity was within eight days rewarded with a brace of pestilential buboes. Yet, like every obstinate dogmatist who is convinced against his will, he adhered to his hobby with increased pertinacity, and published two portly volumes, evidently written under the excitement of disappointed ambition, and in open violation of reason and common sense. So true is this, that every reader must, without farther light upon the subject, lay down the work with convictions directly the reverse of those which Dr. M'Lean aims to produce.

But if quarantine upon persons in the Mediterranean is unnecessarily rigorous, and susceptible of amelioration in reference to plague, much more so is it in respect to yellow fever; a disease which a vast majority of those who are better acquainted with it, pronounce to be non-contagious.

We might, however, leave foreign sanitary laws to the management of their authors and executive officers, and confine our inquiries to the measures proper for regulating commercial restrictions at home, were it not that the welfare of our commerce in the Mediterranean ports is deeply involved in the administration of our own laws. If yellow fever has been reported to exist in any of our cities, our vessels are forthwith subjected to a quarantine in the ports referred to, so rigorous as sometimes to frustrate the best concerted voyage. This has afforded a plea to the advocates of protracted quarantines in this country for increasing their rigour. They contend, that as the restriction in those parts is graduated in some degree by the system of quarantine that exists in the port from which any vessel has arrived, our commerce would gain more by such abbreviation of it abroad, than it loses by increased duration at home. They cite the example of Great Britain, which, at the suggestion of the Levant company in 1821, mitigated her own system; but was soon compelled to return to it, by reason of the increased restrictions which such mitigation produced in Mediterranean ports. But it should be remembered, that the experiment of Great Britain referred exclusively to the plague—a disease unequivocally contagious, and which could be carried from the Levant to England, and returned to the Mediterranean, before the time of quarantine would expire, to which a vessel having it on board would be subjected, had she remained in that sea. The case would be quite different with an American ship, that has to cross the Atlantic twice, in order to carry into a Mediterranean port a plague that she has previously caught in the Levant. It is fear of yellow fever alone, be it remembered, that affects our commerce abroad; and consequently the experiment of Great Britain is inapplicable. Besides, it is not likely that any attempt to propitiate the favour of foreign health officers, by conceding that this

fever is contagious, will produce much good effect: on the contrary, if convinced that it is not so, an inflexible adherence to that opinion, and avowal of it in the terms of our quarantine system, would do more to awaken candid inquiry, and produce conviction in the minds of foreigners, and consequent removal of the burthensome restrictions complained of, than any concession of the point in controversy.

Unfortunately, however, the persistency and clamour of a few contagionists in our own country, are likely to prolong the existence of these restrictions. Their writings are quoted as high authority by foreigners, whilst such men as Rush, Miller, and a galaxy of living worthies, who have regarded yellow fever as non-contagious, are referred to with doubts and distrust. Nor is this the worst of it; the obtrusive interference of a few contagionists keeps the public mind unsettled in our own country, and fearful of any amelioration that might be proposed in our own quarantine system. So true is this, that although their number is less than one in fifty of the profession generally, yet this small minority virtually control public opinion in respect to quarantine directed against yellow fever, and are able to prevent the enactment of any laws that shall exclude the idea of its being contagious. But more of this hereafter.

In discussing the question, whether our commercial restrictions are useful, it is proper to specify all diseases against the spreading of which they are intended to operate. These are, plague, small-pox, cholera, and pestilential fevers. Remove all danger of importing these, and no restrictions would be tolerated. *Do they prevent these?* In respect to plague, an immunity for two centuries is probably a sufficient guarantee for our future safety. Unconfined in its ravages to the hot season, to which our restrictions are limited, it is hardly possible that these have interposed any barrier to its introduction. There certainly can be no propriety therefore in aiming future restrictions against it, excepting where cases actually exist on board; a thing that has never yet happened in any vessel that has arrived in our ports, and probably never will.

The same may be said of small-pox, which can be imported at any season, and from any part of the world. It exists either in its genuine or modified form in New York and Philadelphia nearly the year round, and any system of quarantine, further than to exclude from cities vessels that have it actually on board, would interrupt all commercial intercourse between our principal maritime cities.

Will quarantine laws prevent the importation of cholera? Experience throughout Europe answers in the negative. *Cordons Sanitaires* and quarantines were instituted in every nation, with no other result than enormous expenses and suffering to nations and communities. If such was their effect where power is despotic,

and means unlimited, what can the feeble arm of a republic accomplish by such measures? Two prominent characteristics of this pestilence are, its pursuing a line of march from east to west, regardless of human barriers; and its preference for the haunts of filth, intemperance, and indigence. Is it said that the first victim upon our shores was a new emigrant? Where, I would ask, could the disease find more ripened subjects for its aliment, than a ship-load of miserable emigrants that lay in its path to this continent?

Its preference for such persons and places was again manifested in the brig Amelia, on her way from New York to New Orleans, crowded with more than a hundred persons. With the predisposition to the disease that existed throughout the United States, and the actual longitude it had made agreeing with that of Charleston, is it any thing remarkable that a boat's crew of wreckers, who boarded said vessel when she stranded upon an island off that city, should be attacked upon going into the hold of said vessel? I would inquire, too, why one of said boat's crew, who returned and died of cholera in the city, did not communicate it to some attendant, and why the physicians who attended at the island, and endured great fatigue among the sick, did not experience an attack? Yet these two cases, of the emigrant at Montreal, and the wreckers on board the Amelia, are the strongest evidence adduced by contagionists in the United States, that quarantines against cholera may be useful; whilst the whole history of its progress, from first to last, in this country, has been decidedly, as elsewhere, against the utility of quarantines.

The before-mentioned list of diseases which call for quarantine restrictions, is reduced then to malignant fevers. By these, I mean the typhus, called hospital, jail, or ship fever, and yellow fever. The former occurs in crowded, filthy, and ill-ventilated apartments, where little or no vegetable decomposition is going on, and which seems therefore to be of animal origin. It probably arises chiefly from perspirable matter, or the product of respiration, aided perhaps by exhalations from the alvine discharges. But it is not in their recent state that these emanations possess such noxious qualities. It is only where they have existed for some time, and by some process, probably chemical, have passed into a state of great virulence. But the morbid action they excite never amounts to a contagious disease—that is, communicable to others, in a pure atmosphere.

I am aware that authors of high distinction tell us that typhus prevails in cold seasons, and yellow fever in summer. But, admitting that there is a winter typhus, be it the epidemic cold plague, or the contagious typhus of Bancroft, or spotted fever, their existence does not prove that persons can with impunity be crowded together in a ship's hold, some of them perhaps already sick, and

unable to take an airing on deck in hot weather. Dupuytren, Larrey, and a host of distinguished hospital surgeons, testify to the production of a low typhus in crowded hospitals in summer, and of its abatement when the number of inmates is diminished. The same effect is more likely to take place in a ship, where hospital regulations in respect to cleanliness do not exist. Such was formerly the mortality from this cause on board transports carrying convicts to New Holland, that in 1799 the number of deaths was as one out of seven; a full proportion of which occurred between the warm latitudes of Gibraltar and the Cape of Good Hope, where great heat prevails. But "within the period since naval surgeons have been appointed to convict ships, and better regulations in regard to ventilation, cleanliness, and crowding adopted, it is considered very unfortunate indeed if two or three deaths occur in a voyage. In 1822, the deaths were as one in 500." [Collins' History of New South Wales, p. 102 and 436.]

The noxious air referred to seems to affect those who are suddenly exposed to it, more certainly than those who, from habit, are gradually acclimated. It seems also capable of attaching itself to clothes, and of rendering them capable of communicating the fever. They may do so even when the person who wears them will, from his gradual acclimation, escape an attack; and this too at some distance from the contaminated apartment. I might cite cases where criminals conveyed from their cells in ordinary health, to a pure atmosphere, for the purpose of consulting their counsel, have imparted to them a malignant jail fever. The reported occurrences at Black Assizes and Old Bailey, known to every one, are of a similar character. But the vitiated air I am considering does not produce a disease that, like small-pox, can reproduce itself in others, or any thing that can be called contagious. A large number of those who were present at Black Assizes, and Old Bailey, took the malignant jail fever from the prisoners, but they did not communicate it to others.

The quarantine laws of New York wisely specify in reference to danger arising from crowded ships, that "all vessels from foreign ports, having on board forty or more passengers, may be quarantined, if arriving within particular periods, in any year.* Passengers under this law are prevented from carrying the cause of typhus into a city, as the prisoners did from the jail to Black Assizes. All experience, however, proves that the time necessary for ventilation is very short, and it is very probable that, so far as

* And it is moreover enacted, that "whenever it shall appear to the Board of Health, that any provisions of this chapter *limited in their operation to a certain period of the year*, ought to be extended, the Mayor of the city shall issue his proclamation, *extending such provisions to such time* as shall be mentioned in the proclamation; and such provisions shall thereupon be extended accordingly, and with the like effect as if the periods mentioned in the proclamation had been enacted in this chapter." Title 5th, of chap. 14, of the Revised Statutes.

persons and clothing are concerned, soap and water, which are probably the best disinfectants, will, in a day or two at farthest, obviate all danger of importing this kind of fever.

From the foregoing remarks it appears, 1. That, in respect to plague, which causes the most burdensome restrictions in the south of Europe, quarantines are not required in this country. 2. That the existence of small-pox, or varioloid, in any port from which a vessel arrives, is with propriety no longer deemed a sufficient cause for excluding her from the wharves of any city, excepting where cases of it actually exist on board. 3. That the cholera has shewn utter defiance to all quarantines; and, 4. That ship, or jail fever, demands them for no longer time than is necessary for cleansing and ventilating.

The only disease then that remains to be considered is yellow fever, which has done more to establish and prolong burdensome sanitary laws in the United States, than all other diseases besides. The propriety of mitigating the severity of these, in reference to this fever, demands more particular consideration, and will occupy the remainder of this paper.

Description and Directions for Papietie Harbour, *North-West side of Tahiti. By Mr. W. Forbes, R.N.*

This harbour ought not, except in case of necessity, to be attempted by a stranger without a pilot. It affords good shelter at all seasons, and the anchorage is good throughout in ten or twelve fathoms, clay ground. The best anchorage will be found with the following bearings:—the flagstaff on the Island of Moduda W. by N., and a remarkable high peak over the town, bearing S. 44° E. in twelve fathoms.

There are two channels leading into the harbour, but that in the direction of Papawa is intricate, and only taken advantage of by the pilot with light and favourable winds.

The leading mark through the other channel is a valley (thickly wooded, and to the westward of Papietie about half a mile,) bearing S. by E., you will then have the entrance through the reef open. It is about one and a half cable's length wide; there being no other opening within two miles of this, it cannot easily be mistaken. Steer in S. by E. until you distinguish a hill of red mould near the beach. This hill will appear on the centre of the valley, and at the same time a small clump of trees on the summit of a conical hill will appear above it. There is deep water between the reefs, and after entering them you will see all the dangers in the harbour. When the flagstaff on Moduda bears about N.E. by N., you may haul up to the eastward for the upper part of the harbour, which is the best anchorage. The coral patches and also the south shore are bold to.

In this harbour you will seldom find it requisite to moor, except during the months of March and April, at which time the weather in the vicinity of these islands is occasionally tempestuous, and the winds from N.N.W., which are the worst that can blow into this harbour.

The supplies to be had here are wood, water, fresh meat, hogs, yams, and fruit.

The latitude of the flagstaff on the Island of Moduda is in 17° 30′ 25″ S. and longitude 149° 35′ 45″ W.

Here the tides ebb and flow every twelve hours, it being high water always about 12 o'clock; the rise, between three and four feet.

Papietie, May 10th, 1835.

ERICSSON'S LEAD.

WE have much satisfaction in adding the following letter to the report of Lieut. Bisson, on the qualities of this valuable instrument, which we have no doubt will soon find its way into use. The longitudes referred to by Lieut. Bisson are those, a part of which appear in the abstract at page 668 of our last number. ED. N.M.

H.M. Brig Partridge, Plymouth, October 11, 1836.

Sir,—Agreeable to your request, expressed in Mr. Becher's letter of the 8th instant, I beg leave to acquaint you that the longitudes referred to were obtained by means of a well-regulated chronometer, (Earnshaw, 815, which I received from Mr. Cox for the purpose,) and which was found correct in its rate upon our return. Sights were taken morning and evening, and the intermediate hours worked up from observation to observation; the latitude was by meridian altitude of the sun, which we obtained every day; the line used was a regularly-measured deep-sea line, (which was frequently tried along the deck,) except in very deep water, when white line (2 inch) was used, spun for the purpose at Plymouth dockyard. I was very particular also in testing the instrument by means of a measured wire which Mr. Ericsson had on board, and nothing could be more exact; and I tried it at the same time with the old deep-sea lead, (after I became convinced of its correctness,) to see how much our old method of sounding erred. The pilot, and other experienced persons, were ordered to take casts in about seventy or eighty fathoms, and report exactly the soundings; but they never came nearer than two fathoms, and often four or five, according to the drift of the brig. It was quite evident that the arbitrary method of judging for stray line, and single fathoms, upon a line marked to five fathoms, was entirely obviated by this instrument. And, with regard to its simplicity, I must observe, that after the first day its use was familiar to every one on board;

and certainly, as regards any thing hitherto discovered in the sounding way, I do not think I could make too strong a report of its utility.

I am, Sir, your obedient servant,
PHILIP BISSON, Lieut. and Commander.

To Capt. Beaufort, Hydrographer,
&c. &c. Admiralty.

ADVENTURES ON SHORE AND AFLOAT.—BEN THE SAILOR.

No. II.

HAVING not a little entertained the family at Barton-Hall, by giving an account of the adventure with my namesake, Ben the Sailor, the Counsellor requested I would let him go with me next day to call on Bradford. I was not a little surprised at the neatness of his farm, and more so still by the size of his dwelling-house: in that not only comforts abounded, but gentility reigned. As we entered the hall we heard the sound of a piano, and, on opening the parlour-door, caught a glimpse of a lovely girl about sixteen, who made a speedy retreat at our approach, but returned afterwards, with her mother, on being sent for by our host, who ordered a luncheon to be instantly got ready for us. A fine young man about nineteen, Ben's eldest son, joined our party shortly after we sat down to table, and we saw two others playing with a spaniel on the lawn. These persons constituted Bradford's family; a lovely one in truth. The smile which illuminated his own manly countenance was an emanation of his heart's joy, at perceiving our admiration of his household; for we could not conceal our surprise at finding such inmates, and such an establishment, under the command of the ci-devant captain of the forecastle. Mrs. Bradford was still handsome, and perfectly genteel, having been educated by some rich relations; her polite manners she had imparted to her children, as well as her beauty; but they had a share of the father's frankness, with a spice of his drollery, especially the daughter.

Ben, who evidently was extremely proud of her, told me, in a half whisper, Fan was a special lively craft; and being determined to draw her out, contrived to make her tell some stories which gave ample scope for comic humour. Counsellor George, a wit himself, was so enraptured with Fanny, that he could talk of nothing else but her bright talents and bewitching beauty, on our way home to the Hall; and when the squire demanded how we had found the Bradfords? "Found them, sir," said George, "why, like pearls upon a dunghill! What a sensation would that lovely girl create in town? I have not seen her equal at the most brilliant soirées of the season."

Our eulogiums upon Ben and his family, determined Squire Barton and his sister to call upon them, and subsequently to invite them to the Hall. On which occasion Bradford came rigged out in regular long togs, with black silks, and dress pumps; not only looking perfectly genteel, but, except when walking, having the bearing of a fine old admiral. "Bless me," said the squire, "is this the bluff farmer from whom I bought a cow at the mid-summer fair, dressed something like a miller, with a fustian jacket and white broad-brimmed hat?"

"Do you mean the cow?"

"No, Mr. Wag, I mean the man. I thought him a small farmer then, but he looks big enough now, with his black tights and velvet waistcoat.

Squire Barton having only recently come into the possession of his present property, knew very little about his neighbours, especially Bradford, who had been absent with his wife to bring their eldest daughter home from school. He was now equally pleased and amused by the quaint humour and frank disposition of the veteran, who, after dinner, was prevailed on to repeat his story, which he did with little variation up to the point where he left the hospital, almost a cripple, and a pauper quite.

"Well, now, Mr. Bradford, you told us how you went away stumpy; next let us hear how stumpy came to you," said the squire.

"Well, sir, the day when I went out of Lazaretto dock, where I had undergone such lots of doctering, I found myself like a gun, elevated to the highest pitch."

"Elevated! why, Bradford, that's a riddle. I suppose, however, your spirits were high; but you sailors have cant phrases landsmen can't comprehend."

"True, Squire, and you are far from being up to my similitude, for if my muzzle was up, it was with praying for assistance, and my spirits were low, because, like the gun pointed up, I felt the want of the coin."

"Oh, you round-about fellow, your funds were sunk to a low pitch, you mean to insinuate."

"Yes, and my prospects were dark as pitch into the bargain. Well, after walking some time on the quays, I sat down on a log of timber to examine my funds, and overhaul my affairs. Out I lugged my purse; that was light work, but I did it with a heavy heart. I now had only five and sixpence left; when that went, and soon it must go, where could I look for more? There were no arrears in pay to hope for; I had been paying away in harbour far too merrily for that, not harbouring a thought of the misfortunes which awaited me, like an enemy's fleet hove-to, while the prize is dropping down, without perceiving it, right into the thick of them. A Jew, who had advanced me cash and goods, would

sack my wages and prize-money, which I had some pains to make him buy for thirty shillings, though, two months after, he got thirty guineas for it! This he allowed vash nat bad interesh; but dem ash lends deir monish to a shailor runsh confounded rishks of loshing it. Some brother tars owed me a few pounds, and I knew they would pay me some day, but I could not tell exactly when. I had no relations at hand to ask help from. My father having been reduced by unforeseen calamities, had taken my two younger brothers and my sisters, in his old age, to Upper Canada, where he died shortly after. Some officers with whom I had once served promised, whenever I had qualified myself to act as gunner, or as boatswain, that they would take immediate steps to get me warranted: but there was no chance of that, I'll warrant you; lameness disqualified me for those stations, and for any other, except that of cook; but for that I had no appetite; of such a slushy place, the bare thoughts made me feel as squeamish as if I was hob-nobbing train-oil with an Esquimaux.

"Now, I confess this was too saucy, for many a primer A. B. than myself is doing duty in that situation, which, in a line-of-battle ship, they say is more profitable than even that of Nip the purser. Another thought occurred to me likewise, which was, that I was not damaged enough to claim that berth, suited for some one-handed Billy, or dot-and-go-one cripple with a timber-toe. I had the same idea about Greenwich, being certain many a fitter object than myself, stuck fast in the mud of adversity, was waiting for such a rising in the tide of good-luck as might float him in.

"After ruminating on my situation many hours, it came at last into my head that I per-chance might get employed to work as sail-maker in some king's dock-yard; I had assisted very often in that capacity afloat, and henceforth thought in that line I could earn my bread on shore, as a lame foot would not prevent the free use of my hands. In the mean time, finding my teeth required immediate work, I toddled off to an inferior sort of inn, not altogether so good as a tavern, and not quite so bad as a public-house. While I amused my mouth with some pork chops, the mouths of those around amused my ears with comic songs and funny stories. Few places in the world, I fancy, abound so much in odd chaps as the fire-side seats of Yorkshire inns.

"In the huge kitchen where I sat there were at least a dozen others, many of whom were queer fellows, up to all kinds of gammon, except gammoning the bowsprit lads of the turf and cock-pit, barring that of a man-of-war; and although they knew nothing about rigging yards and masts, the thimble-rig I found was at the fingers' ends of one and all. They offered bets with every one about the merest trifles, and tried continually to introduce some kind of pettifogging gambling. I saw how fully resolved they

seemed to dupe myself, and a few others, whose dialect proved they were not so far north as themselves; but one of these southerns, Daddy Norris, was quite shrewd enough to cope with the whole gang; indeed he often turned the laugh against the Yorkshire kiddies in a manner which surprised us.

An Irish serjeant told us a story of some gentleman in Cork, who had been finely tricked some time past by a beggar. As he was riding up the street where he desired to pay a visit, the mumper made a set at him, and begged so sturdily he could not shake him off. Well, thought the cavalier, I'll make this ragamuffin act the part of squire; I'll kill two birds with one stone; if I bestow a tester on the chap, I'll make him earn it by the holding of my horse. On this, alighting, he cries, 'Old fellow, take the bridle.' 'And by my soul I will,' said he, taking the greenhorn at his word; just as the housemaid did her mistress about making a *shift* with *one sheet*, which the girl cut up, cut out, and sewed into a smock accordingly. Well, when the owner of the nag had paid his visit, out he comes to pay the horse-holder, when, what should he hear, but a horse-laugh, and see, but his horse standing quietly without a bridle. 'Och, then,' said Master Billy, 'here's a pretty go; my bridle's gone, that cost me five and twenty shillings. Then was not I a proper noody man to trust the likes of that ould roffin? I'm diddled dacently! Och, if I catch him, he shant bridle my wrath until I give him a good leathering, and maybe I'll get the fitting of a halter yet about his neck, the varmint!'

"We were much entertained by the serjeant, and some of his recruits; and two of these were Irish, chaps just of a kidney with their officer. One went by the name of Paddy the Fishmonger, on account of a love adventure he had with a rich Billingsgate heiress, who would not be coaxed into matrimony, and gave him the turn-out in spite of all his blarney. The serjeant sung us a song upon this subject, to the tune of 'Paddy Whack,' which a wag about town composed on that occasion, to introduce it in a comic afterpiece.

"PADDY THE FISHMONGER.

"Being born in the land of say-weeds and salt-water,
From a child, fish was always my favourite mate;
So I thought if I married a fishmonger's daughter,
Of that same I should always get plenty to ate.

Molly Rae was a maiden—a fair one, God wot!
'Twas reported she'd go off a five-thousand pounder!
I expected her dibbs, but such queer dabs I got,
That, confound her, she laid me as flat as a flounder.

Then, while sprawling and bawling, I laid on the ground,
I began to repent of my rash undertaking,
And believ'd 'twas high time to be off, when I found
What a kettle-of-fish I had made of love-making.

Molly cried, you wish'd me to take bait—I bate you;
And 'tis clear, as boil'd mackerels serv'd up with fennel,
You have got a fine place for your pains; but 'tis true
It happens to be on your back, in the kennel!

As Rae carp'd at me thus, I was ready to cry;
All the young fry of Billingsgate, too, ran queer rigs,
And the scaly ould fish-fags, that laughing stood by,
At poor Paddy's disaster were merry as grigs.

Then, three two-fisted-stags to man-handle me voted;
Two laid hold of my shoulders, and one of my hip;
But my jacket, by good luck, with mud being coated,
Like an eel, through their fingers I managed to slip.

"Paddy took all the laughing the serjeant raised at his expense in good part; for, 'sure,' said he, 'why should I be quarrelling with my superior officer for a few jokes, and he promising to get me made a corporal in less than no time.'

"The next day came, and I was fairly adrift as to what I should do. So I went strolling about the quays, lamenting my hard fate, and envying every able-bodied sailor I saw squaring the ratlins, or heaving at the windlasses of ships in dock. Two men who passed me, turning their heads round, cried, 'I think that must be him—hilloa, old fellow, is not your name Bradford? Yes, sure enough 'tis Ben; what cheer, my hearty? What, don't you recollect your messmates Smith and Jackson?' 'Do I not? it would not be an easy matter to forget a brace of such queer fellows, although you are rigged out in long-togs, and look as long-shore now as if you were turned into a pair of land-waiters.' 'Well hove and strong,' said Jackson: 'we are no longer seamen; I drive a quill, and that confounded lucky fellow drives a gig, instead of rowing one. Think of his getting spliced to a young widow who drives on a roaring trade of haberdashery. Dash my old wig if I don't wish I could get such another, instead of being clerk's mate's minister to a curmudgeonly old timber merchant. Smash my top timbers, is not this too bad? However, it is better than being a middy turned before the mast, as I was when the captain got you to take me into your mess, to make a sailor of me, and reform my manners.' 'Ah, Jackson, you got harshly treated from being accused of misdemeanours of which neither you nor your fellow-sufferer Smith were guilty; but, to speak the truth, you were too wild, too inattentive, and insubordinate for your station, and your friends did well to get you discharged from the service.' When I made Smith acquainted with all I had gone through, and how

embarrassed I was in my circumstances, he not only insisted upon lending me some money, but invited me to come and live with him until I could find out some means either of getting employment in the way I proposed, or could go to join my relatives in Canada; but an extraordinary change in my affairs took place immediately.

DIRECTIONS FOR PORT-AU-PRINCE. *By Mr. George Peacock, late Acting Master of H.M.S. Hyacinth.*

VESSELS bound to Port-au-Prince should endeavour to get hold of the northern shore of the bay, for with the land and sea-breezes they will be enabled to get up to Port St. Mark, and from thence to Petit Lamentin much more readily than by beating up along the south side of Gonave. In the latter channel a strong lee current runs. Having advanced to Cape St. Mark, (to the northward of Arcadias, a point resembling a small low island,) a south-east course seven leagues will carry them to the Arcadias, which are low keys, having good anchorage inside of them, pass about two miles from them, or with the land-wind they may pass inside of them, and steer S.E. ½ E. six leagues for Point Lamentin, which may be easily known from its having a fine green patch of land immediately over it. Having proceeded 12 or 14 miles, four keys will be seen on the larboard hand; give them a berth of at least four miles, a coral reef extending from them to the southward, upwards of three miles, nearly level with the water, and steep to. His Majesty's Sloop Hyacinth grounded on its outer extremity on the evening of the 25th of August, 1831, having shoaled suddenly from 15 to 9 and 5 fathoms, and the helm being put a port before her head altered two points, she struck with 9 feet under the bows: by keeping Lamentin Point to the eastward of S.E. you will be sure to avoid it; you may anchor off this point in 13 fathoms; bringing it to bear S.W. or W.S.W.; half a mile off from hence or E. by S. course 4½ miles will take you to the outer anchorage, where the bottom is excellent in 10 fathoms. Outer Fort, or Fort Isle, bearing E., Point Lamentin W. and Outer Key N.W. by N. the town of Port-au-Prince will be open between the keys. In turning up to the anchorage, there are two dangerous reefs to be avoided on the larboard hand; but as they always shew themselves by the colour of the water, and are steep to, you may stand towards them without fear.

Latitude of the anchorage . . .	18° 33′ 30″ N.
Longitude	72° 17′ 17″ W.

To the Editor of the Nautical Magazine.

SIR,—A short time since, being much interested by the account given in Anson's Voyage, of the famous flying proa, I constructed

a small model, as an experiment, in exact conformity with that description; but, no sooner was my little craft put to the trial, than two serious difficulties presented themselves, which, in the hope that some of your nautical correspondents may be able to give me a lift, I here proceed to state. In the first place, my proa, in consequence of her great length and sharpness, was, by a sudden puff, fairly capsized head-over-heels, her bows being driven under water; and, having temporarily remedied this, by trimming the ballast more aft, and giving a a greater rake to her lateen yard, I found that the log attached to the outrigger, to windward, formed such a weather-drag, as to keep her sail perpetually shaking in the wind; this, also, I managed to counteract, by shifting the step of the mast a considerably distance to windward, upon the framework of the outrigger, by which means I at length succeeded in making a steady course, and, this point being attained, her performance was, indeed, well worthy of her name. Her speed may be judged of from the fact, that, though of no greater length than 36 inches by 12 inches, beam and all,* her stem, on striking the bank of the piece of water on which she was sailed, was buried to the depth of an inch in the mould. However, as in Anson's description, the mast appears to be stepped in the body of the proa, and, as in practice, the ballast cannot be shifted fore and aft at every tack,† when in these craft, the head is made the stern, and vice versa, both ends being formed alike. I should be glad to be informed how these difficulties are actually got over, especially the former, viz. want of *buoyancy at the head*, which appears indispensable to encountering the rough waters, which, though apparently so unfitted for, they must go through; for, in another chapter of the work I have cited, I find that the author, on these very waters, was "in dreadful apprehensions of being pooped, though in a sixty-gun ship." How these vessels, being undecked, can be kept afloat, in such a sea, is to me an enigma.

PHILO-NAUTICUS.

SHOOTING STARS.

[From the pen of M. Arago, in the Annuaire of 1836.]

IF the reader will refer to page 429 of our third volume, he will find a sketch of the first of the appearances here alluded to, with an account of their being seen in the West Indies at the time.

These phenomena, which have often been considered unworthy of investigation, and regarded simply as atmospheric meteors, originating in the inflammation of a quantity of hydrogen gas,

* The body of the boat was 1½ inch across only.

† Strictly speaking, the proa does not tack, but I have here used the expression to denote the operation of changing her course in going to windward.

have, in consequence of recent observations, become objects of greater attention among men of science. Previous theories limited their place in the heavens to our own atmosphere; but from observations made at Breslau, and other places, by Professor Brandes, and several of his pupils, the height of some shooting stars has been calculated at 500 English miles; and the rate at which they move not less than thirty-six miles in a second, which is nearly double the rate of the earth's motion round the sun. If a reduction be made to one-half of this rate per second, in order to allow for the illusion occasioned by the motion of the earth, the real motion would be eighteen miles per second, which, with the exception of the earth, would still be more rapid than that of any of the principal bodies of our system. In the attempts which have been made to ascertain the apparent direction in which shooting stars usually move, it has been ascertained, that although they become ignited in our atmosphere, they come from beyond it. It is singular that their general direction should be contrary to that in which the earth moves in its annual orbit; and it is much to be desired that the inferences already deduced should be corrected or confirmed by a greater number of observations. We think that the officers of the watch on board the Bonite,* should be invited, during their voyage of discovery, to note the hour of the appearance of each shooting star, its angular height above the horizon, and especially the direction in which it moves. In referring these meteors to the principal stars of the constellations which they traverse, the different questions here raised can be easily settled.

The means of accounting for the extraordinary appearance of luminous projectiles observed in America in the night of November 12th and 13th, 1833, are not very satisfactory, unless it be assumed that, besides the planetary bodies which revolve round the sun, there are myriads of smaller bodies which only become visible at the moment when they come within our atmosphere, and assume a meteoric appearance; and that these asteroïdes (to use the term which Herschel formerly applied to Ceres, Pallas, Juno, and Vesta) move in groups; and that they move singly also. A careful observation of shooting stars is the only means of enlightening us on this curious subject.

The shooting stars in America, to which allusion has been made, were observed in 1833. They succeeded each other at such short intervals that it was impossible to count them; and the most moderate calculations fixed their number at *hundreds of thousands.* They were so numerous, and shewed themselves in so many quarters of the heavens at the same time, that the attempts to estimate them were only rough guesses. At the Observatory at Boston, their number was considered to equal one-half of the flakes which

* A French vessel on a voyage of discovery.

fill the air in an ordinary fall of snow. When their numbers were diminishing, 650 stars were counted in fifteen minutes, in a circumscribed part of the heavens, which did not comprise a tenth part of the visible horizon; and these did not amount to more than two-thirds of the whole number seen, which was at least 866; and if the whole hemisphere could have been surveyed by one observer, the number seen would have been 8660, or 36,640 per hour. As the phenomena continued more than seven hours, the number of shooting stars visible at Boston was upwards of 240,000; and it should be recollected that the basis of this calculation was taken when the intensity of the phenomenon was diminishing. It was visible along the whole of the eastern coast of North America, from the Gulf of Mexico to Halifax, from nine o'clock in the evening to sunrise, and in some places in full daylight, at eight o'clock in the morning. All these meteors came from the same point of the heavens, viz. γ of Leo; and those which were seen elsewhere was the effect of the earth's movement, which caused an apparent alteration in the position of this star. The above facts are certainly very curious, but the following are not less so:—

The shooting stars observed in the United States appeared in the night of the 12th and 13th of November. In 1799 a similar phenomenon was observed in America by M. de Humboldt, in Greenland by the Moravian Brethren, and in Germany by various individuals; and the period of its appearance was also the night of the 12th and 13th of November. In 1832, in Europe, and some parts of Asia, the phenomenon was witnessed; and the date was still the night of the 12th and 13th of November. This identity of dates induces us to urge upon our young seamen the task of observing with attention the appearances in the firmament between the 10th and 15th of November. Since my report has been read to the Academy, M. Berard, one of the most intelligent officers of the French marine, has favoured me with the subjoined extract from the journal of the brig Loiret, which he commands:—"The 13th of November, 1831, at four o'clock in the morning, the sky being perfectly cloudless, and a copious dew falling, we have seen a number of shooting stars, and luminous meteors of great dimensions. During upwards of three hours, more than two per minute were seen. One of these meteors, which appeared in the zenith, left an immense train from east to west, like a luminous band; and in it many of the colours of the rainbow were distinctly visible; its breadth was equal to one-half of the moon's diameter, and the light which it gave did not disappear for six minutes. We were on the coast of Spain, near Carthagena."

On the 13th of November, 1835, a large and brilliant meteor fell near Belley, in the department of the Ain, and set fire to a farm-yard. In the same night of the 13th of November, a shooting star, larger and more brilliant than Jupiter, was observed at Lille

by M. Delezenne. It left on its passage a shower of sparks precisely similar to those which follow a sky-rocket.

The facts we have now given, confirm more and more the existence of a zone composed of myriads of small bodies, whose orbits come within the limits of the earth's ecliptic every year between the 11th and 13th of November. This is a new planetary world which begins to open to us. It is almost unnecessary to state how highly important it is to ascertain if other masses of asteroïdes do not come within the earth's ecliptic at other points than that which it reaches about the 12th of November. It is desirable to make observations between the 20th and 24th of April, as well as in November; for in 1803, on the 22d of April, I believe, from one o'clock in the morning until three, shooting stars were seen in all directions in such great numbers, in Virginia and Massachusett's, as to be compared to a shower of sky-rockets. Messier states that on the 17th of June, 1777, towards noon, he saw, in the space of five minutes, a very large number of black globules pass over the sun's disc. Were not these globules also asteroïdes?

MISCELLANEOUS INTELLIGENCE.

On the Aurora Borealis: *by Mr. Herapath.*

On the 18th November last, I had an opportunity of witnessing a brilliant display of this phenomenon, and under such circumstances as I believe have enabled me to discover the cause of such appearances.

About nine o'clock on the evening in question, a heavy and well-defined cloud bounded the north-western horizon. It was surmounted on its upper curved surface by pale phosphoric light, which seemed to radiate from that surface, and occasionally, or in fact frequently, waves, (or as they are usually called "streamers,") flitted from the principal light, proceeding to different distances, but in the same direction, and sometimes passing the zenith. These varied repeatedly in form, magnitude, and solidity, yet they were always so rare, that the stars (which were very bright at the commencement) were visible through their substance. It would have been impossible in the darkness (the aurora furnishing the only light) to form a judgment of the distance or the height of the pale light, or of the streamers proceeding from it; but, after keeping the eye fixed upon it for some time, I observed, that although the cloud seemed immovable, yet that small portions were being constantly detached from it; these were drifted away, and rapidly dissolved, none of them reaching the zenith; and upon a large fragment having been blown off, it was surrounded by the same diffuse light as appeared on the great mass of cloud. Having once seen this, I looked still closer after every fragment, and found that

they all presented the same appearances. As the light declined, the detached portions were dissolved with more difficulty, the air became hazy, and by half-past ten all was gone, the atmosphere being cloudy.

It was evident, then, that the cause of the aurora was something that attended upon water, as found in clouds, and that it was evolved during the solution of that water in air. The cloud itself was clearly electrical, being of the nimbus variety, and in the midst of the streamers; I twice perceived a short, faint-blue electrical spark, just as I have seen when imitating the aurora in a partially exhausted flask, when the electrical spark happened to be a little too strong. There is a very strong probability therefore, that aurora is merely *electricity passing off from a charged cloud, in the act of dissolving in air, that can take its water, but not its electrical fluid*, which fluid, while dispersing through a rare atmosphere, becomes evident to the eye. Upon this notion, it will be easy to account for the phenomenon of Nov. 18th. The cloud, fully charged, was slowly rising into a dry rapid current of charged air; the dry wind carried from the north-west the upper portions of cloud as they rose, dissolving them, but as it had no affinity for its electrical fluid, it was constrained to diffuse itself, which at that elevation would not take place in sparks, unless where the moisture was dissolved faster than the air could transmit it, when a small spark was the consequence in that particular locality.

It may be said that this hypothesis will not account for the statements made by observers, and the calculations founded upon them, which go to shew that the aurora is some tens or hundreds of miles high; but it must be remembered that such calculations have been made upon the assumed fact, that the distant observers have witnessed the same phenomenon; thus, A, at Reading, at such an hour, at a given angle, saw the aurora at the north-west; B, in Bristol, saw the same appearance at a given angle in the same direction; therefore, say they, the base-line being so many miles, the given angles would prove the aurora to be at a certain number of miles altitude; whereas, if each observer saw a different cloud performing the same operation, as I believe they did, then the calculation is worth nothing.

If my hypothesis is correct, it will follow—

That the aurora will never be seen in foggy weather, nor in a damp state of the air, unless the state of the atmosphere above the cloud is much drier than that near the surface of the earth.

That it will most probably occur when a detached electrical cloud is in the lower, and a dry and similarly electrified stratum of air in the upper regions.

That, as the northern winds of this island are the driest, so it must be in that quarter that the aurora will most be seen.

That it will rarely be visible to a spectator who is northward of

he cloud, or under it, as the mass of the cloud will intercept his view; that it will not appear in the day, or in a bright moon-light, because it would be overpowered by a superior light.

That the magnetic needle should be disturbed during the aurora, as free electricity is diffusing itself.

As it will require more observations to confirm or refute this hypothesis, I hope meteorologists will direct their attention to it; and I think it right to state, that I have twice since had an opportunity of witnessing an inferior display, and that the appearances were in strict conformity to the principles here laid down.

Old Park, Bristol, Aug. 22 1836.

Records of Wrecks.

"The spoils of the ocean, the playthings of the storm."

THE MEDUSA.—Extract of a letter from a merchant at the Havana, to a gentleman at Portsmouth, dated 6th September last:—

"During my long residence in this city, I scarcely, if ever, remember a shipwreck more disastrous and afflicting in its consequences than one which has occurred a few days previous to my writing, upon our coast, about fifteen leagues to the eastward, and which has caused a very considerable and painful sensation here, as I have no doubt it has at several ports at the west end of the island of Jamaica. In consequence of some of the survivors of the ill-fated vessel being at present in our city, with whom I have conversed respecting the melancholy catastrophe, I am enabled to state particulars that may be relied on.

It appears that on the 24th of August, the Medusa, a fine barque of three hundred and twenty tons burden, commanded by Capt. James O'Neil, sailed from Port Morant, at the east side of Jamaica, for Kinsale, in Ireland; her cargo consisted of rum, sugar, indigo, pimento, and cedar; she embarked eleven cabin and eight steerage passengers, the former of whom were families of great respectability; she was manned with a crew of sixteen good hands, independent of the captain and mates. It was first the intention of Captain O'Neil to go home by the windward passage, between St. Domingo and Margaretta, and for several days the Medusa was beating to windward to effect her purpose; but owing to strong north-east gales which prevail in these latitudes at this season of the year, he was unable to proceed, and when distant about six leagues from Cape Tiberon, the westernmost point of St. Domingo, he bore up, and resolved to go the leeward passage through the Gulf of Florida, and by the banks

of Newfoundland. In the vessel's passage to the eastward of Jamaica she encountered very tremendous weather, and the captain endeavoured either to make Port Royal, or Bluefields, but was unable.

On the night of the first of September the Medusa passed a large merchant vessel totally dismasted, but from the heavy sea that was running at the time they were unable to speak each other. The distressed vessel fired signals of distress. On the morning of the 2d September, no traces of her were to be seen from the top-gallant-mastheads of the Medusa, who was still going before the wind at 13 knots, under a close-reefed foresail and mizen staysail. At this time Montego-bay was to leeward considerably, and before darkness on the 2d, the land of the Grand Caymans was discerned through the thick haze. At this time the weather had increased to a hurricane, and the Medusa laid-to with her head to the wind, under two storm trysails, with her topgallant-masts struck. During the night of the 2d, the most intense anxiety and fearful apprehensions prevailed on board. Captain O'Neil not having a thorough knowledge of this passage greatly dreaded the Grand Cayman, the land of which is so remarkably low that it cannot be seen until close upon it. Under all the critical circumstances the captain found himself in, he thought it advisable to put the ship before the wind, and bear up for this port. At midnight, on the second of September, land was discovered on the starboard bow. This proved by the charts to be the Isle of Pines, off the west end of our island (Cuba). Considerable consternation took place on board at this discovery, as the land in question laid 'dead to leeward.' The ship was put about with great difficulty, and an offing was eventually gained.

The apprehensions of the crew and passengers were now greatly allayed, as the most lively hopes were entertained that no disaster would occur before day-light, when the situation of the vessel would be known, and steps taken for her safety. The gale continued with unabated fury, accompanied by so heavy a sea, that it was expected the decks would be swept fore and aft. Between two and three o'clock these fears were realized by a heavy sea coming over the lee quarters, disabling the wheel, and carrying away her coops, carpenter's chest, and other things on the poop. A few minutes after, another, of greater magnitude, came over the windward side of the vessel, nearly amidship, the effects of which proved dreadful; the ship's carpenter and cook were carried overboard and perished; with them went the life and jolly-boats, also the caboose, and a number of casks; the whole of the starboard bulwarks were carried away by the same sea; to this was attributed the subsequent loss of the unfortunate vessel, and calamitous results, as the vessel now became unmanageable, and drove bodily to leeward. The captain was aware that the land of

Cuba must lie close to leeward, and all hope of escaping destruction before daylight was now given up.

The scene that followed (as described by one of the survivors,) can only be imagined by those who have been in similar dreadful situations—all was anarchy and horror on board; between three and four o'clock breakers were distinctly discerned on the starboard bow, and now the mere shadow of hope that previously existed fled; all subordination now ceased on board, every one thought of the best expedient to give himself a chance of preservation. Signals of distress were fired, but they were only wasted amidst the tumult of the contending elements. The captain ordered the masts to be cut away, which was done by the few who were sufficiently collected still to obey his orders. This eased the vessel, but she still drove towards the "breakers," the foam of which had an awfully grand appearance. The captain knew the land to be the island of Cuba, but was ignorant on what part of the coast the vessel was driving. Had not the boats been washed over in the sea that was running, they could not have been of any avail in the preservation of human life, as they could not have existed through the heavy surf that was furiously rushing over the breakers.

A little after three o'clock, as near as could be judged, the unfortunate ship struck, her starboard-bow first taking the ground, and immediately afterwards she was thrown upon her beam-ends, the sea making complete breaches over her deck. One universal scene of destruction took place in a few minutes after the first dreadful shock; only four souls of the whole ship's company, crew, and passengers survived, and these wretched men were some of many who lashed themselves to spars, and committed their fates to the waves; they were picked up on the beach shortly after daylight by some Spaniards in a mutilated and exhausted state; three of them were seamen, the fourth a steerage-passenger of the name of Doherty, The vessel struck upon the "Colorados, an extensive reef of rocks, lying about half a mile off the main land. The day after the wreck, more than twenty bodies were washed on the beach, as also a quantity of the cargo; most of the latter became the booty of the Spaniards on that part of the coast. The cabin passengers consisted of Mr. and Mrs. Urquhart and daughter, Mr. M'Lean, Mr. Murray, and two sons (youths), Mr. Oblara, Mr. Farrel, and two other gentlemen, whose names I have not been able to ascertain. On the night of the fatal wreck, the Pomona, Captain Douglas, heard signals of distress, when near Cape Corrientes; but from the state of the weather, she was unable to render assistance. She was from Jamaica, and bound to Glasgow. The four survivors are still here. Doherty is not expected to live. I have not heard to whom the Medusa belonged. She had made three previous voyages to the West Indies."—*Morning Advertiser.*

THE DONCASTER.—The Childe Harold, Capt. Willis, arrived at a late hour this evening from Bombay, whence she sailed on the 8th June, and from the Cape on the 8th Aug.; this ship brings intelligence of the wreck of the barque Doncaster, Capt. Pritchard (which sailed from the Mauritius for London about the 20th June) on the reef of Agulhas, about 70 miles S. E. of the Cape of Good Hope, supposed on the night of Sunday the 17th August, when, sad to relate, every soul on board perished.

By a letter from Samuel Parlby, Esq. to the Hon. Col. Bell, dated Kleine River Valley, July 30th 1836; it appears that the bodies of 19 women and children, and 32 men and boys, were washed on shore, and had been buried. The scene of the calamity is about half a mile to the east of the point on the coast on which the Jessie, Capt. Winter, was lost in 1829. Not a vestige of the hull of the Doncaster remains. A Hottentot of the name of Hans Aventure, who was fishing on the coast, was the first person, it appears, who discovered some of the dead bodies that were washed on shore from the wreck, and from him it was ascertained that the ship had been ten or twelve days standing on and off the shore, before the disaster happened, which must have been on the night of the 17th inst. The vessel was sometimes so near the shore, that the voices of the crew could be clearly heard, but this the residents of that part of the coast say is a common occurrence, when ships in passing Cape L'Agulhas are caught by westerly winds.

The following names were observed on the covers of books and pieces of boxes, which have been picked up:—Hon. Lady Colville, Russell Farm, Hertfordshire, favoured by Mrs. U*** (name obliterated), on the lid of a box; Mary Jane Saunders, on a music book; Miss M. J. E. Saunders, ditto; George Woolly, jun. ditto; Capt. Walker, 99th Regiment, in a book; W. Macready, Esq. Elston, Hertfordshire, favoured by (name obliterated), lid of a box; Robt. Saunders, Esq. South-End, in a book; Robt. Saunders, Esq. Eltham, Kent, present from Mauritius, lid of a box; A. Edwards, 1832, ditto; W. Williams, surgeon on a bottle; P. Dollar, in a book; Quarter-master-sergeant O'Learney, 99th Regiment, on the lid of a chest; W. Hughes, 29th Regt. ditto; A Hooks, Royal Irish Fusileers, No. 155; L. Michael Fearney, sergeant 29th Regt.; Soldiers' caps and buttons of the 87th, 29th, 99th, and Royal Sappers and Miners, &c.—*From the South African Commercial Advertiser, of the 6th August.*

In another letter, dated 1st August, from the Civil Commissioner of Swellendam to his Excellency the Governor, the Commissioner states that the bodies washed on shore were nearly all naked. "Limbs and parts of bodies, which appear to have been 14 or 20 days under water; wearing apparel of all descriptions, and clothing with the regimental buttons of the 29th, 87th, and 99th Regts.

and Royal Artillery and Engineers, all much torn, and bags which have contained sugar, are continually coming on shore. The only clue to the names of the passengers, is a small memorandum book, or journal, a little defaced, which I have reason, from comparison of dates and circumstances, to believe belonged to Dr. Page, of the Royal Artillery, or Engineers, and it is there stated that the passengers were Captain and Mrs. Weir, of the 29th Regt., Lieut. and Mrs. Walker, 99th Regt., Madam Wiehe and her daughter, Mrs. Saunders and family, Serjeant John Reid, of the Royal Sappers and Miners, and 17 invalids."

THE CLARENDON.—During the gale of the 10th and 11th of October, the Clarendon, a West Indiaman, of 350 tons, on her homeward voyage, with a cargo of rum, sugar, eleven passengers, and a crew of seventeen seamen, was driven on shore opposite Blackgang Chine, about six o'clock in the morning of the latter day, and at the fourth sea which struck her went completely to pieces, and of the 28 persons on board, no less than 25 immediately perished! The second mate and two seamen alone escaped the general destruction. As soon as the mate (the officer in command) discovered that the ship could not possibly haul off from the land, he called all the passengers up from below, and assembled them on the poop, such of them as had time lashing themselves on. A person who was on the beach at the time asserts, that the tremendous sea on the top of which she came in threw her up broadside upon the ground within 50 yards of where he stood. The screams of women were at this moment most horrible and heart-rending. The next sea which broke over her washed several overboard from the poop, as did each succeeding one till the fourth, which swept off the whole, tearing away the poop, and turning it overboard in one mass directly upon them. So rapid and complete was her destruction, that those who witnessed it can compare it only to dashing a china bowl against a wall.

At noon the whole scene was truly appalling, the beach for a long distance being strewed with fragments of clothing, male and female, mixed in horrible confusion with the splinters of the wreck, for to splinters were the ship and her contents literally reduced, even boat's oars and other small articles being broken into three or four pieces. The only articles which had at that time been thrown on shore whole, were one puncheon of rum and two large chests strongly clamped with iron; and on the bodies of the sufferers, notwithstanding the very short time they had been in the water, some only from one to three hours, the whole were in a perfect state of nudity, save only one silk stocking, which was not quite washed off the leg of one of the young ladies, and a pair of thick painted trowsers upon one of the seamen, which had withstood the action of the waves. With an alacrity and prompti-

tude which on such occasions has been so eminently conspicuous in the coast guard, the Dennett's rockets were brought down from Atherfield, the men at that station having at daylight discovered the ship in such a situation as convinced them that she must inevitably go on shore. But from the rapidity with which her destruction was accomplished, any attempt to afford the unfortunate sufferers the smallest assistance from the beach was utterly impossible. The whole disappeared from before the spectators like the vanishing of a shadow. On the evening of that fatal day twenty of the bodies had been picked up, and three more on the following day, at the time of the inquest. The following are the names of the unfortunate sufferers who had been found at that period :—

Passengers.—Lieut. Shore, 15th Regiment, aged 42; Mrs. Shore, aged 43, and four daughters, aged 18, 14, and 3 years; Mr. Pemberton, a planter; Miss Pemberton, his daughter; Mr. Sheppard, a planter; Miss Gourley; George Higginbotham, soldier, and servant to Lieut. Shore. Miss Gourley and Mrs. Shore's infant, eight months old, are not yet found.

Seamen—Charles Stephenson, Thos. Johnson, Robert Smith, Joseph Penny, Edward cousins, William Shercock, Edward Rush, William Steward, John Graham, James Perris (black,) Samuel Walker, Richard Hyse.

The evening before the gale came on, the poor creatures were enjoying themselves with music and dancing, rejoicing in the happy prospect of their near approach to home and expectant friends; but, alas! by a few minutes after six the next morning, the whole were mangled corpses :—their ship, their instruments, and themselves dashed to pieces by the fury of the relentless waves. Captain Smith, the brother of Mrs. Shore, lives near Newport, and had just taken a house in the neighbourhood, and purchased horses for her and family, in expectation of their arrival. Thus they actually approached within ten miles of their destination, to meet their unhappy fate. These five have been brought to Newport, and interred in a large vault made to receive them. The soldier and seamen were all interred together in one large grave, but in separate coffins, on Thursday afternoon, in Chale Church Yard, the scene of the misfortune being in that parish.

One of the survivors states, that they made all the lights coming up the channel; that about twelve o'clock on Monday night, they saw the Needle's Light—(this must have been an error, as, soon after four o'clock on Tuesday morning, they became aware of their dangerous situation; it must, therefore, have been the Portland lights they took for it.) The captain felt confident, till a few minutes before she struck, that he should be able to weather Rocken End, the eastern extremity of the bay; but the gale increased to a hurricane, at the same time chopping to the southward, and drove them with tremendous violence on the fatal beach.

The three that were saved leaped overboard within a minute or two after the ship struck, and were carried on to the beach by the waves, and drawn up by a young man of the name of Wheeler, whose daring conduct is beyond all praise. Two or three persons who saw the ship strike, tied a rope round Wheeler's body, and, on the first man being thrown on shore, he rushed down the beach and got hold of him; but the next sea overpowered them both; yet Wheeler bravely held the poor fellow till, with the assistance of the rope from his friends on the beach, he was dragged beyond the reach of the coming wave. The others were saved in a similar manner by this brave fellow, who had a narrow escape himself; for so near was the ship to the shore, that, when the main-mast fell, it was not three yards from the place the receding wave had allowed him for a moment to reach.

THE DUKE OF MARLBOROUGH :—On the 1st of October she rode out a heavy gale at single anchor in Torbay; but during the gale from S.S.W., on the morning of the 11th, she parted her chain-cable at twenty minutes after three o'clock. The captain being on shore ill, the mate, Mr. John Gluvias, then let go the best bower-anchor, and when she brought up she was only a quarter of a mile from the shore. This chain cable, in half an hour, parted also, and she drove broadside on against a precipitous point, under which there are six fathoms of water, and then swung round into a bight, surrounded with cliffs as high as her mast-heads, and nearly perpendicular. Directly the brig struck, the masts (the shrouds of which had previously been cut) fell, and the mate and one seaman having remained on board half an hour after the vessel struck, clung to the cliff. A sea hove the vessel against the cliff and crushed the poor seaman; and the mate, after falling into the brig again, got hold of the cliff a second time, and crawled up, nearly naked, on his hands and knees, and when he saw the place the next day, could hardly believe he had scrambled up it. This fine man-of-war-looking brig, of 200 tons, and mounting six twelve-pounder carronades, struck at four A.M., and at half-past eight was lying a shattered wreck, having nothing but the bowsprit head, and the larboard bulwarks as far as the midships, above water—the after part of the vessel being dissevered, and the deck floating in and out of the wreck with the surging of the waves, while three gallant fellows were upon it, attempting to recover part of the spars, &c. Out of ten people on board, the mate only was saved, and the other nine sunk to their graves. Mr. Putt, the captain, was on shore ill, and of the nine drowned, the bodies of Richard Henry and of John Lie, a Swede, have been recovered. Her cargo was a general one, of great value, not less than £30,000. A quantity of Norwich crape boxes, beat to pieces, were a portion of the spoils cast up by the sea.

THE GULNARE, *Jersey Packet* :—We made Guernsey at daybreak on the 9th Sept., and proceeded on to Jersey, and rounded the point about 12 at noon ; we lost our rudder—the vessel drifted towards the shore ; we had not drifted long, before we found ourselves upon the rocks, and soon afterwards a large hole was stove through the planks of the bottom. We were all hands at the pumps, but the water gained on us ; we managed to keep her afloat until she was on the beach. We had no sooner landed than the deck of the Gulnare was under water. A few of the crew and passengers had previously got possession of the boat, and landed in safety.

It must be observed that the captain (Laurains) did every thing in the most cool and praiseworthy manner for the preservation of the vessel and those on board. We understand that an attempt to raise the Gulnare has failed. There were 36 passengers on board besides 5 of the crew, all of whom were saved. Her wreck has since been sold for the insurers for £8.

THE HANNIBAL :—On the 13th Sept. there was a dreadful tornado in the Dardanelles, and the English mercantile brig Hannibal was upset when it came on, and went down almost instantly. George Smith, a seaman, William Watkin, cabin boy, were the only persons on board who knew how to swim. They jumped overboard, seized a plank, and were saved. The rest of the crew were drowned, and the following is a list of their names :—Thomas Caswell, captain, John Lock, mate, Alexander Hood, William Bagley, John Webster, and Joseph Triden, seamen. Had sail been taken in as the squall was seen to approach, there would not have been the slightest danger. Several other English vessels were driven ashore, but as the tornado did not last more than 20 minutes, they were all got off without serious injury.

THE SOW AND PIGS LIGHT-VESSEL, *Port Jackson*.

THE following important information for seamen has just been received. A light-vessel has been placed on the Sow and Pigs, in 22 feet, (at low springs,) and ¼ cable's length from the N.W. end of the reef. Observe the following directions :—Steer between the heads N.W. by W. (mag.) until the light-vessel bears S.S.W., then steer for it, and leave it on the larboard hand. With a foul wind, enter as before, and on bringing the light-vessel to bear S.W. by S. (mag.), haul up for it. To avoid the rocks off the Inner South Head, keep the light to the south of S.W. by S. More particulars in our next.

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ROYAL NAVY IN COMMISSION.

See Pages 59, 123, 185, 249, 442, 689.

COMMISSIONED OFFICERS IN COMMAND OF HIS MAJESTY'S SHIPS AND VESSELS.

REFERENCE TO NOTICES OF THE DEATHS OF COMMISSIONED AND OTHER OFFICERS OF THE ROYAL NAVY.

NOTICES OF NEW BOOKS.

LIST OF PLATES AND CUTS.

ERRATA.

Page.	Line.	
38	13	From bottom, for " bill in" read " bill on."
	10	....., erase " from 50 tons upwards."
40	13	From top, for " deducted" read " deduced."
42	19	From bottom, for " owner's packets" read " owners' pockets,"
227	4	From beginning of the article, " John Bull" should not have been [placed in brackets.
229	8	From bottom, for " of the interest" read " of interest."
230	4	From top, for " bear" read " leave."
	21	....., for " benefit can arise," read " benefit arises to him."
	26	....., for " in all this" read " by all this."
233	15	....., for " in the river at Bristol," read " in the river, at [Bristol," &c.
	10	From bottom, for " stations" read " sections."
	9	....., for " another" read " other."
	8	....., for " shoes" read " shores."
		Bottom line, for " then these four," &c., read " thus these four," &c.
234	2	From top, for " thus fastened" read " there fastened."
	11	....., for " fitting in" read " filling in."
235	30	....., for " firm" read " fine."
	13	From bottom, for " every day" read " any day."
	12	....., for " then see a man-of-war," read " there see a man- [of-war.
236	6	From top, for " this ship" read " the ship."
243	14	....., for " Basilick" read " Basilisk."
379	31	....., for " attempts" read " attempt."
280	11	....., for " as merit" read " as to merit."
283	5	....., for " timbers" read " timber."
	2	From bottom, for " ship-brokers" read " ship-breakers."
285	7	From top, for " 3s." read "30s."
		Last word in the same paragraph, for " pursuits," read " pursuit."
678	2	From bottom, for "mill, read "mile."
685	18	From top, for "lift" read " silt."
	1	From bottom, for " Sarn" read " Garn."
	2	....., for "Rhin ' read " Rhill.
686	6	....., for "eastward" read "westward."
715		Mean rate of No. 790 in Sept., for +7·30, read +5·69; in Oct., for +7.07, read +7.41; in Nov., for +8.11, read +7.91.

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