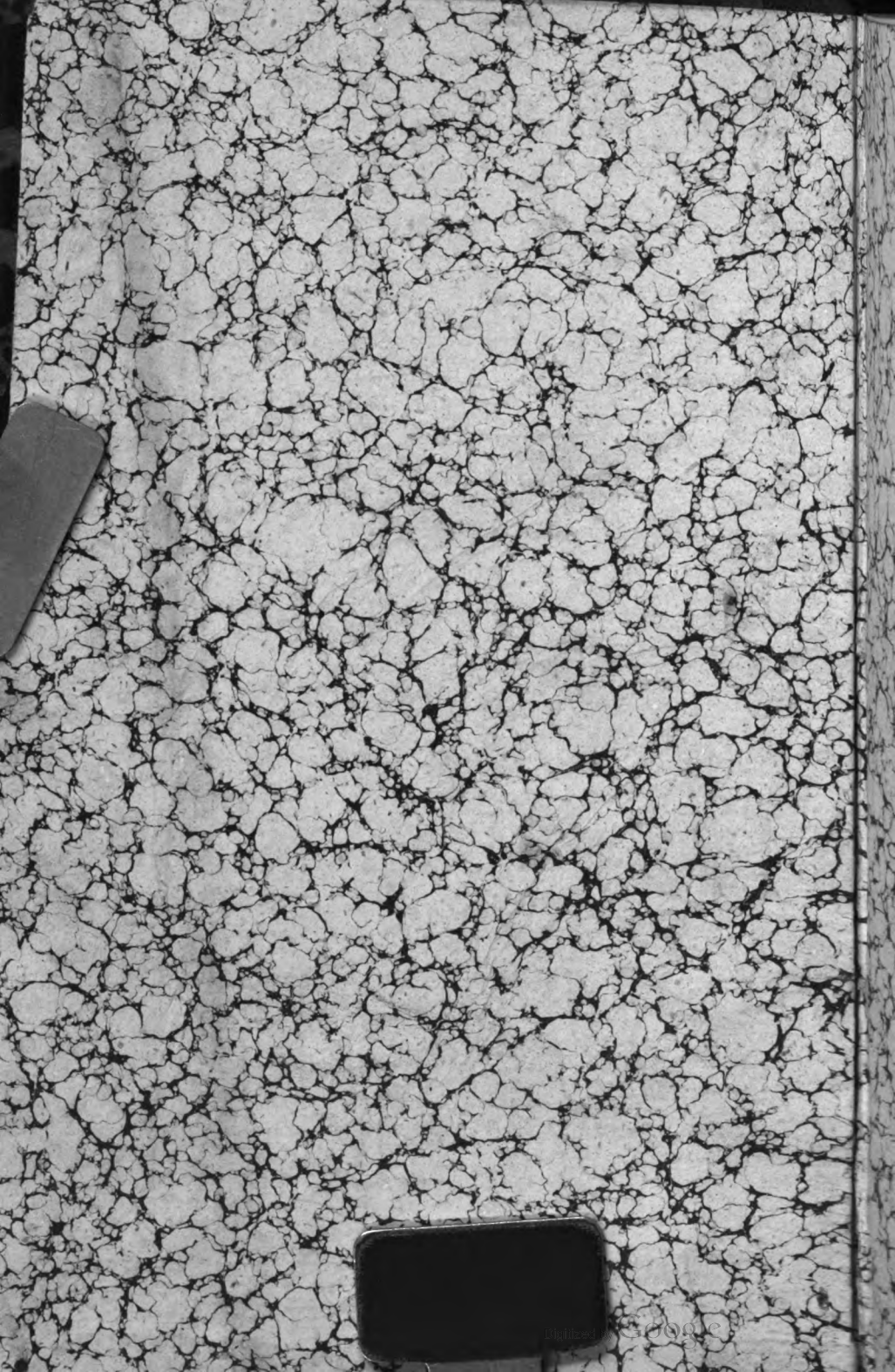

THE

NAUTICAL MAGAZINE.

THE

NAUTICAL MAGAZINE

AND

Naval Chronicle,

FOR 1841.

A JOURNAL OF PAPERS

ON SUBJECTS CONNECTED WITH

MARITIME AFFAIRS.

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ROBERT HENRY HUNT,
ISLINGTON.

CONTENTS OF VOLUME FOR 1841.

ENLARGED SERIES.

Having deepened our water considerably, we tacked and stood into the bay for Acre. As we drew near the latter, found the soundings very irregular, so hauled up north-west for the anchorage off Kaiffa, and shoaled very gradually. From the middle of the bay, we had from twelve to six and a half fathoms, in which we anchored, about three-

PLAN OF THE TOWN AND FORTRESS OF S.T JEAN D'ACRE, BOMBARDED & CAPTURED

BY THE BRITISH AND ALLIED FLEET NOV.R 3.D 1840. By JOS.H CARTWRIGHT BRETTELL, F.R.S.L.

for many Years in the Service of H.H. MOHAMMED ALI, as Engineer in Chief of his Mines.

Observations.

At Noon on the 3.rd of Nov.r the Fleet weighed anchor.— At 2 P.M. stood in.
At 2.h 30.m the Egyptian Colours were hoisted & the first shot was fired at the Castor as She was taking up her position from the Battery in advance of the Half moon, which she & the Benbow immediately returned, & each Ship commenced firing as she came to an Anchor.
At 3 the Action became general.
At 4.h 20.m the principal Egyptian Magazine exploded, by which the Reserve, consisting of 2000 Men of the 2.d Egyptian Regiment of the Line perished; & 50 Donkeys — 20 Camels — 12 Cows, & some Horses were killed.
During the night the Troops evacuated the Town. Adm.l Walker with a party of Turks landed at 3.h 30.m A.M. on the 4.th — Afterwards Marines and Austrians landed.
On the Forts & Ramparts were 121 Guns & 20 Mortars mounted; & 42 Guns ready for mounting.
In store were 97 brass field-pieces — Mortars, Arms, Ammunition, Shot, Shell, Tools &c. &c.
The Hospital was large, in good order; & furnished with Medicines, Surgical Instruments, &c. of the best quality & in great abundance.

COMBINED FLEET.

	British Ships.		
1	Princess Charlotte — Flag Ship	Admiral Sir R. Stopford Commander in Chief — Capt.n Fanshawe	104 Guns
2	Powerful	Commodore Napier	84
3	Thunderer	Capt.n Berkeley	84
4	Bellerophon	Capt.n Austin	80
5	Revenge	Capt.n Waldegrave	76
6	Benbow	Capt.n Stewart	72
7	Edinburgh	Capt.n Henderson	72
	Frigates.		
8	Castor	Capt.n Collier	36
9	Pique	Capt.n Boxer	36
10	Carysfort	Capt.n Martin	26
11	Talbot	Capt.n Codrington	28
	Sloop.		
12	Hazard	Comm.r Hon. C. Elliot	18
	Brig.		
13	Wasp	Capt.n Mansell	16
	War Steamers.		
14	Gorgon	Capt.n Henderson	(84 P.rs) 2 & 4 32 P.rs
15	Phœnix	Comm.r R. Stopford (84 P.r & 68 P.r)	2 & 2 32 P.rs
16	Stromboli	Comm.r W. Williams	(84 P.rs) 2 & 4 32 P.rs
17	Vesuvius	Comm.r Henderson	(84 P.r & 68 P.r) 2 & 2 32 P.rs
	Austrian Ships.		
18	Flag Ship	Rear Adm.l Bandiera	60
19	Frigate	H.R. Highness Arch-Duke Fred.k	46
20	Corvette		20
	Turkish Ships.		
21	Flag Ship	Rear Adm.l Walker	84
22	Cutter	Captured from Egyptians	8

Total Loss.

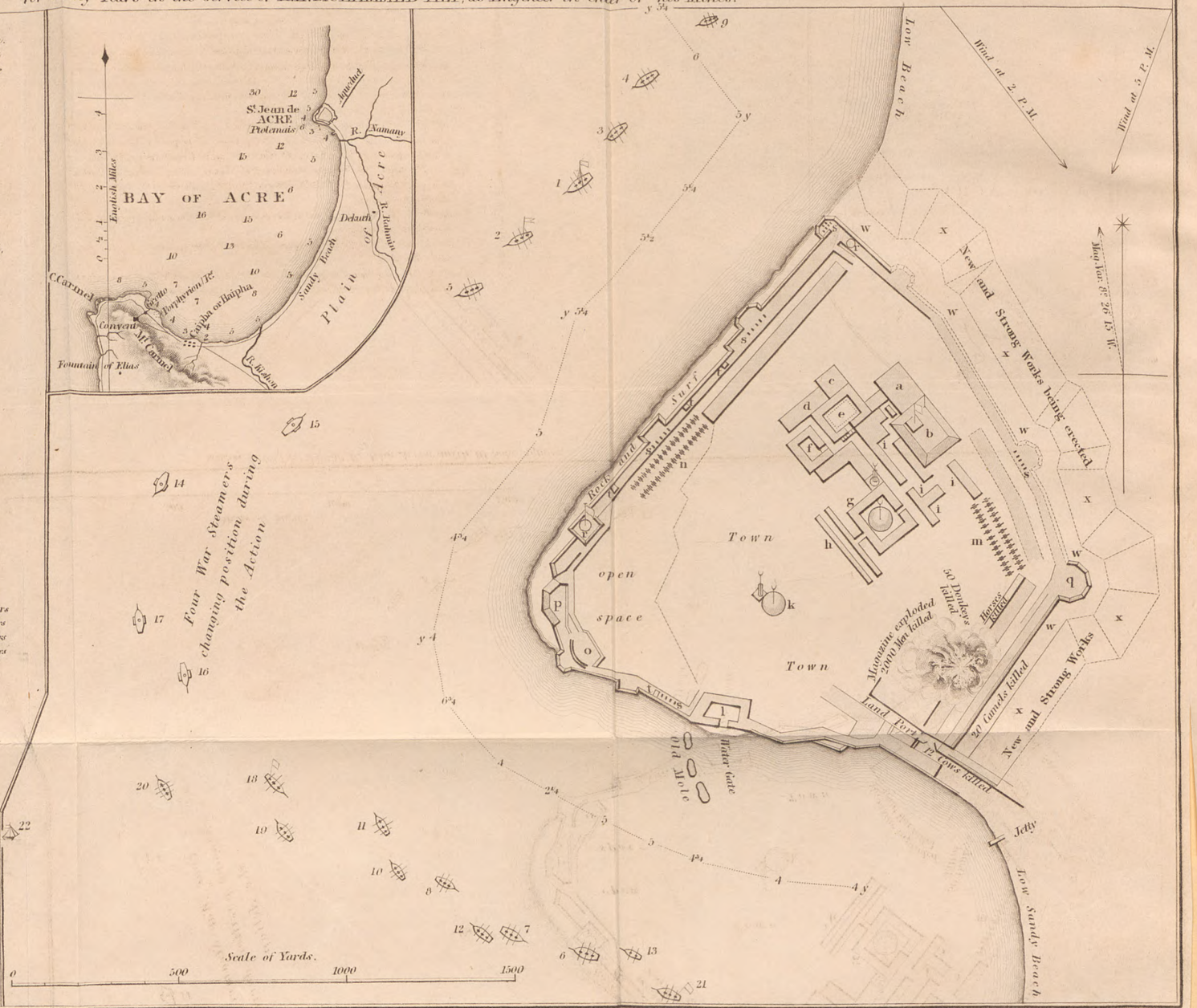
British & Allies — 18 killed — 42 wounded.

Egyptians — 1700 to 2000 killed by explosion; 300 killed on the Ramparts, &c. — N.o of wounded unknown.

Prisoners — 3000 including those taken in the Town & those who returned & surrendered on the 4.th

Reference.

a. Harem. b. Castle. c. Harem in the time of Abdallah Pacha. d. Governor's Divan.
e. Hospital. f. Accountant General's Divan. g. Mosque of Ahmed Gezzar Pacha.
h. Bazaar. i.i. Stores. k. Mosque. l. Fortified Khan. m. 45 brass field pieces.
n. 47 D.o o. Half-moon battery with advanced work in front, earth faced with stone.
p. High battery of earth work faced with stone. q. New work not yet finished
r.r. Observation towers. s.s. Mortar batteries. t.t. Traverses. w.w. Outer Ditch.
x.x. Glacis. y.y. Soundings.



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FOR 1841.

A Cruize in the Levant.—*From Alexandria to the Coast of Syria.*

[Extracts from the remarks of H.M.S. Alfred, Capt. R. Maunsell.—W. H. Hall, Master.—June, 1832.]

From Jaffa to the Bay of Acre.

Between Jaffa and Cape Carmel the land is rather low, and sandy near the sea, till you come to the latter, which is a long flat mountain, and terminating in a point towards the sea. At noon this Cape bore N.N.E. ½ E., seven leagues; and some mountains nearly abreast of us E.b.N., distant seven or eight miles. Latitude observed 32° 28′ N. After running twelve miles from noon, sounded in twenty-five fathoms, soft black mud; we were then distant from the shore about six miles. Passed Kaiseria, Tortura, and Athelite; the latter is situated on a promontory, with a small bay to the southward of it, in which we saw two vessels at anchor. The old ruined walls and towers about Athelite are very remarkable; between the latter and Mount Carmel is a rock, laid down in some charts, about three miles off shore, bearing from the Cape W.b.S. ¾ S. In passing we saw nothing of it, but the shoal which extends off Mount Carmel we passed very close to, for it shoaled very suddenly from seven to four and three-quarters fathoms; tacked immediately, and as we stood off it deepened. After the ship was about, took the following bearings, and had at the time six fathoms.

Buildings on Mount Carmel . . .	S.E. ½ E.
Northern outer low tower . . .	E.b.N. ½ N.
Acre	N.E.

Having deepened our water considerably, we tacked and stood into the bay for Acre. As we drew near the latter, found the soundings very irregular, so hauled up north-west for the anchorage off Kaiffa, and shoaled very gradually. From the middle of the bay, we had from twelve to six and a half fathoms, in which we anchored, about three-

quarters of a mile from the shore; sandy bottom; and had the following bearings:—

A castle situated rather high up behind the tower of Kaiffa on with ditto . . .	S.W. $\frac{3}{4}$ S.
Monastery on Mount Carmel . . .	W.b.N. $\frac{1}{2}$ N.
Castle on outer point . . .	N.W.b.W.
Town of Acre	N.N.E.

Bay of Acre.

The best anchorage for large ships in the bay of Acre is on the south side, and off the small town of Kaiffa, in from six and a half to seven and a half fathoms, sandy bottom. We anchored in the former depth, about one mile from the shore, and had the following bearings:—

Castle above, and immediately behind the town on with centre of ditto	S.W. $\frac{3}{4}$ S.
Monastery on Mount Carmel . . .	E.b.N. $\frac{1}{2}$ N.
Outer low point on which stands an Old Castle	N.W.b.W.

During our stay we sounded round the southern side of the bay, and generally speaking found the soundings very regular; but not so on the northern side.

From the ship to within half a mile of Kaiffa had from six and a quarter to four and a quarter fathoms. We then stood out along shore in the boat, keeping about the same distance off (a small half mile) towards Castle point, and had from four to four three-quarters fathoms; it deepened gradually outside of us. Passed the point, soundings nearly the same. About half way between Castle point and Mount Carmel commences the rocky shoal which is off the latter in a north-west direction, having from two and a half to four and a half fathoms on its shoalest part, and on the outer edge seven fathoms, which is nearly two miles off. It is a dangerous shoal, and ships rounding Cape Carmel, ought to give it a wide berth, and keep in ten fathoms.

In coming from the southward, if you keep the ruins at Athelite on with the next point to the southward of it, till the town of Kaiffa opens of Castle point, you will then pass well outside of it, and have thirteen and fourteen fathoms: the last marks are the best for a large ship.

When the Castle, which is situated above the town of Kaiffa, is just open of Mount Carmel, you are abreast of the shoal; when the first rise of land inside the latter Castle opens, you may steer for Acre, and when the second rise of land from the Castle opens, should the wind be off, and you are anxious to keep to windward, you may haul up for Kaiffa, keeping the Castle point on your starboard bow, and giving it a berth of half a mile.

Soundings from the ship to the eastern end of Acre, (where the ships were at anchor,) varied from six and a half to twelve, and then shoaling to one and three-quarters fathoms. Within half a cable from the beach the soundings from four to one and three-quarters fathoms were across the inner harbour where the Egyptian transports were at anchor.

Sounded round the walls of Acre within musket shot, and had from three to four and a half fathoms; and from the western part of the

town to the ship at anchor off Kaiffa five and a half to twelve, and six and a half fathoms. Acre to ship S.W. ½ S., nine miles.

The walls and town of Acre we found in a complete state of ruins, from the shot and shells of the Egyptians during the late seige; not a house or mosque had escaped.

The harbour is small, but appears very safe, and well adapted for merchant vessels, or small men-of-war. The outer anchorage is very much exposed to all winds from south-west to north-west.

There is a dangerous shoal about three miles off, S.S.W. from the town, and must be carefully avoided by ships running for Acre.

Kaiffa is a small walled town or village, situated close to the sea, and may be easily known from its being the only town on the south side of the bay. Castle point which is to the west of it, is a long low point, with an old castle on it; and on the eastern side are the ruins of the city of old Kaiffa: on its western side is a long sandy beach.

Cape Carmel, which is to the westward of the latter, is high, and very remarkable, on the top of it is a Monastery, and another large building, used as an hospital for the Egyptian soldiers, that were wounded at the seige of Acre.

Took the following bearings from the top of the Monastery:—

Ruins of Athelite . . .	S.S.W.
Outer distance southern land beyond it	S.b.W. ½ W.
Cape Blanco	N.N.E. ½ E.

The latter Cape and Mount Carmel form the Bay of Acre, and are distant from each other five leagues.

Fall of St. Jean D'Acre.

Foreign Office, November 30th, 1840.

A despatch, of which the following is a copy, has been received at this office, addressed to Viscount Palmerston, G.C.B., her Majesty's Principal Secretary of State for Foreign affairs, by Colonel Sir Charles Felix Smith, C.B., commanding the forces in Syria:—

"*St. Jean d'Acre, November 5th*, 1840.

"My Lord,—On the 29th ult. it was finally determined between Sir Robert Stopford and myself, that the siege of Acre should be undertaken. I accordingly detached Omar Bey for the purpose of advancing from Sidon with 2,000 Turks upon Tyre, and thence to occupy the Pass of the White Mountain, to the northward of this place; and on the 31st, the Admiral made sail from Beyrout roads, having previously embarked in the squadron 3,000 men, under the immediate command of the Pasha Selim, and small detachments of Royal Artillery, and Sappers, under Major Higgins, of the former corps, and Lieut. Aldrich, Royal Engineers.

"Omar Bey reached the position assigned to him at the same hour on the 2d inst., that the fleet appeared off Acre.

"Owing to light winds, the ships did not get into action till 2 P.M. on the 3d, when an animated fire commenced, and was maintained, without intermission, until darkness closed the operations of the day. About three hours later the governor, with a portion of the garrison, quitted the town, which was taken possession of by the allied troops at daylight the following morning. The moral influence on the cause in which we are engaged, that will result from its surrender, is incalculable.

"During the bombardment, the principal magazine and the whole arsenal

blew up. By the explosion, two entire regiments, formed in position on the ramparts, were annihilated, and every living creature within the area of 60,000 square yards ceased to exist, the loss of life being variously computed at from 1,200 to 2000 persons. Those who may have been inclined to doubt the fighting qualities of the Egyptian troops, might require a lesson from the example of their endurance, if they could but contemplate the devastation and scene of horror, by which this once formidable fortress is enshrouded.

"To the Royal Navy I should be guilty of great injustice, were I to attempt to record services that will be so much more ably detailed by their gallant and respected commander-in-chief. Whilst the early departure of the despatch vessel for Malta, and the labour that has devolved on me within the walls, alike deprive me of the means of transmitting returns of ordnance, ammunition, treasure, &c., that have fallen into the hands of the captors, and of giving your lordship an approximation even to the amount of prisoners (over 3,000,) as many are still coming in, and others are dragged in numbers from their places of refuge and concealment.

"To her Majesty's ambassador at Constantinople, I have reported the measures I have adopted, for the temporary administration of the Pashalic of Acre, pending the pleasure of the Sultan.

"I have the honor to be, &c.

"C. F. Smith, *Colonel*,

"Commanding the forces in Syria."

"*The Viscount Palmerston, G.C.B., &c.*"

Admiralty, November 30th, 1840.

Commander R. F. Stopford, of her Majesty's steam-vessel Phœnix, arrived at this office yesterday, with despatches from Admiral, the Honourable Sir Robert Stopford, G.C.B., of which the following are copies or extracts:—

"*Princess Charlotte, Beyrout, October 31st*, 1840.

"Sir.—I have the honour to acknowledge the receipt of their lordships' order of the 5th instant, No. 322, with the letter therein referred to from Viscount Palmerston, her Majesty's Principal Secretary of State for Foreign Affairs, to make, under certain circumstances therein stated, an attack upon the fortress of St. Jean d'Acre, upon which I was previously deliberating, and preparing arrangements for insuring, as much as possible its success. And I have now to acquaint you, for their lordships' information, that, having embarked 3,000 Turkish troops, and supernumerary marines in the different ships of the squadron, as per margin. I shall proceed on that service the moment wind and weather permit, with the Austrian squadron, under Rear-Admiral Bandeira, and the Turkish flag-ship, Rear-Admiral Walker, who had already preceded himself, with a flag of truce, to summon the place, but was not received.

"I have the honor to be, &c.,

"Robert Stopford, *Admiral*."

"*R. More O'Ferrall, Esq. &c.*"

"*Princess Charlotte, off St. Jean d'Acre, Nov. 4th*, 1840.

"Sir.—You will be pleased to acquaint the Lords Commissioners of the Admiralty, that the town and fortress of Acre were taken possession of by the allied forces under my command this morning, in the name of the Sultan.

"The circumstances which led to this result, occurred on the 3d, when a heavy cannonade from the ships and vessels, beginning at 2 P.M. and ending at 5, completely demolished the town, and materially damaged the fortifications, inducing the Egyptians to evacuate the place in the night. A tremendous explosion of a large magazine of powder took place about 4 P.M. on the 3d.

"The attacks were made upon the west lines, and the south face of the

works, the former composed of the following ships,—viz. Princess Charlotte, Powerful, Bellerophon, Revenge, Thunderer, and Pique, under the immediate command of Commodore Napier, (as I thought it advisable to accompany Col. Sir Charles F. Smith, in the Phœnix steamer, to be ready to take advantage of any breach that might be made in either of the two sea faces of the walls of the place for an immediate assault.) The south face being a more contracted anchorage, was occupied by the Edinburgh, Benbow, Castor, Carysfort, Talbot, Wasp, and Hazard: the destruction caused by the fire of the ships on both sides sufficiently proves its rapidity and precision.

"Rear-Admiral Baron de Bandeira, in the Austrian frigate Medea, and the Guerriera, under the command of his Imperial Highness the Archduke Frederick, with the Arabian corvette Lipsia, rendered much assistance. Rear-Admiral Walker Bey, in the Sultan's ship Mookuddimay-i-hive, of 74 guns, took up a most favourable position opposed to the south face, and did good service.

"The steamers Gorgon, Vesuvius, Phœnix, and Stromboli, fired shot and shells into the town with much precision, and it is generally supposed that shells from the Gorgon occasioned the destruction of the powder magazine.

"A flag of truce having been offered by the Turkish admiral and rejected a short time before, I did not think it necessary or becoming that the summons should be repeated, particularly as hostilities had already commenced, and the ships and steamers had been fired upon as they approached the walls.

"I have not been able to ascertain the number of troops in the town of Acre at the commencement of our fire; they have been estimated at 4,500, besides a body of cavalry outside the town of 800. Many lives were lost by the explosion of the magazine. 700 Egyptians and two officers of rank came in this morning with their arms, and surrendered themselves as prisoners.

"To Colonel Sir Charles Smith devolves the task of putting the town and fortifications into a posture of defence, and I am happy to find that his health enables him to perform this duty with his usual intelligence.

"A great quantity of arms and ammunition was found at Acre, and the fortifications were fast getting into a state of preparation against attack.

"I am much indebted to Captain Edward Boxer, of the Pique, and to Captain Codrington, of the Talbot, for the excellent surveys which they made of the shoals round Acre, which enabled the ships to go in without risk of getting ashore.

"I return a list of the killed and wounded in the allied squadrons, but the damage to the masts and rigging can be made good without the ships being sent off the station.

"The success of this enterprise, so important in its results, has called for my acknowledgments in general orders to the officers and men of the combined squadrons, whose united exertions had so much contributed to its attainment.

"I have the honour to be, &c.,

"*R. More O'Ferrall, Esq., &c.*" "ROBERT STOPFORD, *Admiral.*"

Return of killed and wounded in the squadron under the orders of Admiral the Honourable Sir Robert Stopford, Commander-in-Chief, in the attack of the fortifications of St. Jean d'Acre, on the 3d of November, 1840.

Princess Charlotte—killed, one seamen.

Powerful—Wounded, one seaman severely; two seamen and one royal marine slightly.

Bellerophon—None killed or wounded.

Revenge—Killed, one seaman, one drummer royal marines. Wounded, three seamen severely: one royal marine slightly.

Thunderer—None killed or wounded.

Castor—Killed, four seamen. Wounded, one seamen and two royal marines severely; three seamen and one royal marine slightly.

Edinburgh—Killed, two seamen, one drummer and one private royal marine. Wounded, Com. F. D. Hastings, Mr. John Davies, master, Mr. Joseph Plimsoll, assistant-surgeon, Mr. Henry Boys, midshipman, one seamen, one boy, and one sergeant royal marines, all slightly.

Benbow—None killed or wounded.

Pique—None killed or wounded.

Carysfort—None killed or wounded.

Talbot—Wounded, Lieut. G. B. Le Mesurier, since dead; Mr. Henry Haswell, mate, slightly; one seamen severely.

Gorgon—None killed or wounded.

Wasp—Wounded, five seamen, one royal marine severely.

Stromboli—None killed or wounded.

Phœnix—None killed or wounded.

Vesuvius—None killed or wounded.

Hazard—Wounded, one royal marine, one boy slightly.

Turkish flag-ship, Rear-Admiral Walker,—four killed; three wounded.

Medea, Austrian flag-ship, Rear-Admiral Bandeira—one killed, four wounded.

Guerriera, Austrian frigate—one killed, two wounded.

Total killed, 18—wounded, 41.

Particulars of the Bombardment and Fall of St. Jean D'Acre.

Malta, Nov. 15th, 1840.—The Phœnix, steam-frigate, arrived on Thursday evening last, bringing the momentous intelligence of the capture of St. Jean d'Acre, the far-famed fortress of the Levant, by the combined fleets of the allies. The action is the most splendid of all the recent naval achievements in these seas, demonstrating to the staggering faith of the politicians in Europe, that nothing can withstand British genius and valour. Vainly have the French incendiaries defied the British naval forces to take the great "fort of the East;" for, whilst they pour out their bitter invectives, and sing their savage war-whoop of nationality, a council of war is formed to attack these redoubtable batteries, it is decided in a moment, and in another St. Jean d'Acre is a heap of smoking ruins, dyed with the profuse blood of the enemy.

We cannot pass by the splendid action of Admiral Stopford—an action which has covered the admiral with immortal honour. It was Admiral Sir Robert Stopford who left his flag-ship in the Phœnix—who directed the attack—who fired the first shot upon the devoted fortress—who neared the formidable batteries, and under the bristling cannon (the labour and accumulations of ages) stood up with coolness, daring, unshaken courage, and commanded the whole operations.

The admiral was nobly seconded by General Sir C. F. Smith, of the Royal Engineers, who was with him on board the Phœnix, and by other brave and intrepid officers under his command. Commodore Napier—the glory of the British sailor—headed one of the two divisions, and would not cease his fire till every gun of the enemy was silent. Admiral Walker behaved also most admirably, and took his flag-ship under the guns.

The result of this grand action is 3,000 prisoners, an immense quantity of warlike stores, accumulated for years in this celebrated fortress, and possession of the entire coast of Syria.

The fall of Acre will echo and re-echo throughout the world. The

sovereigns of Europe will see that the spirit of Nelson still lives in the British navy, that her fleets can yet batter down mighty works, deemed by ordinary people impregnable, and that England is yet the undisputed mistress of the sea.

We refer our readers for the details of this splendid achievement to our correspondent's communication from the scene of action.

The Phœnix, steam-frigate, arrived in port on Thursday afternoon, from Acre the 6th inst., with the important intelligence of the fall of that fortress on the 3rd.

The attack commenced at half-past two o'clock, P.M., and became general at three P.M. At twenty minutes past four a large magazine blew up, by which one entire regiment was sacrificed. At five o'clock the southern division ceased firing, and at forty minutes past five the north-western. The batteries fired until the last. During the night the place was evacuated. At three A.M. Walker Bey landed with some troops and took possession.

British loss—18 killed and 41 wounded.

Egyptian loss—1,500 to 1,700 killed by explosion. 500 killed on the ramparts. Wounded unknown.

The only officer killed was Lieut. Le Mesurier of the Talbot, who received a severe contusion, of which he died on the following day.

The British ships engaged were the Princess Charlotte, Powerful, Thunderer, Benbow, Revenge, Edinburgh, and Bellerophon of the line; Castor, Pique, Carysfort, and Talbot frigates; Wasp and Hazard sloops; Gorgon, Vesuvius, Stromboli, and Phœnix steam-frigates. Two Austrian frigates and a corvette, and a Turkish ship of the line, with the flag of Admiral Walker.

Some of the ships were a good deal cut up about the rigging and spars, and a prodigious quantity of powder and shot was expended.

The Phœnix proceeded to England yesterday with the despatches from Admiral Stopford.

THEATRE OF WAR.—OPERATIONS OF THE ALLIES OFF THE COAST OF SYRIA.

Acre, Nov. 6th, 1840.—Since may last strange events have occurred, of which I will endeavour to give you a sketch.

On the 24th ult. the Medea steamer arrived from Malta and England; the same day the Turkish admiral (Walker,) with the Gorgon and Phœnix steamers, sailed for Acre; and the day following, having reached their destination (where they found the Revenge and Pique,) sent in a flag of truce, summoning the town, which, however, was not received, and the boat threatened to be fired on, if not immediately off. The Gorgon and Phœnix therefore returned to Beyrout, but on the latter's arrival there found that the admiral, with the Bellerophon and Edinburgh, and the two Austrian frigates, had sailed for Acre, to which place she accordingly returned, and learned that on the previous evening the Gorgon had fallen in with the Princess Charlotte, and strange to say, received orders for all the ships, excepting the Pique, to return to Beyrout, to which place we all accordingly proceeded. On the 29th

the Vesuvius steamer arrived from Malta and England, and the same day an Austrian steamer from Constantinople, bringing troops, and despatches from Lord Ponsonby. On the 30th ult. a general order was issued by command of the Lords Commissioners of the Admiralty, thanking the fleet for their zeal and exertions; and on the same day a council of war was held, at which an immediate attack on Acre was decided on. The same evening the supernumerary marines were embarked, and on the following day about 3,000 Turkish troops, each ship taking a portion according to her size; General Sir C. F. Smith, R.E., accompanying them. In the afternoon, the steamers Gorgon, Vesuvius, Stromboli, and Phœnix, started for their destination. On the morning of Sunday, November the 1st, the steam division arrived off Acre, where they found the Pique, and in the forenoon commenced throwing shot and shell into the devoted town, which was briskly returned, but fortunately without effect. This amusement continued at intervals during the day, and must have harassed the enemy a good deal, as a number of shot and shell were seen to fall and burst in the very centre of the town. In the evening, the steamers anchored just out of range, and the Talbot and Wasp joined. At daylight on the 2d, the Turkish and Austrian admirals made their appearance, and at eight o'clock the steamers weighed and resumed their work, which was continued at intervals throughout the day, the batteries returning the fire as yesterday, and with the like harmless effect. In the afternoon we had the satisfaction of making out the admiral and squadron running down before a fine breeze from the northward: shortly before sunset the whole anchored off the town. The forces now assembled consisted of the following vessels: Princess Charlotte, (flag) Powerful, (broad pendant,) Thunderer, Bellerophon, Revenge, Edinburgh, and Benbow, of the line; Castor, Pique, Carysfort, and Talbot, frigates; Hazard, corvette; Wasp, brig; steam frigates Gorgon, Vesuvius, Stromboli, and Phœnix; the Austrian frigate Guerriera, and Medea, and a corvette; and the Turkish admiral and cutter tender. The night was spent in sounding, laying down buoys, and making the necessary preparations. It was originally intended that the steamers should lash alongside and tow the liners into their stations; but finding too much swell on in the morning, that plan was necessarily abandoned, and it was determined to proceed to attack under sail.

At half-past nine A.M., all being ready, the signal was made to weigh, with a light wind from the south-west. The Admiral and Sir Charles Smith went on board the steam-frigate Phœnix, from which vessel they conducted the attack; the flag, however, still remained flying on board the Princess Charlotte. Unfortunately, about noon, the wind fell very light, and the ships were obliged to wait for the sea breeze, which happily sprung up sufficiently strong a little before one P.M., when the signal was made to bear up, and for the steamers to engage, (they had in the forenoon thrown a few shot and shell.) At fifty minutes past one the Phœnix opened her fire. The Powerful, closely followed by the Princess Charlotte, Thunderer, Bellerophon, and Pique, stood to the northward, (it would be as well to state here that the town presents two faces to the sea, one to the west and the other to the south,) and then bore up, and anchored off the north-west angle of the town in the

order named above. The Castor, Carysfort, Talbot, Benbow, Edinburgh, Turkish Admiral, Hazard, Wasp, and Austrians, stood in for the south face; the Revenge was ordered to keep underway as a reserve.

At a quarter-past two o'clock the batteries to the south opened on the Castor, as she most gallantly, and to the admiration of the whole fleet, took up her station within about seven hundred yards of the batteries, where she and her consorts opened their fire, as had also by this time the northern division; the steamers were placed between the two divisions, underway, and thus the action became general. It would be impossible to attempt a description of the scene at this moment, but had those who have heretofore doubted the bravery and constancy of the Egyptians, then witnessed the animated fire kept up by the batteries they would no longer be sceptical as to their courage or endurance. At about three o'clock, the Revenge was ordered in to support the Powerful's division, and took up an admirable position ahead of that ship. At twenty-five minutes past four, the action being at its height, a terrific explosion took place in the town, which for a time wholly concealed it, and the southern division from view; its appearance was truly awful, and I can compare it to nothing but as if a huge yew tree had suddenly been conjured up from the devoted town—it hung for many minutes a mighty pall over those hundreds it had hurled into eternity, and then slowly, owing to the lightness of the wind, drifted to the southward.

It proved to be the explosion of the principal magazine of the place, one-third of which it has destroyed, and, from a whole regiment having been quartered in a khan immediately adjoining, it is supposed from 1,500 to 1,700 soldiers perished in the ruins, besides a number of camels, horses, bullocks, and donkeys. After this fearful event, the fire from the southern batteries nearly ceased, but the western one still kept it up with animation, and was answered broadside after broadside with redoubled vigour and tremendous effect. Shortly before five o'clock the admiral made the signal to discontinue the engagement, but from the smoke it could not be seen for some time by the Powerful's division, who continued until half-past five to fire at the few guns that still maintained the action, after which not a shot was fired either from the town or fleet. This sudden silence immediately succeeding such a dinning uproar, had a very peculiar effect.

In the early part of the night the Princess Charlotte and Revenge shifted further out, and the Benbow, Edinburgh, and Castor were hauled further in, for the purpose of breaching the south face in the morning; the steamers anchored as convenient. Admiral Walker made one or two unsuccessful attempts to land some spies; but happily about thirty minutes after one, A.M., a small boat came off from the captain of the port, to say that the Egyptians were leaving the town, and that if a party was landed at the water-gate it would be found open; this was of course immediately done, and two hundred Turks and a party of Austrian marines took unopposed possession at daylight; the remainder of the Turkish troops and a considerable number of marines were landed and quietly marched into the place.

Thus has fallen the far-famed fortress of Acre! after a bombardment of only about three hours' duration. Any attempt to describe the awful scene of carnage and destruction that presented itself would be impos-

sible. I shall, therefore, not attempt the task, but confine myself to giving you the numbers supposed to have perished and the damage done. From 1,500 to 1,700 are supposed to have perished by the explosion of the magazine, and about 300 were killed in the batteries. 3,000 prisoners were taken; 700 of one regiment, who had evacuated the town on the night, marched down to the beach with drums beating and quietly laid down their arms. The batteries are awfully knocked about, many guns upset, and several burst. Correct returns of the number of guns mounted have not been received, but I should suppose that there are about 120 on the sea faces, and about 20 mortars, chiefly brass, 13-inch. Vast quantities of munitions of war and provisions, together with specie, to the amount 5,000*l.* were found in the town. Youssouf Aga (Colonel Schultz, a Pole,) the chief engineer of the army of Syria, was taken prisoner seriously wounded in the arm—the defence of the place had been entrusted to him. Mahmoud Bey, the governor, effected his escape, but has since been taken by the mountaineers. It now only remains for me to state the loss sustained by the attacking force, which amounts in all to 14 English and 4 Turks killed, and 48 wounded: the only officers who suffered were Lieut. Le Mesurier, of the Talbot, who received a severe contusion, of which he died the following day; and Commander Hastings, Mr. Davis, an assistant-surgeon, and a midshipman, all of the Edinburgh, wounded by the bursting of a shell on the quarter-deck before she anchored, which also killed three seamen and one marine. Some of the ships are a good deal cut up about the rigging and spars. The Edinburgh's mizen-mast is shot through, the Castor's bowsprit, the Hazard's mizen-mast, and the Wasp's fore-mast all severely struck, are the principal spars that suffered. The Benbow was struck by a 14-pound shot in the hull, but, strange to say, not a man was touched. The Austrians sustained but little, if any injury. The wonderful precision and rapidity of the fire are best appreciated by Youssouf Aga, the Pole, declaring that no men could possibly have stood to their guns in the batteries—the Princess Charlotte alone fired 4,400 shots. Little damage has been sustained by the works on the land side, which are even now very strong, but which a few months more would have rendered almost impregnable, Some hundreds of sick and a number of dead were found in the hospital, many having been killed in their beds during the bombardment, and all appear to have been sadly neglected.

Ibrahim Pacha is reported to be at a place called Zehle, between Lebanon and Anti-Lebanon, with a force of from 15,000 to 20,000 men.

The prisoners taken at Acre are embarking on board the English ships, which are shortly to proceed to Marmorice for the winter, leaving a squadron of frigates and steamers under Capt. Collier of the Castor on the coast of Syria.

The Phœnix, with the despatches for England, will leave this morning. Reinforcements from Constantinople continue to arrive, but the campaign is supposed to have finished for the winter. Mr. Gennys, mate of the Carysfort, is promoted into the Talbot, vice Le Mesurier, dead. Admiral Walker is to leave in the Vesuvius with the despatches for Constantinople; he has been made a Pasha.

Another letter, after giving an account of the operation, states;—At daylight we found the place had been evacuated during the night; the troops were immediately landed by the small ships. The Turkish flag was hoisted on the citadel, and on either side a small English and Austrian flag, thus terminating the siege and fall of Acre. The enemy certainly had been expecting us to land in the bay, having barricaded the gates on that side and made it very strong; we commenced by going round the outer walls, and were truly surprised at the strength of the place; almost every gun was new,—every carriage quite so; but the quantity of ammunition, shots, and shells, of every sort and description, by the side of each gun astonished us, certainly sufficient for a six months' ordinary siege. But nothing could stand against the fire that was opened on them, the ships taking at least two-thirds of the triangle, which is the shape of the fortification. Almost every gun has been rendered useless, many upset, and most of them having a shot or two through their carriages; killed and wounded about in all directions—a sad sight. From this we went up into the citadel, a very strong and almost impregnable place; from this through a mosque, the stores and magazines, and then on to the crater, for I cannot use a more appropriate word; the quantity of powder was immense, the precise number of tons uncertain; but the space destroyed covers one mile, the number of killed by the explosion above 1,200, besides cattle, horses, &c.; in many places on the cinders I passed six and eight bodies, lying over and beside each other in one place. We counted thirty donkeys dead, having been tethered in a square ready to carry shot, &c., to the distant guns, cattle and horses half buried. Indeed, no one in the fleet ever witnessed such an extensive explosion. From this we went out some way on the beach to meet 700 infantry, who had just marched back and given up their arms, then on to the cavalry stables; 600 horses were taken; the other 600 expected in hourly. In the town there is not one house without many shot holes in it, nor one habitable. I could not have imagined a city so completely destroyed, and was really glad to find myself again on board.

The Bellerophon, Revenge, and Thunderer, are ordered to convey 600 prisoners each to Beyrout, and there tranship them into transports for Constantinople. It is said that much specie has been found in the city, and 300 pieces of field artillery. I yesterday heard the value estimated at 200,000*l.*, this fortress having been the grand depôt and arsenal of Mehemet Ali. It will be a great blow to him; the garrison was supposed to amount to near 6,000 at the commencement of the attack. The next ships for Malta are the Edinburgh, Hazard, and Wasp, the two first having their mizen-masts, and the last her foremast shot through. The Bellerophon in the three hours and a half fired away 160 barrels of powder, and 28 tons of iron shot.

The following is from an officer of the squadron.

H.M.S. Bellerophon, Nov. 5th, Acre.

I have only just time to say that I am not killed.—I refer you to English papers for a more circumstantial account of the capture of this important fortress, than any my pen could pourtray, for your information.

Our loss is astonishingly small, (I mean in the fleet,) for *we* did not lose a man! Such an acquisition, and gained too in such a gratifying way;—almost a bloodless victory on our side!

The Admiral has issued an order to the fleet, which I give you, *verbatim*.

"*Princess Charlotte, off Acre, 6th Nov.* 1840.

"MEMO.—The Commander-in-Chief congratulates the Commodore, Captains, and Commanders, of Her Majesty's ships and vessels, and all the Officers, Seamen, and Royal Marines, upon the important capture of the forts and town of Acre; a fortress which has stood many long and serious attacks, but which was destroyed in three hours, by the rapidity and precision of the fire of the British ships acting in conjunction with their allies.

"The Commander-in-Chief returns his best thanks to the Commodore, Officers, and Men above-mentioned.

"Signed ROBERT STOPFORD, *Admiral*,

"Commander-in-Chief."

"*To the respective Captains, Commanders, and Officers commanding H.M. ships and vessels off St. Jean d'Acre.*"

Thanks to sundry sand bags, that had been placed under the breast of many guns, and thereby prevented the required depression to cut us up. They never calculated, poor fellows, upon our approaching them so close: two hundred yards further out, and we should have been prettily riddled: shot from the very commencement to the close of the action passed between our masts, and pitched about that distance outside of us.

I have just returned from the shore after witnessing a most frightful scene of havoc and devastation! Such an example as we have afforded them! Awful in every sense of the word! one mass of ruins. Acre so celebrated in 1799, has been irretrievably destroyed (as far as the town and many batteries are concerned,) by the British fleet in 1840.

Such a succession of good fortune! such wonderful and unlooked for achievements by a naval force in a few weeks. Before I go further I must mention that about the middle of the action which lasted for three hours and upwards, from 2h. 30m. P.M. (Nov. 3rd,) to 5h. 50m. P.M. when all was hushed! a grand magazine blew up, and destroyed more than 2,000 souls.

At sunset firing ceased and we expected to have been compelled to commence cannonading on the morrow, but during the night the enemy evacuated the place, and we took possession. The ensuing day's dawn saw the Turkish standard, and English and Austrian flags waving proudly on the highest battlements of the citadel.

Two thousand Turks have arrived here on their march down from Sidon to cut off the enemy's escape, but their services were not required to effect that object as the mountain passes, in the hands of the mountaineers, were not pursuable; and the enemy making a virtue of necessity, returned to throw up their arms to the *heroes of Acre*. Some 5,000 or 6,000, I hear, have already come, and more than 1,500 cavalry.

Bellerophon, Thunderer, and Revenge are to take 600 each to Beyrout to be sent to Constantinople by transport. We shall leave this to-morrow.

Nothing can withstand the awful precision of the fire of the Mediterranean Fleet, which will, depend upon it, be triumphant, singly or collectively, wherever they meet a foe foolhardy enough to hazard an engagement.

Charles Elliott took up a good town berth in Hazard, and has suffered I believe, more than many other vessels.

Acre may well be called the arsenal of Syria, and superior in strength to any place in the world, save Gibraltar. It is abundantly supplied with munitions of war of every kind. Immense stores of grain,—shot and shells, powder, arms, and lots of treasure, 400 field pieces, 140 heavy artillery mounted round the town,—counted by our surgeon,—and 16 howitzers, most 13-inch.

I partake too much of the excitement that prevails afloat to write in a reasonable way just now, so "take the will for the deed."

We subjoin the following letter also from an officer of the squadron:—

"*Off St. Jean d'Acre, Nov. 4th*, 1840.

"I have now to announce to you one of the most complete and glorious actions which have happened for many a long day. Acre is now our own, after an action of three hours and a quarter. But let me proceed to give you the details:—On the 1st Nov. the following ships weighed from Beyrout to proceed to this place—Princess Charlotte, Powerful, Thunderer, Revenge, Bellerophon, Benbow, Edinburgh, Castor, Carysfort, and the steamers Gorgon, Vesuvius, Stromboli, and Phœnix, which vessels pushed on at once to their destination, every vessel having on board from 200 to 300 Turks, besides the shore marines, artillerymen, &c.; the land forces commanded by Sir C. Smith, Selim Pacha, and General Jochmus. On the 2d we were off Tyre, where we picked up the Wasp, and in the evening of that day anchored out of gun shot of the batteries of Acre; here we found the steamers, and Pique, Talbot, Hazard, Turkish liner, with Admiral Walker's flag, and two Austrian frigates. During the night we got cables out for anchoring by the stern.

"At 10 A.M. on the 3rd, all the ships weighed, and prepared for action; the steamers opened their shell guns upon the town, at a great distance, and I am sorry to say, the shells failed, nearly all through bursting at the muzzle, or before the proper time given by the length of fusee. The wind was light, and blowing directly off shore; at 12 we went to dinner; the wind shifted, the sea breeze setting in, and all the ships hove to. At 1 P.M., the order of sailing was formed—weather or northern line being the Powerful, Princess Charlotte, (admiral in the Phœnix,) Revenge, Thunderer, Bellerophon, and Pique; the southern line was Benbow, Edinburgh, Castor, Carysfort, and Talbot; the Turkish admiral standing in by himself. At 1h. 15m., or 1h.30m., the batteries hoisted their colours and opened a heavy fire upon the Benbow, but too high; the Benbow returned it with three bow guns, thus becoming the first ship engaged: at 1h. 50., anchored, sprung the ship and commenced in earnest; by 2 P.M. all the ships were engaged excepting the Bellerophon and Thunderer, which two ships, from the Powerful not taking up her berth far enough ahead, could not get in, and therefore fired very rarely. The cannonade was kept up with great spirit on both sides. The ships were anchored about 700 yards off the shore.

"At 3h. 30m. the Benbow commenced firing a few shells, when immediately after the most terrific explosion of the grand magazine in the fortress took place. I never saw such an awful scene; the whole sea between us and the batteries was one sheet of foam, as if thousands of cannon balls were leaping towards us; numbers went over, but not one struck us; the concussion was

so great that the people came out of our magazine, thinking it was our own ship. This I think decided the day, for the firing gradually ceased from the forts; and at 5 P.M. the signal was thrown out to discontinue action, every gun being silenced excepting one which persevered in firing the last shot. All the damaged ships now hauled out into safer anchorage.

"During the night Admiral Walker sent a boat on shore, and ascertained the place had surrendered, and he sent 300 men on shore at once to put a stop to the pillage which was going on. At daylight all the marines and Turks were landed,—hoisted the Turkish, English, and Austrian flags, which were greeted with repeated salutes and cheers. I soon went on shore! but the scene was too horrible for an inexperienced eye. At the batteries, dead and wounded lay in heaps, mangled most dreadfully; gunpowder, shells primed, &c., strewed about in heaps: really our gunnery practice reflects admirable credit on us; almost every gun was dismounted or disabled, and the whole place is one heap of ruins. But the most revolting sight was the place of the explosion; it appears that a whole regiment of 1,500 men are buried under its ruins; here a hand, there a leg, was to be seen, sticking up from the mass of rubbish; bodies were being dragged out constantly, some still breathing, muskets, bayonets, shreds of burnt clothes, and limbs scattered about in every direction. The surviving gunners say that the men were picked off from their guns by our shot, as if it was from musketry. Nearly a quarter of the place was blown up, making a deep hollow where formerly stood the government buildings; amongst which was the khan in which the devoted regiment was placed, to be sheltered from our fire.

"The batteries they had against us were very enormous; at least thirty mortars from thirteen to eight-inch, several eight-inch guns and forty-pounders; if they had been well directed the execution on board our ships would have been dreadful; but they fired too high, and loaded their guns, with perhaps three shot at a time, so that many did not penetrate one side of the ships. The damage about the rigging and masts was great, Edinburgh's mizen-mast was disabled; a shell burst on her quarter-deck, killing four marines, and slightly wounding Captain Hastings, the master, and two midshipmen. The Benbow had fourteen shots in her hull, but not a soul hurt, although perhaps in the thickest of the fire; the Edinburgh was just ahead, and Wasp astern of her; the Wasp had four men dangerously wounded. The Castor is very much cut up about her rigging; no one hurt. The Powerful is much cut up about her rigging; this ship and the Revenge lost a main-topmast. The slings of the main-yard of the Benbow were shot through; but the yard was fortunately well secured previously. The Turks lost many. The killed and wounded on shore are quite beyond calculation; prisoners about 2,000, not more than 200 escaped; amongst them was the governor, but he was stopped by the mountaineers, and is now in our possession; and in all probability those few soldiers who did leave the town are massacred by the same people; several are lying dead in the road, about a mile from the town. Napier wanted to march at once to Damascus to cut off Ibrahim Pacha's retreat, but we had not sufficient troops. The Egyptians have every where given frightful examples of their cruel and atrocious nature. Before they deserted Tripoli, they collected all their powder, women, and sick, whom they could not carry away, and blew them all up together. They are a detestable, cold blooded set of butchers."

THE following is an extract of a letter from an officer of her Majesty's steam-frigate Gorgon:—

"On the last day of October we were despatched from Beyrout, with three steamers under our command, to bombard this devoted place for three days before the general attack was made, which we commenced on the 1st of November, by standing in within range, and firing shells as hard as we could pelt, and

they returned two for one. They fell around us like hail, but strange to say, not a shot struck us; our bombardment was not very successful, as more than half the shells burst before they reached the shore, owing to the fuses being badly bored; all the shells from the steamers failed alike, a circumstance not very creditable to those who made them, and sadly disappointing to us. It is not likely they were ever tried at such a distance before, 4,000 yards.

"At half-past 4 o'clock ,—(how shall I describe this,) as if by one consent, all firing ceased, and oh! heavens! what a sight! The whole town appeared as if it was in the air; so awfully grand a sight no one can describe. We saw nothing but one devilish cloud, extending thousands of yards into the air on all sides, and then we felt an awful shock which gave the line-of-battle ships a heel of two degrees, so that you may judge from the moment of the explosion, all firing from the town ceased. The Turkish Admiral, Walker Bey, was boarded at one o'clock in the morning by an Egyptian Colonel, who informed him that they were evacuating the town as fast as possible. Walker Bey immediately landed with 300 men, and took possession of the town, making 3,000 prisoners.

"Thus fell this tremendous fortress, which has not been over-rated by report, for I really think it is the strongest place, (next to Gibraltar) in the world, and I think we should never have taken it but for the explosion, which was caused by one of our shells bursting in their main magazine of powder, by which, to speak within bounds, 2,000 souls were blown to atoms, besides beasts of burthen of every description. In all, the loss of the Egyptians is computed at 3,000 killed and wounded. At daylight, what a sight was exposed to our view? The stupendous fortification, that only twelve hours before could boast of being among the strongest in the world, was so riddled, we could not find a square foot that had not a shot.

"On the morning of the 4th, I went ashore to witness the devastation; the sight beggared all description. The bastions were strewed with dead, the guns dismounted, and all sorts of havoc. I then came to the spot where the explosion took place; it has laid a space of two acres quite bare, and hollowed it out as if a quarry had been worked there for years. And, oh! heavens, what a sight? It makes my blood run cold to write of it. Mangled human bodies of both sexes, strewed in all directions, women searching for their husbands and relatives, tearing their hair, beating their breasts, and howling and crying most piteously. God forbid that I should ever see the like again."

Disaster at St. Jean D'Acre.

On the 6th of November, three days after the fall of this redoubtable fortress, and when the British were still rejoicing at having achieved in three hours, and with a loss on their side of only 22 killed and 44 wounded, that which even in its then inferior strength withstood eleven assaults of Napoleon, and was only taken on the twelfth with a sad loss of human life, they were doomed to suffer a disaster, the origin of which is likely never to be cleared up, though in all probability, it has arisen from the loose manner in which powder appears to have been conveyed from place to place by the enemy, during the defence of it against the allies, for it seems the approaches to the works from the several magazines are literally one continued train of powder, requiring the greatest vigilance to remove, so as to avoid such consequences as the one we are about to relate.

A column, at least 500 yards in height, of thick yellow smoke and dust, with a loud and simultaneous report, succeeded by a white smoke and the bursting of so many as as thousand shells, spreading in all

directions far beyond and all around the ships of the fleet, some of which, and among them the Wasp, being only about one hundred yards from the shore, announced the explosion of another powder magazine within the fortress of Acre! In five minutes after, the officers who landed from the shipping to the succour of the sufferers, among whom there might be shipmates and messmates, encountered on the road those who had fortunately escaped carrying to the boats for conveyance on board, for medical aid, the maimed and wounded, which together with the killed, are said to amount to 280, of whom at least 150 are native women and children. We have been unable to ascertain how many are the sufferers in the British fleet, but we understand that as many as fifteen marines are killed, and had it not been the hour of dinner, the number would have been considerably increased. Among the seamen there are several wounded, and of the officers, Brigadier-General Sir C. Felix Smith, R.M., very slightly; Captain Collier, R.N., of the Castor, leg broke, and other injuries and bruises, and Lieutenant Johnson and the Rev. M. Kitson, both of the Princess Charlotte, from which ship Mr. Warre, mate, and a working party were ordered to clear out a magazine full of powder and shells, which was on fire from the explosion. This perilous service was happily performed without any casualty, notwithstanding the doors had been shattered. By the applying of wet bales and blankets, by dusk the chances of further damage were considerably reduced, though the fire was not entirely extinguished until a late hour of the night. Nothing could exceed the intrepid conduct of the parties employed, who even mounted the burning roof, braving all danger, in order to introducc the hose of the engine, playing upon the fire. The Princess Charlotte had two of her marines killed and nine wounded, besides several seamen, and the officers belong- to her above-named.

Acre, November 7th, 1840.

On Friday the 6th, an explosion of a powder magazine took place, and the loss of life on this sad occasion was indeed fearful. Captain Ford himself was on shore on the spot a few hours before, and reports that a number of poor Arab women were there, seeking among the ruins the dead bodies of their husbands and relations. These he supposes amounted to a hundred, and it is probable that all met a melancholy fate by the explosion.

Captain Ford himself escaped narrowly, for he had been sent to attend Sir C. Smith a few moments before the explosion, but excused himself, having felt too much fatigued from his previous exertions.

The effects of the explosion were very remarkable. Among the columns of dust which filled the air were perceived immense stones, (many of which fell near the Tahiri Bairi, without however striking her,) shells exploded with horrible din, and bodies of men and women were hurled into eternity! Men in boats going off to different ships were wet through by the splash caused by the fall of stones and other heavy bodies in the water. The Stromboli was struck, but providentially no one was wounded. At 3 o'clock signals were made from the Princess Charlotte, (flag ship,) for all the boats to go on shore and render assistance. At 4 it was painfully known that many were killed

and wounded. Among the sufferers were Capt. Collier, of the Castor, who had his leg broken and a contusion on his head. He is, however, doing well.

General Sir C. Smith, who was examining his horse, had a slight wound, and his horse killed.

The chaplain of the flag-ship and twelve marines badly wounded.

Twelve marines wounded and several missing.

Forty Turks killed and wounded, and about one hundred Arabs, men and women.

In the town, oxen, asses, sheep, mules, horses, camels, &c., lie indiscriminately with mutilated human bodies. Although Arabs are employed to remove the dead, the work is one of much labour, on account of the heavy stones with which the bodies are covered. There is no supporting the dreadful odours that arise from the putrefying masses.

Water is scarce and bad. At the time the Tahiri Bairi left, men were dying in the streets for want of surgical aid; the surgeons of the fleet were too few in number to do what they desired, though their individual exertions were highly commendable.

Mahmoud Bey, with 2,000,000 of piasters, made his escape, with about 20,000 people, during the night; many of them were next day seized by the mountaineers, or voluntarily surrendered.

Col. Schultz, a Polish engineer, after being badly wounded, surrendered to Sir R. Stopford, by whom he was sent on board the Edinburgh, with orders to be well treated. He was afterwards embarked on board the Tahiri Bairi for Constantinople, but 'ere he reached Beyrout he was suffering so severely that Capt. Ford landed him at the English hospital there, where he will receive the very best attention and care.

The ships in general, except the rigging, are little touched.

Admiral Walker behaved nobly, bringing his ship close in to the forts, with only two feet water under her keel, and in a very exposed place. He was raked by a battery on his quarter, and exposed to the fire of batteries on his beam.

He only lost four men killed and eight wounded. His ship was much injured, and sailed yesterday, (5th) for Constantinople for repairs, and carrying 1,200 prisoners.

The assistance rendered by the Austrian frigates was considerable, and called forth the thanks of Sir R. Stopford.

Copy of the convention between Commodore Napier, commanding the naval forces of Her Britannic Majesty before Alexandria, on the one side, and His Excellency Boghos Youssouf Bey, Minister for Foreign Affairs of His Highness the Viceroy of Egypt, authorised specially by His Highness, on the other; done and signed at Alexandria, dated Nov. 27, 1840.

Art. 1.—Commodore Napier, in his above-named quality, having communicated to His Highness Mehemet Ali, that the allied powers had recommended the Sublime Porte to reinstate him in the hereditary government of Egypt, and his highness seeing in this commuuication a favourable circumstance to put an end to the calamities of war, his highness engages himself to order his son, Ibrahim Pacha to proceed to the immediate evacuation of Syria; his highness engages himself besides to

restore the Ottoman fleet as soon as he shall have received the official notification that the Sublime Porte grants to him the hereditary government of Egypt, which concession is and remains guaranteed by the powers.

Art. 2.—Commodore Napier will place at the disposition of the Egyptian government a steamer to conduct to Syria the officer designated by his highness to bear to the commander-in-chief of the Egyptian army the order to evacuate Syria. The commander-in-chief of the Britannic force, Sir Robert Stopford, will, on his side, name an officer to watch the execution of this measure.

Art. 3.—In consideration of what precedes, Commodore Napier engages himself to suspend on the part of the Britannic forces hostilities against Alexandria, or any other port of the Egyptian country. He will authorise, at the same time, the free navigation of the vessels destined for the transport of the wounded, of the sick, or from every other portion of the Egyptian army which the government of Egypt might desire to have to return to this country by sea.

Art. 4.—It is well understood that the Egyptian army shall have the facility to retire from Syria with its artillery, arms, horses, munitions, baggage, and especially with all that constitutes the *materiel* of the army.

It is stated that the weight of shot thrown at a broadside by Sir Robert Stopford's squadron, amounted to 12,434 lb: by Lord Exmouth's 10,658 lb., being a difference of 2,376 lb., or two line-of-battle ships. With the exception of the Talbot's three quarter-deck guns, none of the shot fired at St. Jean d'Acre were less than 32-pounders, while at Algiers more than two-fifths were under that weight,—a most essential consideration in firing at stone walls.

[We perceive that in publishing the accounts of these brilliant achievements of our gallant countrymen, the daily journals have very justly attributed the great precision which has distinguished the fire of our ships beyond all precedent, to the effects of Captain Sir Thomas Hastings' tuition on board the Excellent, at Portsmouth. This is perfectly correct, and the highest credit is due to Sir Thomas, for the proficiency which has been attained by our officers and men, in this most important branch of their duty. But, we consider it no less our duty in conducting this journal, while we distinctly attribute to Sir Thomas Hastings, the honor due to him, to state that, we believe the credit of rearing so valuable a school of gunnery, as the Excellent has proved to be, belongs to Captain Sir John Pechell, Bart., one of the Lords of the Admiralty; whose experience as an officer, convinced him of the transcendant importance of such an establishment, and whose position at the Board of Admiralty enabled him to watch over its growth, till it had attained its present maturity.—Ed. N.M.]

General Remarks on the Gulf of Lepanto.

On entering the Gulf with a fair wind steer mid-way between Roumelia and the Morea Castles, and then gradually to the northward, until you bring the two paps of Cape Papas in the centre of the Castle Roumelia, and by steering with those marks on until you pass the mountain torrent on the southern shore (which bears S.b.E. by compass, from the Castle of Lepanto,) it will carry you clear to the northward of the shoal extending north-west from the mountain torrent. On passing the

torrent haul to the southward to bring the two paps on with the Morea Castle, and by steering with those marks on, you will go perfectly clear of the low point extending south-east from the Castle of Lepanto, and where abreast of the point Aluki you are clear of all danger.

On entering the Gulf with a foul wind which is very often the case, and it blows heavily, you should keep on the Patras shore, until you are able to pass well to windward of Roumelia Castle which has a small reef extending off it, and continues on to the town of Lepanto. Standing on you may fetch nearly abreast the town of Lepanto. The reef will give you warning where to tack by a man at the masthead, as it is deep water close to the reef; stand over to the southern shore until the two paps on Cape Papas touch the south extreme of Roumelia castle until you have passed the mountain torrent S.b.E. from Lepanto castle, after which to the eastward you may go close in shore.

When in the bay of Lepanto working to the eastward you should avoid opening the peak of Zacoli, (which bears S.E. ½ E., compass, from Point Aluki,) of Point Aluki, to keep you clear of the reef on the east point of the bay, and when off the southern part of the low point to the south-east of Lepanto castle, you may bring the peak of Zacoli on with the low land trending out to the eastward of point Aluki, the two paps on Cape Papas touching the south extreme of Roumelia castle clears you of the point, but rather close, there being a reef extending some distance out with deep water close to. After you have passed the low point both the shores continue bold and safe all the way up the Gulf.

G. BIDDLECOMBE,
Master H.M.S. Talbot, 1839.

ANCHORAGE OF VOSTIZZA.

THE low land to the eastward of point Aluki, with trees on it, continues on, and forms the western part of the bay of Vostizza, which bay is very deep. The anchorage for a large ship would be in nineteen fathoms, muddy bottom, with the flag-staff S.b.W., and the extreme of the bay N.N.W. ½ W. to E.b.N. ½ N.. compass. But vessels bound up the Gulf, blowing hard from the eastward, would do well to anchor on the eastern part of the bay in fifteen fathoms, mud and stones, with a large tree near the flag-staff on with the eastern part of the Bell topped mountain S.W. ¼ W., compass, and abour two cables off shore from which anchorage they would be able to go to sea with a westerly wind. If bound out of the Gulf, and blowing hard from the westward, you may anchor in fifteen fathoms, mud, with the eastern part of a walled garden, to the westward of the town, on with the west end of a brown house under the cliff above it, S.b.W. ½ W., compass, and in a line with the peak of the highest mountain, at the back of the town; two cables off shore from which anchorage you would be enabled to go to sea with an easterly wind, as the bay trends from the anchorage north-west. There is deep water all round the bay close in shore, except off the east and west points which have small reefs of stones running out about thirty fathoms, with two and a half fathoms on the extremity, and falling immediately into ten fathoms, mud, and at a short distance no bottom twenty fathoms. The anchorage is perfectly sheltered from the winds generally blowing, which are up and down the Gulf, and exceedingly strong, especially in the

winter months from the eastward. Water may be obtained with the greatest ease, as springs exist close to the beach all about the bay; at one of these springs to the westward of the town it was running at the rate of a ton in ten minutes, and very good. The town is small with a few well built houses situated on the top of a low hill, but, I believe, little is done in the way of trade, except in exporting currents, which are said to be very good.

G. Biddlecombe,
Master H.M.S. Talbot, 1839.

Report of Professor Daniell on the Waters of African Rivers.

[We are indebted to the enlightened mind of Sir John Barrow, Bart., for being enabled to communicate to our readers, the following very important reports of Professor Daniell, of King's College, London, on the destructive effects of the waters of certain African rivers on the copper sheathing of ships bottoms, and their connexion with the notorious unhealthiness of those parts in particular seasons. They will be read with peculiar interest by those officers who are, or have been stationed on the coast, and we have no doubt will prove a useful warning to the former, to be careful in not remaining longer than actually necessary in the rivers, and that they will stimulate them to assist the Professor in further experiments, by preserving bottles of water in various localities, according to his suggestions as to time of tide, &c. The test which the Professor proposes, we understand, has been sent out for distribution in the African squadron.—Ed.]

King's College, London, 13th April, 1840.

Sir,—In compliance with the directions contained in your letter to me of the 21st ultimo, I have now the honour to transmit to you, for for the information of the Lords Commissioners of the Admiralty, the results of my analysis of eight bottles of water taken up in the rivers, and on parts of the coast of Africa, together with some observations which have occurred to me, upon the extraordinary quantity of sulphuretted hydrogen which some of them contain, and its probable effect upon the copper upon the bottom of her Majesty's vessels on that coast.

Upon unpacking the case, one of the nine bottles which it contained was found broken, and the contents lost, It was labelled, "Water from the river Bonny, taken at seven miles from the mouth, by her Majesty's schooner, Fair Rosamond, on October, 1839, about the conclusion of the rainy season."

The rest were found uninjured, and properly corked and sealed. Each bottle contained about three imperial pints, and the water in all was perfectly bright, and had deposited very little sediment.

The first water which I examined, was labelled, "Water from the river at Sierra Leone, taken at three miles from the mouth, by her Majesty's brigantine, Dolphin, at low water, spring tides on the 24th day of September, 1839, during the rainy season.

(Signed) Edward Holland, *Lieut.-Com.*"

Upon drawing the cork of this bottle, it was found to smell very

strongly of sulphuretted hydrogen. The sediment in the bottle only amounted to 0·5 grains of vegetable matter. Specific gravity to 1018·5. The results of the analysis, calculated for the imperial gallon.

Sulphuretted hydrogen .	6·18 cb. inches.
Chlorine	943·14 grains.
Sulphuric Acid . .	82·70
Lime	19·14
Magnesia . . .	27·68
Magnesium . . .	32·71
Sodium	563·33
	1668·70

There was also a trace of potassa in this water.

The actual amount of dry salts obtained by evaporation, was 1696·0 grains. The difference between this, and the results of the analysis, is not more than usual in similar cases, and arises from the impossibility of determining the exact mode in which the several acids and bases are combined in the water, and from the difficulty of drying the salts without the decomposition of some of them.

2. "Water taken from river Volta, taken at twenty-eight miles from the mouth, (bearing north 67° 3′ W,) by her Majesty's schooner Fair Rosamond, latitude 37° north, longitude 1° 10′ east, on the 4th of September, 1839; season not rainy."

This water also smelt very strongly of sulphuretted hydrogen, the sediment in the bottle did not exceed 0·3 grains of vegetable matter. It contained per gallon

Sulphuretted hydrogen .	6·99 cb. inches.
Chlorine	1411·68 grains.
Sulphuric Acid . . .	92·47
Lime	14·75
Magnesia	35·70
Magnesium . . .	12·46
Sodium	916·20
Potassium	a trace
	2483·26
Specific gravity 1025·4	
Amount of Salts from evaporation	2480·0

3. "Water from the river Bonny, taken at anchor off the town in the river, by her Majesty's schooner, Fair Rosamond, on the 9th of October, 1839, about the conclusion of the rainy season."

This water smelled slightly of sulphuretted hydrogen, and the sediment in the bottle weighed only 0·4 grains, and consisted of vegetable matter. The results of the analysis, were per gallon,

Sulphuretted hydrogen .	1·21 cb. inches.
Chlorine . . .	970·92 grains.
Sulphuric Acid . .	92·10
Lime	17·36
Magnesia . . .	33·65
Magnesium . . .	47·11
Sodium . . .	553·06
Potassium . . .	a trace
	1714·20

Amount of Salts from evaporation 1788
Specific gravity 1019·0

4. "Water from the river Mooney, which empties itself in the north-east part of Corisco Bay, taken from about a mile inside the mouth, by her Majesty's brig Nautilus, September 4th, 1839. Rain had fallen, but the rainy season cannot be considered to have set in."

This water did not smell of sulphuretted hydrogen, nor did it afford any trace of that gas upon analysis; the total amount of sediment in the bottle did not exceed 0·1 grain. It contained per gallon,

Chlorine	1184·11 grains
Sulphuric Acid . . .	109·80
Lime	14·17
Magnesia	44·78
Magnesium . . .	28·54
Sodium	732·32
Potassium . . .	a trace
	2113·72

Amount of Salts from evaporation 2104
Specific gravity 1022·5

5. "Water from the river Gaboon, taken at four miles above Parrot and Konicky Island, by her Majesty's brig Nautilus, September 10th, 1839. Rain had fallen, but the rainy season was not considered to have set in. Latitude 0° 15′ north, longitude 9° 33′ east."

This water afforded no traces of sulphuretted hydrogen. The sediment in the bottle weighed 0·2 grains.

Chlorine	1130·75 grains
Sulphuric Acid . . .	120·08
Lime	23·05
Magnesia	43·58
Magnesium . . .	35·41
Sodium	683·00
Potassium	a trace
	2035·87

Amount of Salts from evaporation 2160·0
Specific gravity 1023

6. "Water from Cape Lopez Bay, taken by her Majesty's brig Nautilus, September 28th, 1839, when the Cape bore W.b.N about ten miles. The rainy season had commenced."

This water smelled very strongly of sulphuretted hydrogen. The sediment in the bottle weighed only 0·1 grain, and consisted of vegetable matter. It contained per gallon,

Sulphuretted hydrogen .	11·69 cb. inches.
Chlorine . . .	1467·37
Sulphuric Acid . .	115·20
Lime	23·21
Magnesia . . .	41·02
Magnesium . . .	28·44
Sodium . . .	921·60
Potassium . . .	a trace
Iodine . . .	a trace
	2596·84

Amount of salts from evaporation 2576·00
Specific gravity 1026

7. "River Congo,—water taken off Shark's Point, at the entrance of the river, by her Majesty's sloop, Wolverine, on the 11th of November, 1839, four days before the customary rains, but light rains having already taken place."

This water smelled very slightly of sulphuretted hydrogen. The sediment in the bottle weighed 0·4 grains, and consisted of vegetable matter. It contained per gallon,

Sulphuretted hydrogen .	0·67 cb. inches
Chlorine . . .	106·11 grains
Sulphuric Acid . .	2·30
Sodium . . .	70·00

And small quantities of other bases.
Amount of Salts from evaporation 188 grains

Specific gravity 1002·0

This is the only case in which the salts were discoloured by vegetable extractive matter.

8. "River Congo,—water taken about thirty-five miles up that river, by her Majesty's sloop Wolverine, on the 11th of November, 1839, four days before the customary rains, but light rains having already taken place."

This water contained no sulphuretted hydrogen, and the sediment in the bottle was only 0·1 grain.

The amount of saline matter was only 8 grains, per gallon, and consisted of the Chlorides of Sodium, and Magnesium, and Sulphate of Soda chiefly.

Specific gravity 1000·3.

The most remarkable circumstance disclosed by the analysis of these waters, is the strong impregnation of the majority of them with sulphuretted hydrogen; which, in the case of the water from Lopez Bay, amounts to almost as much per gallon as in the Harrogate waters. The proportions of the saline contents do not differ materially from those which are usually found in sea water.

The extraordinary presence of this gas, would naturally lead at first to a suspicion that it might arise from some change which had taken place in the waters after they had been bottled, from the decomposition of some animal or vegetable substance, but this suspicion is inconsistent with two facts. 1st.—That the waters became perfectly sweet a very few hours after the corks had been drawn. 2d—That with the exception of the very small quantity of sediment, mentioned in each analysis, the waters were perfectly free from any animal or vegetable substance, and the salts which they yielded upon evaporation, (with the exception of those from the Congo,) were snow white.

On the other hand, it is difficult to conceive how such a striking and important fact as the impregnation of the waters of the ocean, upon such a long line of coast, with this deleterious gas could so long have escaped observation. It is highly desirable, in many points of view, that its existence should be substantiated, and the limits of the phenomenon both along the coast and in the ocean, ascertained by further evidence. Its effects upon the copper-sheathing of ships cannot fail to be highly injurious, and a question of still higher interest even arises, whether this deleterious gas may not contribute to the well-known unhealthiness of the coasts, from which these waters are taken.

Upon searching for evidence of a similar phenomenon having been observed before, I have found in the Philosophical Transaction, for 1819, a memoir by the late Dr. Marcet, "on the specific gravity and temperature of sea-waters, in different parts of the ocean, and in particular seas, with some account of their saline contents." Out of sixteen specimens which he examined, he found one which was brought by Captain Hall, from the Yellow Sea, in the Chinese Ocean, which, from the account which he has given, must probably have been as highly charged with sulphuretted hydrogen, as those which I have just examined from the coast of Africa; and he observes, "there is something in the developement of sulphur in sea-water, which is by no means well understood," He also noticed, that a specimen brought by Mr. Schmidtmeyer, going to South America, from latitude 10° 50′ north, longitude 24° 26′ west, had an hepatic smell, and had blackened the bottle in which it was contained.

If the existence of this curious phenomenon should be confirmed, the origin of the sulphuretted hydrogen will probably be found to be the same, as that of the same gas in various saline lakes in different parts of the world, from which Trona or Natron is derived. The mud of the Lonar Lake in India, of a lake near Maracaybo, in South America, and of similar lakes on the north of Africa, are all found to be thus impregnated. The sulphuretted hydrogen thus adhering to the clay, has been supposed to be derived from volcanic sources, but Mr. Malcolmson, in an able memoir lately printed in the Geological Transactions, says, that he has observed "the same phenomenon in the salt water

inlets, along the Indian coast, wherever the bottom contained argillaceous and carbonaceous matter;" and he ascribes the effect to "the decomposition of the sulphates in the water by the carbon, and the clay only prevents its passing off into the air, or mixing with the water by the power of adhesion."

The subject is full of interest, both in a practical and scientific point of view, and well worthy of further investigation.

I have the honor, &c.

J. F. DANIELL.

To Sir John Barrow, Bart., &c.

King's College, 20th August, 1840.

SIR.—In compliance with the directions contained in your letter to me of the 18th inst., I have carefully examined three sheets of copper taken from the bottom of the "*Bonetta*," and transmitted to me by your orders, and have now the honor to report as follows:—

No. 1.—Labelled Bonetta, 1835; 6lbs. 2oz.—28 ounces.
2. " Bonetta, 1835; 6lbs. 4oz.—28 "
3. " Bonetta, 1835; 4lbs. 3oz.—28 "

All of the same dimensions, 4 feet long by 1 foot 2 inches wide.

Nos. 1 and 2 were pretty uniformly covered on the outside with a green crust; and on the inside, as evenly, with a black crust of equal thickness. They were very thin in parts, and here and there eaten into holes.

No. 3 was in a much worse state, very thin and eaten into large holes. In most parts it was easily broken by the fingers, one of the holes of an irregular shape, measured eighteen inches in length by four inches and a half in width. This sheet was covered with green crust chiefly on both sides; but there were evident traces of the black crust on the inner side.

Upon analysis the black crust was found to consist of sulphuret of copper, and the green of sub-chloride of copper.

Connecting these results with those previously obtained from the analysis of the waters on the coast of Africa, I have no doubt that the injury to the copper has arisen, primarily, from the sulphuretted hydrogen. The gas appears to have penetrated to the inner side of the copper, where in Nos. 1 and 2 it has been protected from the further action of the sea water; by which, on the outside, the sulphuret appears to have been converted into chloride of copper. This conversion appears to have taken place on both sides in No. 3, from the sea water having penetrated to the under side in consequence of its greater corrosion.

I have the honor, &c.

J. F. DANIELL.

To Sir John Barrow, Bart., &c.

King's College, Nov. 17th, 1840.

SIR.—I have analyzed the two additional specimens of water from the Western Coast of Africa, which you did me the favour to send on the

9th instant, and have now the pleasure to hand you the results, begging permission to make a few remarks upon the singularly interesting facts, which have been established by these and the preceding analysis.

The waters in every case were sealed with great care, and were perfectly preserved.

The first bottle which I opened was labelled, "Water from the river Bango,* taken at forty miles distance from the mouth, by her Majesty's schooner Fair Rosamond, on the 26th of December, 1839, in latitude 8° 33′ south, and longitude 12° 41′ east." The water emitted a very strong smell of sulphuretted hydrogen. It was tolerably clear, but contained a little gelatinous matter which resembled spawn of fish. The sediment of the whole bottle, however, when dried, only weighed fifteen hundredths of a grain.

The results of the analysis calculated for the imperial gallon, were as follows:

Specific gravity, 1026·4.
Sulphuretted hydrogen, 4·35. Cub. in.
Dry salts, 2736 grs.

Consisting of Chlorine 1513, Sulphuric Acid 128, neutralized by bases, which have not yet been quantitatively determined, but consisting of Sodium, Magnesium, Calcinon, &c.

The second bottle was marked, "Water taken by her Majesty's schooner Fair Rosamond, off the Bango and Dande Rivers, latitude 8° 29′ south, longitude 12° 33′ east, on the 29th of December, 1839."

Results of analysis, Specific gravity 1026·7.

There was no odour of sulphuretted hydrogen in this water, neither was any detected by tests. The quantity of dry saline matter, per gallon, 2624 grains, consisting of Chlorine 1430, Sulphuric Acid 125·4, neutralized by the same bases.

It would have been better if the state of the tide had been noted, when the specimens were taken,—for you will observe, that the water forty miles up the Bango, contains quite as much saline matter as that taken from the mouths of the two rivers, and both as much as the water taken from Cape Lopez Bay. The state of the tide must, I imagine, greatly influence the ingredients of the water near the mouths of rivers.

It is impossible not to speculate upon the origin of the deleterious gas, which has now been proved to impregnate the waters upon the Western Coast of Africa, in such enormous quantities, through an extent of more than sixteen degrees of latitude. The supposition that it may have been generated by the spontaneous change of any of the contents of the water after it was sealed up in the bottles may be set aside by the slightest consideration.

It appears to me, that there are only two sources to which it can with any probability be referred, namely, submarine volcanic action, in which case its evolution might be considered direct or primary; and the reaction of vegetable matter upon the saline contents of the water, in which case it would be secondary.

* The river Bango falls into the Bango bay to the north-east of St. Paul de Loando, and though the water analyzed was taken in one instance forty miles up the river, yet by Capt. Owen's chart, the positions given are more than thirty miles outside, (i.e. to seaward) of St. Paul de Loando.—Ed.

The probability of a volcanic origin is, I think, small, from the absence, I believe, of any other indications of volcanic action, and from the great extent of the coast along which it has been traced.

What is known of the action of vegetable matter upon the sulphates, and the immense quantities of vegetable matters which must be brought by the rivers within the influence of the saline matters of the sea, renders on the contrary, the second origin extremely probable. Decaying vegetable matter abstracts the oxygen from sulphate of soda, and a sulphuret of sodium is formed. This again acting upon water, decomposes it, and sulphuretted hydrogen is one of the products of the decomposition. You will perceive that there is a large proportion of the sulphates in the different specimens of water which have been analyzed, and there can be little doubt, I imagine, that extensive mud banks must be formed at the mouths of most of the rivers on the western coast of Africa, within the tropics, consisting chiefly of vegetable detritus in the exact state which is most favorable to the action which I have described. This view rests upon experimental evidence, and upon considerations of great cogency, derived from the unhealthiness of certain well known situations in which decaying matters from tropical vegetation are brought into contact with sea water. I feel more than ever convinced, that the evolution of sulphuretted hydrogen is intimately connected with the unhealthiness of such stations.

When this matter was first brought under my consideration, I was surprised that the nauseous smell which must necessarily be evolved from water impregnated with this gas, at so high a temperature as that of the equinoctial regions, had not been noticed. I have in consequence turned to some of the accounts of the late travels in Africa, to seek for evidence upon the subject; and in the narrative of an expedition into the interior of Africa, by the river Niger, by Macgregor Laird and R. A. B. Oldfield, I found the following important observations.

"The principal predisposing causes of the awful mortality, were in my opinion the sudden change from the open sea to a narrow and winding river, the want of the sea breeze, and the prevalence of the deadly miasma, to which we were nightly exposed from the surrounding swamps. *The horrid sickening stench* of this miasma must be experienced to be conceived: no description of it can convey to the mind the wretched sensation, that is felt for some time before and after daybreak. In those accursed swamps, one is oppressed not only bodily but mentally with an indescribable feeling of heaviness, langour, nausea, and disgust, which requires a considerable effort to shake off."

Now, these observations were made in the very locality from which some of the first waters, which I examined were taken, and nothing more is wanting to identify the cause of the rapid decay of the ship's copper with that of the mortality of the climate.

It has been experimentally found, that so small a mixture as a fifteen hundreth part of sulphuretted hydrogen in the atmosphere, acts as a direct poison upon small animals, and the sensations of languor and nausea, described by Mr. Laird, are exactly those which have been experienced by persons who have been exposed to the deleterious influence in small quantities.

The peculiar unhealthiness of mangrove swamps in all parts of the

world, I have little doubt, arises from that tree requiring salt water for its growth, and its decaying foliage being thus brought into immediate contact with the sulphates. The hypothesis also agrees with the fact, (which I believe has been established,) that the unhealthiness of such situations does not extend to any considerable distance from the sea.

I am afraid of trespassing too much upon your valuable time, but I cannot conclude this report without suggesting to you the expediency of directing the surgeons, or other officers of vessels frequenting these coasts, to test the waters for sulphuretted hydrogen at different distances from the coast, and at different periods of the tide, and to make regular reports upon the subject. The test of a little solution of sulphate of copper, (or blue vitriol,) would be sufficient, and could be applied without any difficulty. Much valuable and practical information might be thus acquired with little trouble, which if it did not lead to the means of correcting an atmosphere so infected, would at any rate indicate localities to be avoided entirely, or only at particular seasons.

The commanders and other officers of expeditions for exploring the coasts of Africa, should be directed to bestow particular attention upon the subject, and at all events not to linger in situations where the water affords indications of the noxious gas.

I have the honor to remain, &c.

J. F. Daniell.

An instance in which the same deleterious gas, namely sulphuretted hydrogen, was produced in a very serious degree from mercury, has also been pointed out to us by Sir John Barrow. In the year 1810, H.M.S. Triumph, commanded by Capt. Linzee, received on board thirty tons of quicksilver, in leathern bags, which from being wet, rotted and burst, and their contents became diffused through the ship, affecting to salivation about two hundred officers and men. The smell of the bilge water was so offensive, that even the carpenter's mate had much difficulty in sounding the well, being attacked with giddiness to an alarming extent. The ship was cleaned well out, and sweetened; but it became necessary to send many hands to the hospital at Plymouth, and Dr. Baird was called on to report on the subject. After giving his own opinion in writing, he forwarded to the Secretary of the Admiralty the following statement of Dr. Pearson, teacher of Chemistry on the cause of the noxious gas.

"From well established principles, as well as analogies a reasonable explanation may be given of the effects attributed to thirty tons of quicksilver exposed on board the Triumph in bilge water, with rotten leather in bags, in a hot climate, in the beginning of summer.

"The stinking gas which was generated, was sulphuretted, and, perhaps, phosphorated hydrogen gas, mixed with carbonic acid, and, perhaps other gases; compounded by the putrefaction of animal and vegetable matter, the deadly suffocating effects of which are fully ascertained, unless mixed with a large proportion of fresh air; and the tarnishing of

metals at a great distance even mixed with fresh air in a large proportion, is a well-known effect of sulphuretted hydrogen.

* * *

"It will be understood that the sulphur and phosphorus are furnished, probably, by the decomposition of sulphuric and phosphoric acids, always present in all kinds of animal matter. The hydrogen gas is furnished by the decomposition (chiefly) of the water. The carbonic acid is compounded by the union of the charcoal of the animal and vegetable matter, with the oxygen principally of the water.

"The stink is now imputed to the mixture of sulphuretted and phosphoretted gases, with putrefying matter. If the leather bags of quicksilver had been kept dry, they would not have putrefied, but probably would have retained the metal, and the above effects would not have happened."

G. PEARSON,
George Street, Hanover Square,
August 9th, 1810.

To Dr. Baird.

OBSERVATIONS ON THE SHINGLE OF THE BRITISH CHANNEL AS AFFECTING BAR HARBOURS.

SIR.—I am induced to offer a few remarks relative to the shingle of the English channel, because (like Lieut. Evans,) it has often engaged my attention; and because it is a subject replete with interest, and its investigation by men of *different opinions*, must assist in developing facts of infinite importance to civil engineering, in the construction of New Harbours of Refuge, or the improvement of such as are rapidly going to decay.

I should most willingly concede to Lieut. Evans the possibility of removing the shingle from the entrances of bar harbours, if in such an operation we were moving in the same course with dame Nature, for while the old lady invites us continually, by following her, to assist and benefit ourselves, *she* most resolutely opposes any attempt on our part to stay *her* progress; and thus it is our easiest method to *advance* where *she retires*, and to seize every vantage ground she leaves open to us. Reasoning thus, I believe, that where she presents us with a bank of shingle, or a mound of earth, it would be *less* laborious, and consequently *less* expensive to secure it by the addition of artificial means, than to carry it away to another site, more especially in situations where *her* efforts would be incessant, and *her* supplies comparatively inexhaustible. Let us, as respects the shingle, take Dover as an example, that being a position of undeniable consequence as a port contiguous to France, and being of all others most seriously inconvenienced by this said shingle.

Now, I am of opinion, that if *half* the sums expended in fruitless attempts to sluice and blow it out, and carry it away into deep water, in order to preserve the entrance to Dover harbour, (I repeat,) if half *those sums* had been appropriated to the erection of a *jetty* and *groin* to the *south-westward* of the piers, and if these extensions *outward* into deep water had been conducted by a skilful engineer, in accordance

with known natural causes and effect, that Dover might *now* possess one of the best artificial harbours in Europe,—and protected by fortifications in every way suited to its importance. I am aware that the owners of property on the marine parade, (which encircles the bay,) will exclaim against this, because the very shingle bank which *ruins* the port, is a bulwark of *safety to them*, but the bank and beach they at *present* possess might also be secured *to them* by groins and jetties,* But what would these good conservators of the Cinque Ports say to Lieutenant Evans plan, (if practicable,) for taking up these millions of tons of shingle, and moving it into the interior for the manufacture of glass and pottery, or the repairing of the roads! Why the whole town of Dover stands upon *shingle strata!* The sea, in ancient times flowed up into a haven, and as it beneficently deposited its shingle along the base of the cliffs, the natives located themselves upon its surface. The hovel of the smuggler and fisherman first consolidated the soil upon which the opulent and flourishing town of Dover now stands. I have before me a plan of Dover harbour, as by survey, made in the reign of Elizabeth, and its evidence is conclusive, that as the beaches were thrown up and increased, there remained but one alternative to manual labour in the continuance and formation of its harbour, and the piers were from time to time advanced. In this process, harbours become the nucleus of *valuable localities*, a national gain, because wrested from the sea,—and surely it is EASIER to secure and consolidate a bank of shingle, than to take it up and transport it by land to any distance, however inconsiderable. It is fighting with natural causes, in lieu of turning them to account and directing their effects. I am not alone in *my opinion*, that the piers at Dover should be again ADVANCED and carried out into deeper water.†

Lieutenant Evans recommends the employment of convicts, in the removal of the shingle to a distance from the port, but labour of that kind, (or slave labour,) to be available, must be stationary; a single sentinel can guard a *gang* of pile drivers with more security and ease than a detachment of rank and file would a gang of the same description traversing to a distance, with the necessary vehicles of transport.

* The pent at Dover, which takes its name from water pent in, or shut up, as in all wet docks or reservoirs, has been formed by the bank of shingle thus deposited along the line of the bay. This bank turned the little river Idle from its natural course, along the base of the cliffs, till it issued where the mouth of the present harbour exists. When Mr. Pitt was Lord Warden, it was in contemplation to cut through this bank, restore the backwater to its natural course, and run out two parallel piers into the deep water of the bay. The sacrifice of property would have been great, and the expense enormous; and so tenacious were the authorities of the preservation of this bank, that the inner side of it was not allowed to be excavated, for the formation of docks or slipways. Mr. Divine, in or about the year 1802, had commenced a building slip, but on his disturbing the inner surface of this bank, the backwater which had been shut in for scouring the harbour entrance, was sensibly diminished by drainage, as it escaped through the shingle into the bay. His work was stopped, and the site of his timber yard, and the old rope walk, are now covered by splendid mansions.

† Lieut. Worthington's plan, and others, contemplate the extension of the south-west pier. If an open jetty of timber succeeded, it would be well; and if not, it would be easy to form dickey works on its exposed side, with this very shingle bar, on the principle of the Dutch embankments, or the Dimchurch wall.

It appears to me, that our harbours have become what they now are, entirely from neglect, and this neglect has been super-induced in most instances by cupidity. Engineers, and Inspecting Directors of havens and harbours, should have no *local* interests to warp their judgment, or affect their operations,—but who, let us ask, are usually the conservators of our havens? The mayor and jurats forsooth, or in other words, the land-owners of the embankments, whose interest it is to *win* from the waters, and to advance *their* boundary at the *expense* of the navigation.

But to return to our shingle banks of the British Channel, they are called migratory and "roaming pebbles;" I believe they would be so, if the ocean tide had but ONE direction. If it was all an *eastern set*, and no reaction, the coasts of Holland and Belgium would have been blest with all the shingle which we so continually complain of. But the ebb and flood are so *nearly* proportioned in *their* effects, that the nature of our soundings in our charts are unaltered and decisive.* It is very natural it should be so; a body of water traverses *periodically* a strait or a channel, if the *time* occupied in one direction exceeds that of the other, a compensation for *time* is given in the increased *strength* of the receding current, and the action and reaction is thus equalized, the quantity being the same. This being admitted, our shingle beaches are more local, than might be at first imagined. It is this action and reaction also which continue the Goodwin and other sands, in their all but *primitive form* and *station*; for before their innumerable particles have advanced *far* with the flood, the retrograde motion of the ebb returns them to their original *position*. But for this, the alteration not only in *depths* of water upon our shoals, but in the *nature of the bottom*, would be ever changing and *perceptible*. Let us take Sandwich and its haven, as another demonstration of the local nature of the shingle banks. Sand-Wick or Sondwich, is so named from the sandy peninsula upon which it formerly stood, and the last ten centuries have not altered the geological features of *its strata*. The sand hills it is true are further from the margin of the sea, because the course of the Stour has been neglected, and encroached upon *by the landholders*. But we find in the same ancient records, thus correctly descriptive of Sandwick, a neighbouring port called Stone Arr, or *Stony shore*. This arm of the great estuary, called the Wantsum, was choked up by shingle, and the banks of sea beach may be now seen for miles into the marshes, protruding through the green pasturage in isolated spots or patches,† But, if we commence our investigations from the haven entrance, throughout its whole vicinity, we shall get our soundings upon a clean chalk bottom, without a trace of any deposit from which the shingle could have been derived.

Again, Deal beach is of a corresponding character, but it does not

* What immense accumulations of granite boulders are heaped up by the sea on the inclined planes of the Scilly Islands: the soundings between these islands and the Land's End will prove that they are local, and not migratory.

† Oral tradition ascribes this change, in part, to a severe convulsion of Nature in the reign of Edward the confessor, followed by a second in that of William Rufus, when islands on the English and Dutch coast were destroyed, and the mouths of many havens choked up, and the rivers turned from their course.

extend even to the anchorage close along shore. There is a Boulder bank off Walmer Castle, but there are no boulders in the Small Downs. The ground there is a stiff blue clay, terminating to seaward in deep water upon a clean chalky bottom, till the Goodwin Sand meets it, upon which you may search in vain for a pebble or a shell. Now this would seem to warrant Lieutenant Evans plan, but although it is thus shewn to be *circumscribed in extent*, yet its quantity is *immense*, and the safeguard it affords to our shores in neutralizing the effects of the surf is invaluable in a national point of view. Where no shingle rests along the base of our chalk cliffs, the annual waste is almost incredible. But this waste, great as it is, has very little effect upon the accumulation of shingle, for independent of the immediate seizure of the flints at low water, for building walls and houses. The shoals formed by those which are drawn off into deep water, are of a different character to the pebbles which constitute the shingle banks, and the adamantine hardness of the silex or flint, would require ages of attrition to grind away the superficies which characterise them.* It is then very natural that we should seek for their probable origin, and I think we should not have to look far.

If we examine the geological features of our country, we shall find immense deposits of these antediluvian pebbles heaped up in extensive tracts along the scarp, and in some places aspiring even to the summits of our hills. Without detailing instances from our inlaid counties, let us take a line from the Highgate tunnel, which was excavated through a bank of shingle, containing perfect specimens of the lobster and other crustacea, and follow that line across the Thames and Medway, over to that extraordinary bank which extends into the British channel at Dungeness. We meet with it again in Greenwich and Westcombe parks, and at Woolwich through the valley towards Folkstone ; in isolated patches in Romney Marsh (similar to those at Stonar and in Canterbury vale,) and terminating at last in the sea at Dungeness. Now all these pebbles have a corresponding character, they are more opaque than the silex of our present chalk cliffs, and I believe they are a diluvial deposit from antediluvian formations. Be this as it may, it is reasonable to infer that similar geological features, under water, are the storehouses from whence the shingle bars of our harbours are derived; and it would appear a hopeless task to remove them by convict labour, even with the aid of steam power, while, if properly attended to, and secured, they might form a material for extending our sheltering mole heads, enlarging the capacity of our havens, and redeeming from the waste of waters much valuable property. It is strange to perceive that the ancients paid more attention to this than the moderns. The sea once laved the walls of Richborough castle, and an inspection of these venerable ruins will shew that massive and lasting as they are, their enduring materials are a mixture of chalk rubble, flint, shingle,

* Many thousand tons annually are taken away at low water from the shoal near Ramsgate, called the Dike, these are large flints, covered with limpets and sea worm and weed, yet although the action of the water upon them is incessant, their rugged form is but slightly changed. They are as unshapely as those still imbedded in the chalk strata, and there is no shingle among them. In all the shingle banks I have seen, recent deposits are few, and may easily be selected from the primitive pebbles.

and sand, held together by a concrete of shelly lime. There they stand in rough sublimity, the hoary witnesses of a thousand years, while a half century consigns much of our smoothly worked and highly-finished masonry to premature oblivion! The ancients worked in the gross! We have greater advantages and neglect their example. A row of iron cylinders in which timber piling might be inserted at a proper level for necessary repairs, might be driven through a bank of shingle, for the extension of a mole head or pier. Masses of chalk and flints concreted upon the upper strata of the shingle would bind it together, and in this way advancing upon the sea line, deep water entrances, might in most instances be secured to the mouths of our harbours.*

With respect to the waste and refuse of the Portland quarries, Lieut. Evans says, with great justice, the legislature ought to interfere, to prevent their being thrown over where they may be prejudicial to the navigation! and so it should be, wherever any injury may be inflicted, legislative power should be exerted. How many millions of tons of ballast have been thrown overboard in the vicinity of our northern ports, by the fleets of colliers, preparatory to entering for their cargoes of coal, merely to save the expense of landing it, while there are few rivers or havens thus frequented, whose breakwaters or embankments could not be improved by a judicious application of this material.† I think the examination of the line of strand and contiguous roadsteads, and havens of the British Channel has been going on time immemorial, and there are few pilots or masters of coasters, but could tell you the nature of the bottom where he is about to anchor. The Channel charts are also *correct in their delineations* and recent surveys, and every day soundings by ships passing through are a test of their accuracy; but, let the shingle be derived from whence it may, I fear it would be impossible to remove it from the coast into the interior, (as proposed by Lieutenant Evans,) without incurring a far greater expense than he imagines; and that outlay would be more beneficially employed in the construction of piers, groins, and jetties.

By his plan the sea would be assisted in its encroachment, to the ruin of much valuable property. By the extension of well constructed piers, we should add to our present possessions, and be it remembered that in many instances this is an actual return for the capital invested. Sandwich and Rye havens are silted up, but will any person doubt the practicability of rendering them once more navigable by straightening their channels, increasing their depths, and enclosing the muddy flats in their entrances, thus redeeming from the sea many thousand acres convertible into rich and fertile pastures.

* I am of opinion, that piling is not sufficiently assimilated with masonry in our harbours. Holland and Belgium exist only in proportion to the perfection of their jettys, piers, and groins, and experience has taught them that nothing so effectually neutralizes the raging surf which beats incessantly on their shores, as timber piers and open piling.

† Perhaps there is no place on the whole coast of England, where refuse stone could be more advantageously employed in the construction of a breakwater than at Portland. The whole of the small Downs might also be converted into a splendid anchorage, (as recommended in my pamphlet on harbours of refuge.) There are not more feet in depth of water on the brake and its line of shoals, than there was fathoms, where the breakwater at Plymouth is constructed. The freight during time of peace from the nearest quarries would be easy enough.

I have offered these few remarks with a view to elicit further inquiry into this interesting subject, and while I differ from Lieut. Evans, as to the derivation and removal of the shingle, I admire the spirit which I trust may urge him and others to further investigation, and to decisive results.

K. B. MARTIN, *Harbour Master.*

Ramsgate.

VOYAGE OF H.M.S. BEAGLE, ON A SURVEY OF THE COAST OF AUSTRALIA.—*By a Naval Officer.*

(Continued from p. 857, of vol. for 1840.)

WE left Port Philip on the 25th November, and with a moderate breeze from the eastward, with fine weather, coasted along towards Cape Otway, from one to four miles off shore. Westward from Point Londsdale for five leagues the coast is low and sandy, and forms a rather deep bay, about the centre of which is the flat topped hill before mentioned,—a remarkable lump of land, a hundred and fifty feet high, curiously situated on the beach with a reef of rocks extending a short distance off it.

About a league from this hill is the embouchure of the river Barwin; on the banks of which is situated the town of Geelong. It was with much difficulty it could be distinguished, for at this time of the year it merely filters through the beach into the sea, and I question, if at any time, it has sufficient strength to make an outlet for itself, sufficient to admit even a small boat.

At the end of this sandy bay, the feature of the country changes to high sloping downs (to all appearance well adapted for grazing,) terminating in bold cliffy projections, with small sand bays between; until abreast of Cape Patton. From thence there is a sudden change to high well-wooded hills, the slopes of which reach to the sea coast and give it a rocky outline.

These hills run towards Cape Otway, becoming gradually lower as the Cape is approached; indeed it may be said, that Cape Otway, a bluff headland four hundred feet high, is the termination of this range of hills.

About two miles E.N.E. from Cape Otway there is a low sandy point, with a few rocks extending off it to the south-east, to the distance of half a mile; there are no other dangers that we saw along this coast, neither is there any spot that a vessel could lie sheltered in. A small stream of water was seen running from the heights, on the south side of a rocky point a few miles to the southward of Cape Patton.

Leaving this part of the coast, our course was shaped for the north end of Kings Island, but the wind fell light during the night, so that by the morning the current had taken us considerably to the westward, and it was not till late in the afternoon, with a south-west wind, that we reached the bay between New Years Isles and the north part of Kings Island.

We were surprised on anchoring, to find a neat looking cottage on some rising ground at the south-east corner of the bay, and immediately

after to perceive a fire on the northern islet; the glasses were soon turned in that direction, and a party was observed with a red flag hoisted in the bow of a boat hauled up on the beach.

Of course there were numerous conjectures as to what they were, we had heard of there being runaway convicts on Kings Island, but could hardly suppose they would readily disclose their hiding place; and as no intimation had been given us of settlers being in this neighbourhood, we could only suppose them the survivors of the crew of some unfortunate vessel that had been wrecked; and we became naturally anxious to relieve them.

However, on landing, our doubts were put an end to, by learning that the cottage, seen in the distance, was the residence of a retired officer, (a Capt. Smith,) who had settled there from Hobart Town, about three years since, and the island party were his sons, with two labouring men, collecting the mutton bird and eggs for the family's consumption.

The following day Capt. Wickham went over to the cottage, and found every thing, although on a small scale, still in a prosperous and flourishing state. Capt. Smith had preferred this bay, as being the best anchorage on the island; and out of compliment to the governor of Van Diemens Land, had named it Port Franklin.

It certainly cannot be said to merit the name of a port, yet it is a tolerable stopping place, only exposed from north to north-west. We anchored with the north end of the northern island bearing W.N.W., half a mile distant in ten fathoms water.

There is convenient landing at all times on these islets, and abundance of fresh water on each of them.

Having completed our observations by the return of the boat from the cottage, we weighed with a fresh breeze from the north-east, and stood along the west side of Kings island, about a league from the land; and by half-past seven came to a tolerable bay on the north side of a cliffy point about two leagues from the south extreme of the island. This appearing a good stopping place for the night, the anchor was dropped in sixteen fathoms on a mixed bottom of sand and clay, a mile from the nearest shore.

The coast passed along this afternoon had a most uninviting appearance, the land was moderately high with a number of barren leafless trees, having more the appearance of stakes driven in the ground, than animated nature.

These heights slope gradually towards the rocky outline which is much cut up by the heavy sea that is constantly rolling in upon it, and to add to its forbidding aspect to the mariner, innumerable scattered rocks lie off it, in one place (about the centre of the island,) to the distance of a league.

At noon the next day, the wind set in from the westward, the anchor was again weighed, and with a freshening breeze we reached the Bay of Seals at four o'clock.

Between these bays the coast is bolder and more cliffy, falling gradually towards the south extreme, which for the last two miles is merely a sandy spit with a few hillocks upon it, and terminates in a flat ledge of rocks on which the sea breaks with great violence.

The tide runs strong round this point, and when the wind is fresh a stranger is led to believe a long reef runs off it; we were deceived by this appearance, and stood four miles to the southward of the point before hauling up, but from what I afterwards saw from the shore, I do not conceive any danger to exist at the distance of a mile from the extreme.

Seal Bay is situated on the east side of this point, and affords a tolerable anchorage with westerly winds, but if more southerly than south-west, a tumbling sea sets in. It blew fresh from S.S.W. during our short stay, and as we lay in eight fathoms with the point on that bearing, it was far from being a comfortable situation; a small vessel might lie in safety sheltered by the point as far as S.S.E. The only danger on entering this bay, is from a sunken rock that lies half a cable to the south-west of the Seal rock, which latter may be passed on either side; from thence the water shoals gradually to the sandy beach in the depth of the bay. No fresh water was seen here, but as the small sized kangaroo are plentiful, no doubt there is a supply in the neighbourhood.

The object of our anchoring here being for observations, the following day, soon after noon, we again resumed the examination of the coast. From hence it trends to the north-east for several miles, alternate ragged rocky points and small sand bays, fronted with numerous outlying rocks, and surmounted by thickly wooded hills from three hundred to five hundred feet high. This indeed is the general feature as far as Sea Elephant Bay, about half way up the east side of the island. We anchored at sunset, with the south point of this bay bearing south, in seven fathoms sandy bottom.

It had been arranged that the following day should be devoted to an excursion, in the interior of Kings Island, for hitherto there had been no opportunity of becoming acquainted with its soil and productions, except from the information of Captain Smith at Franklin Road; but, as ill luck would have it, the wind shifted during the night to north-east, and caused a chopping sea, which cut off all communication with the shore.

As this was no place to be caught by an easterly gale, we weighed at eleven in the morning, and shaped a course for Hunters Isles, but had not been long under sail before the wind died away, and the ebb tide carried us to southward, at the rate of two miles an hour.

By six o'clock, we were within two leagues of Reids Rocks, a dangerous cluster lying several miles south of the south-east point of Kings island, and as the tide still ran strong towards them, it was not without an anxious look, that we scanned the horizon with the hope of a breeze. This came on with the change of tide, and by ten p.m. carried us within two miles of Albatross Island, when it again fell calm, and the flood tide set us rapidly to the northward.

Daylight found us off the north end of Barren Island, and with a fresh westerly wind we stood in between it and Three Hummock Island, and came to an anchor in four fathoms, in a sandy bay, on the west side of the latter.

From this date, Dec. 3d till the 12th, the time was occupied in putting together the work already collected, and examining the extensive

bay formed by the islands we were between, and the coast of Van Diemens Land. The spot selected by us proved to be the safest and most convenient anchorage, for although the weather was bad in the extreme, (hard gales from the eastward,) yet the strength of tide midway between the islands, prevented the sea getting up on the lee shore, (when the wind shifted,) off which we lay, and which was subsequently found not to be the case on the opposite shore, with a fresh easterly wind.

However the anchorage off both of these islands may be considered tolerably good, as far south as the extreme of Hummock Island. From thence as you approach two small islands, shoals and sand banks begin to make their appearance, and stretch in to the shore of Van Diemens Land.

The party examining the depth of this bay under Mr. Fitzmaurice, in the yawl, were agreeably surprised at finding a small settlement near Cape Grim; and as we had no previous knowledge of such being the case, it was with much pleasure they learned that it was a detached branch of the Agricultural Company, doing exceedingly well, their crops were in a favorable state, and the cattle and sheep thriving sufficiently well to enable them to supply our vessel, which they offered to do.

Several ineffectual attempts were made to penetrate the thick brushwood with which these islands are covered. A lake of fresh water, a mile in circumference was found at the back of the long sandy beach on the north-west side of Hummock Island. A few wild ducks were shot whilst hovering round it, these with some sea birds, and a few fish were all that was found among the Hunters Isles. The soil is chiefly sandy, except where the heavy rains have deposited the mould from the hills.

There is an excellent watering place immediately south of the first rocky point on the west side of the island, and abundance of wood surrounding the wells. We found the remains of a foreign built vessel of about a hundred tons burthen thrown up on the beach off which the ship was moored.

In order to ascertain the practicability of sailing to the southward of Barren Island the vessel was moved on the 12th, about half way along that island, and came to an anchor in four fathoms on a sandy flat, running off it towards Robbins Island, and sweeping round to the south till it joined the small lump of rock called Stack Island. A boat was detached for the examination of the above passage, and found it strewed with rocks just above, and even with, the surface of the water; and although there was upwards of twenty fathoms water between Barren Island and Cape Grim; yet it presented too forbidding an aspect to attempt to pass this way out to sea.

We had another hard blow whilst here, from the S.S.W., but on the 15th it was moderate enough to carry double-reefed topsails; therefore, the anchor was tripped, and we sailed round, and completed the examination of Three Hummock Island, and in the evening came to, in four fathoms on a bank extending to the north-east of three small islands off the north end of Robbins Island.

The next morning by eight we were again underway, standing towards Cape Gayton, the east extreme of Robbins Island, and by noon the anchor was dropped in seven fathoms, a mile to the northward of

the south-east extreme of the island. From daybreak the weather had a threatening appearance, and before our sails were furled, it blew a hard gale from south-west, which gave us some concern for Lieut. Stokes, who had left the ship early in the morning to examine more minutely the part we had passed along to-day; but our fears were put an end to by his safe return about four o'clock, most thoroughly drenched.

It blew a strong gale from the south-west the two following days, and prevented the space between Robbins Island and Van Diemens Land being sounded, but from its appearance I should not imagine that a vessel of any burthen could pass between them, for sundry shoal patches were seen, in addition to sand banks that dried at low water.

Robbins Island generally speaking is low, with grassy sand hills, but inshore of Cape Gayton there is a ridge of well-wooded hills, about four hundred feet in height. With the exception of the bank stretching off the north-east extreme, nothing was seen to prevent a vessel standing within half a mile of the shore all along the east side, and the anchorage is good any where off it.

On the 18th the weather having moderated, we weighed at daylight, and ran along the low sandy coast of Van Diemens Land, towards Circular Head, and in rounding the north-west extreme, the ship grounded on a stoney ledge, half a mile from the shore. This was caused by the sun being immediately over the land, which deceived us in the distance off; fortunately the water was smooth, and the tide about to flow, so that with the exception of a few hard thumps which slightly damaged the false keel, nothing occurred worth noticing, and she floated off at half-past eight, two hours from the time of grounding. We then resumed our course to Circular Head, and by noon came to an anchor in a sandy bay, close under its north side, in seven fathoms water.

This remarkable and appropriately named headland is situated on the east side of a promontory jutting out from the main land of Van Diemens, and almost separated from it by narrow creeks making their way into the low connecting isthmus. It is a rugged precipitous hill, many feet high, slightly curved at the top, which is thickly wooded; and from seaward resembles a large twelfth cake.

On each side of it there is a sandy bay, where vessels may anchor sheltered from westerly winds, but with any easting in the wind no vessel of burthen could lie in security, at least in the northern one; the settlers hold up the one to the south as being perfectly secure; it may be so, but from its confined space, one would hardly like (with a large ship,) to put it to the test. A small wooden jetty is run out here, where small craft can lie alongside and discharge.

On a hill over the north side of the bay we anchored in, is situated the town of Hyfield, the establishment of the Van Diemens Land Company, under the superintendence of Mr. Curr. It consists of about ninety persons, and is formed for the sole purpose of agriculture; the profits of which are reaped by the Company alone. We found the superintendent absent on business; but were kindly welcomed by Mrs. Curr, by whose directions, all that was likely to interest in the establishment was freely shewn.

It was pleasing indeed to see the flourishing condition of this little colony; every thing appeared of the best description; and in the finest possible order. The ground in the vicinity of the town is only partially cleared, yet neatness and arrangement everywhere met the eye. The only thing that seemed a little out of unison, was the extensive scale of the superintendent's house and gardens, with a park adjoining, in which we observed several deer feeding; but as general happiness appeared diffused throughout, this is of little moment.

EXCURSION TO THE LAKE OF NICARAGUA UP THE RIVER SAN JUAN.—*By Mr. George Lawrance, Assistant-Surveyor of H M.S. Thunder, Com. E. Barnett, in March*, 1840.

(Continued from p. 864, of vol. for 1840.)

TO-DAY we passed two creeks, where there are settlements of Palo de Arco or Ajo Indians, why so named, I have not been able to learn, unless from the circumstance of their using the garlic wood, (as the latter name would seem to imply,) with which the Indians sprinkle their huts in their exorcisms. This tribe has been much persecuted by the Nicaraguans, and still maintain their independence. One, whom we concluded to be a chief, from his fantastical head dress of macaws feathers, and general appearance, was loud in his professions of friendship towards us as *Englishmen*, and insisted upon knowing our names, which it appears is a practice among them to adopt of every stranger they take a fancy to. The Padrone said he was in the habit of meeting one on this river, whom he identified as the same individual, but never under the same name; in the short space of a month he had assumed no less than four or five cognomens.

The banks of the river since we left the Toro Rapids were low and swampy, more particularly so abreast of the Isla Grande, where the thick grass and palms render landing quite out of the question; there are a few trees on the south side.

To level this part of the river, would be a work of great labour, in fact, I doubt if fit spots could be selected for stations, without having recourse to artificial foundations. Here we saw numerous birds of the grallator tribe. Much dew and little wind all night.

Thursday, 12th.—Away at daylight,—general features of river the same as yesterday,—stream flowing three-quarter knot. At 7h. 10m. reached Isla de Canon, an hour after passed the Isla Padre. Here we first caught a glimpse of the lake, and the low point of San Carlos. Stream at the same rate as yesterday,—river about a cable's length wide.

At 9h. A.M. we landed near the huts of San Carlos, distant 104 miles from Point Arenas, and immediately got observations.

On enquiring for the commandant, I was gravely informed by a ragamuffin looking soldier who received us, that he could not at present be seen, having with his wife made too free with the bottle! Surely thought I, there is a time for all things, and we had recourse to patience. Finding that our voracious "Ramas" had reduced the

salt provisions to a solitary half piece, I sent the Padrone to purchase some jerked beef and plantains.

With the exception of a long nine and a half foot brass 18-pounder lying dismounted on the beach, we could not discover any appearance of a fort on this point, till conducted by our Padrone through a wilderness of bush we came to the castle of San Carlos, once considered the Gibraltar of the lake, but now a heap of ruins, and so entirely overgrown and surrounded with trees, that it cannot be seen from any point in the neighbourhood, although only a few yards distant from the beach. When first built, and in good order, it must have been a formidable little place, having commanded the river for at least two miles; but the motto, *tempus edax rerum* was here verified. Its guns are now quite unserviceable; the walls appear to have been composed of small stones, gathered near the spot and cemented together; the general figure is oblong, it is surrounded by a ditch, and strengthened with piles. The officers quarters appear to have been situated within the walls.

There are also three dismounted guns, two of which are brass, and several piles of shot, lying strewed about in all the infamy of inglorious rust. This appears the most commanding position of the river, although its elevation is only about fifty, while that of the fort is one hundred feet.

On our return from visiting these remains of Spanish grandeur, we were met by a coloured man, saying "that the commandant wished to see us." I immediately repaired to his quarters, and found him extended on his cowskin couch, looking very "seedy" and debauched, attended by his wife, who grew extremely loquacious in prompting the questions which her poor bewildered husband put to me. Having explained to him the object of our visit, he appeared to be quite satisfied, and insisted no longer on a passport which he at first demanded: such a burlesque on military authority I never saw.

Whilst breakfasting on the beach we were highly amused, and not a little surprised to see half a dozen decent looking women, escorted by two as respectable men, deliberately strip themselves of all their habiliments in the most unblushing manner, and then commence their morning ablutions, totally regardless of us, or of their own companions; a proof perhaps, that innocence knows no shame, rather than a want of modesty. The whole village does not contain more than six huts tenanted by only four families, so that with the exception of the old commandant and his better half, we must have seen the whole population on this interesting occasion.

From the Morro point we distinctly saw the peaks of Madura and Ometape rising abruptly from the lake, conical and well defined, the heights of which we subsequently found by calculation to be 4,190 feet for the former, and 5,050 feet for the latter.

In the afternoon the sky was completely overcast, and we had to wait till the next day for equal altitudes. My attention this afternoon was attracted by a sudden reflux of the waters, the lake, having fallen nearly a foot since we landed, this the Padrone said was owing to the wind, which during the day had been blowing rather fresh at S.E.b.E. At night musquitos very annoying—dew falling heavy.

Friday 13th.—We noticed here the remains of a Catholic church or chapel, and its great bell that was wont to arrest the pious traveller in his journey to and from the Lake, now lies prostrate at the foot of the belfry, still in a good state of preservation; but evidently having long since ceased to wag its monitory tongue! The remains of a sort of pavement seem to indicate the site of a considerable town.

The bongo we passed two days ago, arrived at this place this morning, and a canoe laden with corn and other provisions from the Island of Solentinane, where it is said there are several agricultural settlements. Her crew consisted of three women and a male coxswain. The former paddled, and appeared to be quite adepts in their occupation; they were remarkably clean in their dress and person, the latter by no means deficient in point of beauty; but I cannot say so much for their modesty and moràle.

The commandant must have been, either very studious, very sleepy, or very tipsy, for we did not see the light of his countenance, nor hear of him since our audience of yesterday. In such a place as this he cannot often have an opportunity of showing off his importance, and on that account one would have expected a little more attention and civility, but, perhaps, he had not yet recovered from the effects of his indulgence. We remarked this morning that with the wind at E.N.E. the lake had again risen to its former level, proving that the Padrone was quite right.

Sounding round the Morro Point, I found that the depth varies from one and a half to two fathoms; the best guide in the dry season when there is only six feet in the deepest channel, "is," the Padrone says, "to steer direct from this point to the northern extreme of Solentinane."

Having obtained observations we left San Carlos at 3h. 45m. P.M., paddling along the north shore of the lake till we came to Lime Point, about one mile and three-quarters distant from the Morro Point, when we made sail, put the log over, and steered N.b.W. (magnetic,) with the wind at E.N.E., No. 4 or 5; weather exceedingly fine. Running along shore at the distance of one and two miles, the land appeared to be low and swampy, near the margin of the lake, but gradually rising to one and two hundred feet, and overgrown with a few trees of small growth; here the soundings were ten feet, and then gradually decreased till we came abreast of Punta del Toolê, about two miles and a half from Cay Bookeet, where a small rivulet, named Rio de las Marias, empties itself. At this time the patent log showed 15·2 miles. At 9h. 30m. P.M. we arrived at San Miguelito where we remained for the night, the weather fine.

Saturday 14*th*.—At daylight we looked round the settlement of San Miguelito, which is a small village containing about fifteen huts, situated on a declivity eighty or one hundred feet above, and less than half a mile from the lake: a few acres of land surrounding the huts have been cleared away leaving a pleasant open grass plot, where the soil appears to be rich and fertile.

We saw few men at this place, their occupation being pastoral, they had left their homes before daylight to look after their herds grazing on the neighbouring hills and savannas, and would not return till the afternoon to take their siesta. The women, of whom we saw several,

are many of them rather pretty and well dressed, their principal garment being a sort of petticoat, and their busts slightly covered with a thin jacket, giving their "*tout ensemble*" an air of gracefulness, which I little expected to have met in such a place; others were bathing as usual in their birth-day suit, or in other words, in all their naked beauty, near the spot of our observations.

Here we found a bongo lading with cheese, jerked beef, &c., the produce of the adjacent country. Of the latter we found it again necessary to purchase a "roba," equal to 25lbs., which cost three-quarters of a dollar: bullocks may here be had for four and a half dollars, fowls for one-quarter, eggs and milk for a mere trifle.

The height of Solentinane peak, &c., I found to be eight hundred feet, and San Bernado three hundred and seventeen feet high.

The first point we passed is called Padernal, where there are a few houses on its western extremity, said to be a good place for live stock, but having supplied ourselves at the place from which we last started, we did not land here.

Again running along shore at the distance of a quarter, and sometimes one mile;—here there is nothing striking in the features of the land, which near the beach is low, but not swampy, and strewed with small detached pieces of rock, evidently bearing the impress of volcanic action. At a short distance inland hills of one and two hundred feet begin to rise, not much wooded, but thickly grass-clad, and affording pasturage to numerous herds of cattle: here we saw several small huts the residences of drovers.

Passed the small river Guapola, at two P.M. landed to dine on Punta de la Haing where we afterwards obtained observations; and at four P.M. sailed with a delightful sea breeze, the sky nearly cloudless.

The hills on this side of the lake, divested of forest clothing remind me of those of Portugal, and the north coast of Spain. At sunset we passed a bongo going to the eastward, but did not speak her: at this time saw the peak of Ometape clear, and well defined, its summit having all the appearance of a crater.

The night was unusually clear and beautiful, not a cloud to be seen, wind easterly, and canoe gliding along at the rate of four knots. At eight P.M passed Nanci Tal Cays, and at 9h. 30m. landed for the night at Punta Pederosa.

Between this and Punta de la Haing three rivulets, viz. Rio Oyate, Rio Rapel, and Rio Burro Negro, discharge themselves into the lake.

Sunday 15th.—At daylight proceeded on our voyage with an easterly wind and fine weather, steering along shore at the distance of one and one and a half mile. The mountain of Alto Grande was now seen ahead a beautiful object, and significant of its name, clothed to its summit with the brightest verdure where thousands of cattle might be reared; its height we since determined to be 3,149 feet. There is no appearance of any thing like cultivation along the whole of this side of the lake, all is natural pasturage and meadow land. The Padrone informed us that the inhabitants on the north side of the lake depend in a great measure on those of Ometape for provisions, their own soil not being considered sufficiently productive; but I should rather be inclined to ascribe the cause to their want of industry.

At 8h. 30m. A.M. we passed Point Myallí, and the river of that name, and soon afterwards were abreast of Point Congregal, between which and the former, the land is low and swampy, and so continues as far as the Isla Muerta; but beyond the Rio Wapenolapa which we passed at ten A.M., it is gradually acclivitous till within two or three miles of the high land of Santa Cruz.

The breeze began now to freshen so much, that our canoe was in danger of being swamped, running before a short topping sea, by which, and the rain together, we were completely drenched.

At 11h. A.M. we arrived at the small island of Muerta, where I took observations and breakfasted, and we dried our clothes, the rain still descending in occasional showers, with heavy gusts of wind. From this position, (about fifty feet high,) we saw the volcanic mountain of Mombo Tombo, situated north of Leon on the margin of the Lake of Nicaragua. At 2h. 30m. P.M. took our departure for Granada, with the weather still so squally, that we were soon obliged to shorten sail and keep away, shipping a good deal of water. In the course of the afternoon, however, it moderated so much that we were again enabled not only to carry all sail, but found it necessary to resume our paddles, in order that we might reach Granada at a reasonable hour. Temperature of the lake 81°,—air 79°.

The mountains and plains to the north-west began now to appear in all their native verdant beauty, unlike anything among the West India Islands. Instead of being densely overgrown with impervious forests, they are clad "in Nature's universal robe," and seem to invite the location of the settler. The peaks of Ometape, Madeira, and Mombo Tomb, must I imagine appear very distinct and remarkable objects from the Pacific. The hill of Granada, whose height we have since ascertained by calculation to be 4,480 feet above the level of the lake, must also be very conspicuous at the same distance, but Mr. Bailey thinks otherwise. In crossing from the Isla Muerta to the town of Granada, we found the soundings to run from six and a half to six fathoms. At 7h. 30m. P.M. we landed on the beach, near the old battery of Granada, and hauled up the canoe. Taking with me the Padrone as a guide and interpreter, I immediately waited upon Mr. Bailey, (a Lieutenant of Marines on half-pay, long resident in this country,) whom I found with Mr. Higgins, a respectable American merchant, or rather agent, lodging at a Mrs. Shepherd's. The former received me with all the kindness and cordiality of a countryman, and at my request conducted me to the house of the Gefe Politico, or chief authority, but finding that he had left town, for his country estate, I delivered my official letter of introduction from the commandant at San Juan, with a promise that it should be immediately forwarded to him. Having done what I conceived, and what Mr. Bailey, who knows the manners of the country, considered quite sufficient in the way of politesse, we returned to observe for latitude, &c. To guard against any accidents that might happen to the chronometers, as well as to keep the Indians together, I thought it prudent, instead of accepting Mr. Bailey's invitation to take up our abode with him, to remain by the canoe all night, in which, as hitherto, we had managed to sleep tolerably well.

Chusan Island.

The following sketch of Chusan Island appears in a pamphlet on the China trade, published a few years ago, by Sir James Urmston, who presided for some years over the East India Company's affairs at Canton.

"The Island of Chusan is the largest and principal of a considerable group generally called the Chusan Islands, or Archipelago. It is situated in latitude 30° 26′ N., and longitude 121° 41′ E. of Greenwich. The extent of the island is about twenty-seven miles in length from N.E. to S.W., and about fifteen miles in breadth from N.W. to S.E. The island is about ten or twelve miles to the north-east of Kitow Point, which is the extremity of a long mountainous promontory of Cheekiang province to which Chusan appertains, and the nearest approach of Chusan to the main land of China is at this place; it is therefore situated at a very inconsiderable distance from that part of China which avowedly comprises the most fertile and productive, as well as the most flourishing and opulent provinces and districts of the empire, and where the most extensive trade and manufactures are carried on; and in a climate well known to be the most salubrious of any part of China.

"The island abounds in excellent fresh water in all directions. The English once traded at Chusan, and in fact had a commercial establishment there, as well as at Ningpo, a very large and important trading and manufacturing city and sea port, standing immediately opposite to Chusan on the shore of a fine smooth water river, running up to it from the sea. The celebrated grand canal which forms the communication between the north and south provinces of the empire commences, at its southern entrance, a short distance from Ningpo, affording a ready and important transit for goods and merchandize of all descriptions between nearly all parts of the country, the very extensive and important trading and manufacturing cities of Hanchow-foo, Chapo, Shunghaum, and Lookoo, &c. are all in this vicinity, and all close to the great river Yangtsekiang which passes Nanking, the ancient capital of China, in its majestic course through the heart of the empire. Chusan is not only most advantageously placed for general trade, but is in fact close to those districts which are more immediately connected with the British and other foreign trade, that is at no great distance from the tea and silk districts, and from those marts where British merchandize is required and diffused, as well as those articles of commerce which are exported to China from our dominions in India.

"It may be observed also that Chusan is well situated for communications with Japan, should we ever be enabled to open a negociation, and establish a trade with that singular country. It may moreover be stated that Chusan is particularly well adapted for offensive or defensive naval and military operations as well as for intercepting the Chinese coasting trade, which navigate the whole coast of China to an immense extant and amount. It lays, in fact, in the very track of that trade, and the junks which trade with Manilla, Cochin China, Siam, Batavia, Singapore, and other places to the southward of China on their homeward voyages make, or endeavour to make the Lamock islands, a

group of islets off the east end of Canton province in about latitude 23° N., and longitude 117° E., and from thence they coast it up to the various parts they may be bound to in the provinces of Fokeins, Chekiang, Kiangnan, and Shuntung, and to the Gulfs of Pecheli and Leotong, passing on their way through the Formosa Channel, and between the Chusan Islands and the main land of China. The harbour of Chusan is on the south-west side of the island, it is about three miles in extent from east to west, and somewhat more than a mile from north to south. The depths in the harbour are from five to nine fathoms. The rise and fall of the tide is about twelve feet.

The approach to the harbour is among several smaller islands, those on the south-west side forming its boundaries, in that direction. The harbour itself is entirely sheltered from all winds, and the water consequently perfectly smooth. Ships of any burthen may anchor or moor in the harbour of Chusan in perfect security. The chief town or city of Chusan is Tinghai, about a mile or two from the harbour; and close to the shore in the harbour there is a village: it was at this latter place where we had formerly a commercial establishment. The city of Tinghai is of some size, and the population no doubt extensive. The entire population of the island of Chusan has not been ascertained. The principal Chinese officer commanding at Chusan, is understood to be generally a Tsungping, corresponding with our rank of a Major-General, or Rear-Admiral, and there is generally a squadron-of-war junks stationed at the Chusan Islands, which cruize about in that vicinity. It is stated that provisions are abundant at Chusan.

"Viewing the question of a settlement on the coast of China, in all its bearings, it appears unquestionable that Chusan possesses advantages infinitely superior to any other of an insular nature, along the whole coast of China, and were we so fortunate as to be established there, there is every reason to believe that a most extensive and valuable trade would soon arise, largely benefitting the Chinese of all ranks and classes in that quarter, and proving, as it doubtless would, most advantageous and important to British enterprise and commerce."

The Pickle Bank, South of Cuba.

H.M.S. Pickle, Havana, 27th August, 1840.

Sir.—I beg to inform you, that in making a passage from Port Royal, Jamaica, to this port, I struck soundings at 7h. P.M. on the evening of the 19th of August, in fifteen fathoms hard sand, and continued sounding in fifteen, fourteen, and seventeen fathoms, for an extent of two miles, steering a W.b.N. ½ N. course. Lost soundings at 7h. 40m. P.M., and observed latitude by Polaris, to be 20° 17′ 20″ north, latitude by D.R., 20° 20′ north, longitude computed by D.R., from good forenoon's sights, 80° 23′ 0″ west. On looking at the charts, late English and Spanish, I find a small patch laid down in latitude English 20° 10′ north, Spanish 20° 11′ north, and longitude English 80° 2′ west, Spanish 80° 38′ west, as having been seen in 1800, and conclude that this must be the same over which I passed, but which I have always considered as doubtful.

I have taken the liberty to address you on this subject, from my belief that this bank is generally supposed not to exist; and, therefore, should any vessel chance to be on the spot, without having had any late observations, and in scant winds, those in charge of her might suffer much anxiety, from supposing that one of the strong variable currents in these parts had drifted them away to the bank of the Doce Leguas Keys, or Cayo Breton.

While on this subject, you may esteem the following relation useful to vessels beating up along the South Coast of Cuba.

On April the 1st, 1840, her Majesty's schooner, Pickle, standing in for the Jardines at 6 P.M. :—eastern extreme, Kay Largo, bore by compass N.E. twelve miles:—stood in N.E. five miles until 8 P.M., then tacked, and stood off south at 8h. 40m., having stood two miles on this course, observed rollers on weather beam, bore up S.W.; schooner grazing over hard sand,—sounded in two fathoms,—head S.W.b.W., sounding in from three to fifteen fathoms; 9h. 10m. lost soundings. On mentioning this circumstance a few days after, to some Turtlers at the Grand Cayman, they were perfectly aware of the existence of this reef, by the name of Jack Taylors reef, describing it as very dangerous, from the very circumstances of its being distant nine miles off shore, and deep water inside. It is not marked on any chart, though in the Colombian Navigator, I find the following note, very likely, as in our case, to escape observation. "At about nine miles to the south of the Jardine Kays, in latitude 21° 22′ north, longitude 81° 50′ west, or thereabout, there is said to be a small reef with breakers, seen in 1809, with green-coloured water to the beach—J.E." When we bore up, we heard the breakers close to,—five minutes more would have placed us on them, which are reported by the people at the Cayman Islands to break heavily.

I offer no apology for troubling you, as you have already in your valuable periodical, invited all to forward to you any information that may be deemed useful to navigators.

I have, &c.

FRED. HOLLAND, *Lieut. R.N.*,
Commanding H.M. Schooner Pickle

[Lieut. Holland has rendered a service to seamen by reporting these dangers. The former is an important bank brought to light, and which for want of such a rediscovery might have become "doubtful," and the latter a reef, the position of which ought to be well known by our cruizers.—ED.]

WRECKS OF BRITISH SHIPPING.

THE police reports inform us of a case which has lately occupied the attention of the Lord Mayor of London, and which is of so much importance that we consider it our duty to lay the whole before our readers. The ship in question, called the Dryad, stands No. 146 of our last volume.

Mansion-House.—On 5th of December, Wallis and Scott, who were some days ago examined upon suspicion of having been concerned in effecting the destruction of the ship Dryad, for the purpose of defraud-

ing several Insurance Companies in London, of large sums of money, were brought before Sir P. Laurie for re-examination. The justice-room was actually crammed with interested parties.

"Mr. Clarkson stated, that he and his learned friend (Mr. Bodkin,) appeared on the behalf of four or five insurance companies to prosecute the two prisoners. The case assumed, when first introduced to the notice of the Lord Mayor, the appearance of a misdemeanour of a very aggravated character. It was since found that the prisoners had reason to congratulate themselves upon the merciful change which had taken place in the law, by which the offence they were charged with was formerly punishable capitally. The act he alluded to was the 7th and 8th George IV., c. 30, which stated, "That if any person shall unlawfully and maliciously set fire to, or in any wise destroy, any ship or vessel, whether the same be complete or in an unfinished state, or shall unlawfully and maliciously set fire to, cast away, or in any wise destroy any ship or vessel with intent thereby to prejudice any owner or part owner of such ship or vessel, or of any goods on board the same, or any person that hath underwritten or shall underwrite any policy of insurance upon such ship or vessel, or on the freight thereof, or upon any goods on board the same, every such offender shall be guilty of felony, and being convicted thereof shall suffer death as a felon." The capital part had been commuted by a subsequent act. The learned counsel now charged the prisoners with having employed Looze, the captain of the Dryad, to take that vessel to Santa Cruz, for the purpose of destroying her, with the view of defrauding the insurance companies. He charged Wallis with being an accessory before and after the fact, and he charged Scott with a precisely similar offence. The statement he had at first made shewed the immeasurable importance of the case, which had been adjourned in order that evidence might be adduced. If he established facts, by testimony to show that the ship was wilfully destroyed, and that it was insured by the prisoners, as having goods to the amount of £6,000 on board, independently of goods upon which insurance had been effected at Lloyd's to the amount of £3,000, and *that none of the goods insured at the offices of the prosecutors had been on board at all*, he believed that the alderman would admit the propriety of refusing to take bail for the future appearance of the accused. It appeared that in August, 1839, the prisoners took different steps at several insurance offices to insure the freight of the Dryad. In the General Maritime Insurance Company, an insurance was effected by them, to the amount of £1,264, upon beef, pork, and earthenware, none of which goods had ever been put on board. He would next show that they insured the greatest part of the same goods at other insurance offices, as if they were of additional value. He had the Custom-house certificate, in which all the goods actually shipped on board were regularly entered, and from which it appeared that not a single article of any kind had been shipped by the prisoners of all the property insured by them at the establishments of the prosecutors. The captain of the Dryad was, he believed, gone to his account, but the mate who sailed in the vessel from Liverpool, and remained in her during several experiments made by the captain to lose her, could state the circumstances under which she was lost. The prisoners who applied for a total loss, had received the whole of the money they claimed, but in two or three offices in which suspicions of the correctness of their conduct were entertained, indemnity was required and given."

The foregoing are the general heads of the case which we shall follow to its conclusion, and duly inform our readers on its issue. Sir Peter Laurie was so impressed with the importance of it that he said nothing should induce him to take bail, as such a step would even operate in favor of the prisoners on the minds of a jury. It is to be hoped that justice will be duly awarded.

Such cases as this do not often come to light, and most assuredly for the sake of honest men who have recourse to insurance, the parties

concerned here should be made an example of. We say that cases such as this, cases in which a downright fraud seems committed, do not often come to light, but we fully believe that insurance is a more dangerous rock to our mercantile navy than any which is washed by salt water. Our correspondent Argus once sent us some lines on this *terra firma* danger, which appeared in our January number for 1839, and although, as he says, "they belong to a galley poet," (to be sure they are rather homely), there is not the less truth in them for that. The occasion which called them forth was that of an emigrant ship foundering on the coast of America, on which Jack says to his messmates on his escape from being drowned

"They talk of rocks and shoals of sand,
Of hurricanes and tides,
Which ships were never built to stand
With slender wooden sides.
But yet there is another one,
Far worse than any sand,
And that's not known to you, my boys,
Because it lies on land."

Doubtless there is some *homely* truth in the above, which many to their cost have already found. But such things do come to light now and then, there are ships like stubborn children, that sometimes wilfully run into danger, in broad daylight! The mercantile marine of this country forms a good large family, and it is to be expected that some will turn out wayward and self-willed. But the Dryad is not the only instance of a ship that would be lost whether or no: the *Shipping Gazette* not long ago told us of the following case of determined suicide!

"*Key West, May 19th.*—A few days since the British brig Isabel, went upon the Florida Reef, a little south of Cape Florida, and took assistance from the wreckers. On the 18th of March last, this same brig, under the command of the same master, ran upon the reef off Key Vacas,—was relieved by wreckers, brought here, libelled for salvage, and 1,400 dollars salvage awarded to the salvors, which was paid out of the service in kind. She was then from New Orleans for Halifax, with molasses, pork, and flour. After thus paying salvage out of the cargo, the master undertook to sell the residue of it at auction; but the collector of the port informed him that by so doing he forfeited his vessel and cargo, under our revenue laws. He could not, therefore, sell his cargo here; but he determined he would not perform his voyage, and accordingly sailed for Nassau, thence to Havana, where he took in a cargo of sugar for Liverpool. A few days since, as above stated, he appeared again on our coast. He remained along the reef for several days, and excited the suspicion of the revenue officers. He was boarded by one of the inspectors while lying at anchor inside the reef among the wreckers, who remained with him day and night, until he again went to sea; and, as the inspector supposed, to proceed on his voyage, but a few days after the Isabel was found hard and fast upon the reef.

"She was soon after boarded by some of the wreckers, who took the cargo out of her, and it is reported she will proceed to St. Augustine or Charleston."

And some days after the same paper of the 16th of July last confirmed our worst fears of this case of *felo de se*. Let no one after this say that certain British merchant ships are not purposely lost!

"The British brig Isabel, Hamelton, of St. John, arrived here in charge of the wreckers, 24th of May, having been a second time on shore within the last three months, as previously reported in the *Shipping and Mercantile Gazette*). She was from Havana for Cowes, and laden with sugar. The brig has been condemned and sold as unworthy of repairs, and the cargo is under order of

sale. They were libelled for salvage, and on the 10th of June, the court, after a full investigation, pronounced the opinion that the brig was voluntarily and fraudulently cast away by her master."

Doubtless there are many more instances of the unrighteous but thriving mania of self destruction being resorted to by our merchant shipping, which John Bull has to put up with, and which Poor Jack has to survive if he can.

We had no sooner concluded these remarks, than we received the following letter, which we give here, as it is on the causes of the loss of ships at sea, among which the writer appears to have forgotten the subject of our remarks. With the two instances which we have quoted we have no hesitation in placing at the head of his list as one of the first causes of the wreck of British merchant shipping, the evil as it at present stands of "Marine Insurance," which among other fatal dangers, not enumerated in the list, makes even rocks to exist where they do not!

Ipswich, December 8th, 1840.

SIR.—The separate as well as combined causes of shipwreck, and other losses at sea, are more numerous than are generally imagined:—the following list, the result of some experience and observation, though set down at random, may perhaps surprise some, but if the consideration of it should at all tend to liberality in the outfit on the one hand, and to encreased alacrity and circumspection on the other, it will have the desired effect.

Causes of the loss of ships at sea, by wreck and otherwise.

1. Short complement of men.
2. Deficiency of materials and stores.
3. Deficiency of water and provisions.
4. Bad materials—anchors, chains, boats, spars, sails, cordage, &c.
5. Bad quality of water and provisions.
6. Teetotality—coffee instead of rum, &c.
7. Bad condition of the ship from age, want of repairs, caulking, and looking properly to.
8. Bad construction of the ship, out of trim, &c.
9. Incapacity of masters and others.
10. Presence of captain's wives, and other women.
11. Insanity.
12. Inability of men, or crews, from sickness, maims, exhaustion, &c.
13. Drunkenness, revelry, &c.
14. Discipline, too lax or too severe.
15. Mutiny and insubordination.
16. A dead-and-alive set: no devil on board.
17. Discord and disension: the devil let loose.
18. Deaths, desertions, and discharges.
19. Fire.
20. Collision.
21. Upsetting in a squall, &c.
22. Shifting of cargo, &c.
23. Consternation,—the ship on her beam-ends, on fire, water-logged, &c.
24. Shipping of seas, foundering by stress of weather, &c.
25. Springing a leak by starting a butt-end, &c.
26. Deep lading, crowded stowage on deck, &c.
27. Striking on rocks, grounding on shoals, &c.
28. Driving on a lee shore.

29. Impressment at sea, detention and deviation.
30. Incorrectness of charts, compass, &c.
31. Want of care: bad dead-reckoning.
32. Want of vigilance: bad look-out.
33. No latitude by observation, on account of fogs, &c.
34. No flying the blue pigeon: no regard to lights, bells, drums, &c.
35. Capture or destruction by an enemy or pirate.
36. Struck or blown up by lightning.
37. Masts, &c., rolled or pitched away.
38. Driving with a foul anchor: a kink in the cable, &c.
39. Parting a cable.
40. Staving of boats, carrying away of masts, splitting of sails, &c.
41. Sleeping on watch, drowsiness of helmsman, &c.
42. Breaking adrift of floating-lights, &c.
43. Mistaking of headlands, lights, &c.
44. Sinking or destroying a ship purposely.
45. Rising of prisoners, convicts, &c.
46. Fool-hardihood,—guns run out when blowing hard upon a wind, press of sail with a crank ship, &c.
47. Carrying away topmasts from neglect of breast back stays, after going about.
48. Broaching to when weathering a headland in a gale of wind.
49. Incapacity of persons having charge, as pilots.
50. Abandonment of ship without sufficient causes, in case of wreck, officers leaving their juniors in command, with orders to land the treasure, the men, &c.

These perils and faults, often disastrous and sometimes fatal, to which sailing vessels are liable,—to say nothing of steamers, are not all that might be mentioned. A ship may be lost from circumstances which seem trifling in themselves, and even ridiculous. An East Indiaman was burnt owing to a boy wanting to look into the bung-hole of a puncheon of rum, to see if it was full; another, (as is supposed, for no one has told the tale,) from the habit of smoking between decks; and a third, because a cask was not properly secured. I have known an officer's cabin set on fire, from the socket of a candle-lamp going with a spring instead of a screw; and an instance of a fine new ship of 300 tons within an ace of being driven on the Brake, with loss of mainmast aud mizen-mast, because the carpenter, who had the quarter-watch, when riding at single anchor in the Downs, though he saw a ship driving broadside upon us, was afraid of calling the hands out, for fear of making a *mistake*, and so getting himself laughed at, and though we had an experienced captain. A man should never go to sea after he is turned of fifty, Mr. Editor.—We were not much the better off for that circumstance. There is a saying,—"For want of a nail the shoe was lost, and for want of the shoe the horse was lost." This adage, I think, applies with peculiar force to so large, complex, and animated a machine as a ship at sea, in stormy weather.

AN OLD TAR.

Among other causes of wreck which our correspondent has not named are sudden gales, and imaginary dangers. The former no sooner visit our shores, than they strew them with wreck, and the latter appear in the protests of the captains, as the Lorton rock, in the West Indies, and the Madeline rock, among the Cape Verds; the former being impudently placed in the middle of the north-east Providence Channel, *where no rock exists, and the latter one of the same order,* probably the inventions of MARINE INSURANCE.

And now for the frightful list of wrecks, which we might even now swell to some forty or fifty more, but which latter will duly make their appearance in our next number.

Wrecks of British Shipping.

(c.s. crew saved—L. lost—d. drowned.)

VESSELS.	BELONG TO.	MASTERS.	FROM.	TO.	WRECKED	WHEN.
A schooner	1 ———	disappear	ed in a	squall off	St. Ives	Nov. 14
Adelaide	———	Minnie	Sundrlnd	———	Oran	Oct. 29 cs
Aquila	———	———	———	———	B. Islnds	June 30 3 d
Alert	Sunderland	Gregson	Hayle	N Shields	off Lundy	Nov. 13 1 s
Alex. & Camilla	5 ———	———	Wisdau	Milbay	Ameland	Nov. 19
Andrews	———	Wright	papers pi	cked up	off Rye	Nov. 19
Anna Sophia	———	Reeve	Lubec	Liverpool	founder'd	Nov. 18 cs
Bengal	———	Carson	Calcutta	London	Table By	Sept. 17
Betty & Jenny	Harrington	———	———	———	Douglas	Nov. 13
Boddingtons	10 Whitby	Vinnes	Ramuski	Whitby	abandond	Nov. 14 cs
Brig, name	un known	———	———	———	Peran H.	Nov. 21
Brig, name	un known	———	———	———	Margate	Nov. 21 cs
Brothers	Sunderland	Nic'olson	———	———	Somme r	Nov. 21
Campion	Liverpool	Cuppon	St. John	Hull	Hasbro'	Nov. 14 cs
Cambrian	15 ———	Jones	———	———	Swords	Nov. 13 cL
Cath. Jamieson	———	Hutchins	Batavia	London	Table By	Sept. 19
City of Bristol	Steamer	———	Watef'rd	Bristol	Bristol C	Nov. 18 35L
Clarence	Stockton	Foulston	Copenha'	London	wk.pk.up	Nov. 30
Claudine	———	Brewer	Madras	———	Margate	Nov. 21 cs
Comet	20 ———	Groves	———	Newport	Plymo'th	Nov. 13 4 d
Cyrus	Plymouth	Menham	———	———	Sherring	Nov. 22 cs
Defiance	Liverpool	Watson	———	———	Long Snd	Nov. 16 cs
Diadem	———	Pringle	abandon	capsized	———	Nov. 23
Diadem	Newcastle	Leslie	London	Newcstle	Norfolk c	Nov. 22 cs
Ebberley	25 Barnstaple	Yeo	Bristol	Barnstpl'	C. Wales	Nov. 16 cs
Ebenezer	———	Grimes	———	———	Havre	Nov. 26 cs
Echo	Liverpool	———	Cork	Liverpool	Skomar	Nov. 22 cs
Echo	Yacht	———	———	———	———	Nov. 14
Eleanor & Jane	———	Roberts	Liverpool	Aberd'vy	Aberd'vy	Nov. 16 cs
Eliza	30 Arundel	———	sunk	off	Bergen	Nov. 12 cs
Eliza Blair	———	———	Treon	Dublin	Balyferis	Nov. 22
Eliza Margaret	Sunderland	Reid	Wyburg	Gloc'ster	Dover	Nov. 14 2 L
Elizabeth	———	Pypens	———	———	Dort Rds	Nov. 18
Ellen	———	Bowman	———	———	Sundrlnd	Nov. 13 cs
Eglintoun	35 ———	———	———	———	———	Nov. 22
Emerald	———	Gaine	Bathurst	Hull	Etaples	Nov.
Emily	———	———	Bristol	Barnstpl'	Cam'th'n	Nov. 16 cs
Emma Kemp	———	———	———	———	Wabba b	June 26
Equivalent	Newcastle	———	Pictou	Newcstle	LongSnd	Nov. 23 1 d
Felicity	40 Goole	Porrett	run down	———	CortonR	Nov. 22 cs
Friends	Sunderland	Wright	Jersey	London	Eastbrne	Nov. 13 cL
Galway Lass	Schooner	———	Galway	———	Ramsgat	Nov. 22 cs
Grecian	Waterford	Buc'land	Waterfrd	Cardiff	Hartland	Nov. 21 cL
Harmony	Newcastle	Faulkner	abandon	North	Sea	Nov. 14 cs
Hiram	45 ———	Doane	Halifax	Jamaica	Turks I.	Oct. 29 cs
Holcombe	Teignmo'th	Drake	Shields	run down	Low'stoft	Nov. 22 cs
Hoop	Sandwich	Wilkison	———	Sandwch	Scarbro'	Nov. 21 cs
Hope	Barmouth	Lloyd	———	———	Yarmoth	Nov. 22 cs
Joseph & Ann	———	stern	frame pi	cked up	Portland	Nov. 15
James & Jane	50 Beaumaris	Morris	crew tak	en off ab.	B. Biscay	Nov. 18
James Duncan	Belfast	———	Belfast	Liverpool	Bangor B	Nov. 18
Jane & ——	Whitby	———	———	———	Barber S	Nov. 22
Jane Kelly	———	Harper	Tobago	Andrews	B. Fundy	Oct. 23 cs
Jason	Whitby	Lattimor	coal	laden	Norfolk c	Nov. 22 3 d
John Munro	55 ———	Munro	Limekln s	London	Newcom	Nov. 21 cs

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VESSELS.		BELONG TO.	MASTERS.	FROM.	TO.	WRECKED	WHEN.	
Joseph	56	Sunderland	Ashford	Sundrlnd	Portsmth	Eastborn	Nov. 13	
Kames		Leith	Stewart	Forth	Newcstle	Spittal	Nov. 23	
Lady Combermere		Seaton	———	———	———	Barber S	Nov. 22	
Leander		———	Mutter	Seaham	London	Cromer	Nov. 22	cs
Leslie	60	N. Shields	Collier	———	———	Middle S	Nov. 18	
Leslie Ogilby		———	Johns	abandond	in	Swin	Nov. 18	
Lively		Poole	Hart	Poole	Nwhaven	Haling I.	Nov. 13	cs
Lord Nelson		———	Griffiths	Poole	Runcorn	N. Bank	Nov. 16	cs
Lydia		St. Ives	Davis	boat pick	up off	Bude	Nov. 23	
Lyria	65	———	———	———	———	———	———	
Majestic		———	———	Newcstle	Toulon	La Motte	Oct. 28	cs
Margaret		Leven	passed,	abandond	wtrlgged	———	Nov. 11	
Margaret		Falmouth	Penver	Falmo'th	Neath	Hilsboro'	Nov. 13	cs
Margaret Power		Falmouth	———	Falmo'th	Neath	Ilfracom'	Nov. 15	cs
Maria	70	Fowey	Burgan	Swansea	Lisbon	Scilly	Nov. 19	cs
Mary		Sunderland	Kemp	Sundrlnd	Shorehm	Sussex C	Nov. 13	cs
Mary		———	Coag	Newcstle	Barcelon	Glenan I	Nov. 9	cs
Mary		———	Archib'ld	Newcstle	Barcelon	abandond	Nov. 9	cs
Mary		Newcastle	Burn	———	———	SunkSnd	Nov. 22	cL
Mary Ann	75	Plymouth	Cuming	Plymo'th	Penzance	Salcomb	Nov. 21	4d
Mary Ann		Liverpool	William	Carnarvn	Dublin	Wicklow	Nov. 13	
Mercurius		———	———	Newcstle	Altona	sunk	Nov. 22	
Mermaid		Dartmouth	———	———	———	Dartm'th	Nov. 19	
Mermaid		———	Drumond	Exeter	Totness	Dartm'th	Nov. 21	cs
Monica	80	Whitby	———	———	———	Lowstoft	Nov. 13	
Morris Russel		———	———	Jamaica	———	Musqto I	Oct. 28	
Nancy		Shields	———	———	———	Middle S	Nov. 21	
Nathaniel		Yarmouth	Pye	Newcstle	———	Yarmoth	Nov. 23	
Nicholson		Sunderland	———	papers pi	cked up	off Rye	Nov. 19	
Oak	85	Hull	Tree	London	Hull	Caistor	Nov. 22	
Offerton		Sunderland	Smith	Seaham	Cowes	Sussex C	Nov. 13	cs
Pericles		Newcastle	Geldart	———	———	SunkSnd	Nov. 22	cs
Perseverance		London	Lowe	Stockton	———	Gunfleet	Nov. 15	cs
Perseverance		Portsmouth	———	———	———	Ryde	Nov. 13	
Perseverance	90	Portsmouth	fallen in	with aba	ndoned	53N30W	Oct. 20	
Perseverance		Grimsby	Wentwrt	———	———	Nore Snd	Nov. 13	
Phœnix		Havre	Lefort	London	Havre	Dungens'	Oct. 24	cs
Pomona		Southpton	Bunday	———	———	LumpsFt	Nov. 18	
Pomona		Shields	———	abandond	in the	Atlantic	Nov. 5	
Preston	95	Yarmouth	crew tak	en off &	abandond	Atlantic	———	
Prince Regent		Stockton	Lovett	———	———	St. Ives	Nov. 14	
Prince Cobourg		timber sch.	seen wat	erlogged	abandonc	44N15W	Nov. 23	
Rambler		Hull	Parrott	Hull	Lynn	Sandhall	Nov. 13	cs
Ranger		———	———	London	———	R Nunez	Oct.	cs
Robert & Ann	100	Newcastle	———	———	———	Ruiswick	Nov. 19	cL
Rose, schooner		Peterhead	Robrtson	Wick	London	Aberdeen	Nov. 13	cs
Rover		Goole	Sawyers	Whitby	———	Shields	———	
Ruby		Liverpool	wreck fo	und 49°N	8W.byG	Robinsn	Nov. 23	
Ruby		Scarboro'	———	Newcstle	———	Horsey	Nov. 22	
Sally	105	N. Shields	———	———	———	SunkSnd	Nov. 21	
Sarah		Whitby	Poad	———	———	SunkSnd	Nov. 22	cs
Sarah & Nancy		crew saved	by Ocean	Archangl	Cork	run down	Oct. 19	cs
Schooner		name un	known	———	———	SunkSnd	Nov. 19	
Scotland		———	———	Quebec	Liverpool	Formby	Nov. 16	
Ship	110	name	unknown	founder'd	off Mar	gate all	perished	Nov, 22
Silva		Clay	Jarvis	Goole	London	Yarmoth	Nov. 23	cs
Sir John Seale		Dartmouth	Millman	Glasgow	———	SussexC	Nov. 13	cs
Speedwell		Carnarvon	Gravell	Ardrosan	Milford	Crufield	Nov. 15	cs

VESSELS.		BELONG TO.	MASTERS.	FROM.	TO.	WRECKED	WHEN.	
Star	114	London	———	London	Corfu	Bognor	Nov. 6	cs
Star, schooner	115	Dartmouth	West	———	———	Owers	—— 13	cs
Success		———	———	Newcstle	France	NorfolkC	—— 22	cs
Superb		———	Melhuish	Leghorn	Liverpool	Palmas B	Oct. 20	cs
Supply		———	Edmonds	Newcstle	France	NorfolkC	Nov. 22	cs
Susan		Shields	———	———	Shields	Walton	——	
Syria	120	Sunderland	———	———	———	Sundrlnd	—— 13	cs
T. Briggs		Sunderland	———	Sundrlnd	London	sunk	—— 22	cs
Thomas		Sunderland	———	———	———	SunkSnd	—— 22	
Tresore		Sunderland	———	———	———	SunkSnd	—— 22	cs
Union		Hartlepool	Oates	N. York	Hull	Holme S	—— 14	cs
Union	125	———	Charlson	Southton	Newport	Mort p.	—— 21	3d
United Kingdom		Blythe	Somervill	founder'd	———	N. Sea	—— 18	
Unity		Maryport	Baxter	———	———	Douglas	—— 16	cs
Unknown		———	———	———	———	E. Hoyle	—— 16	cs
Unknown		schooner	———	———	———	Gun fleet	—— 13	
Unknown	130	brig	———	———	———	KessingS	—— 22	
Unknown		brig	———	———	sunk off	Barnard	—— 13	
Unknown		barque	———	———	———	Burling e	—— 15	
Unknown		top-gallant	pole dis-	covered	in 20 fms	Hastings	—— 26	
Unknown		collier	———	———	———	Gunfleet	—— 18	
Unknown	135	———	———	———	———	Binks	—— 15	
Unknown		brig seen in	a sinking	state by	Duncan	Shields	—— 22	
Unknown		brig	———	———	———	Hartland	—— 21	
Unknown		schooner	———	———	———	Brighton	—— 13	
Unknown		collier	———	Sundrlnd	———	Middle S	—— 19	
Vesper	140	Shields	Godchild	———	———	SunkSnd	—— 22	cs
Victoria		Hartlepool	———	———	———	Litlhmtn	—— 16	
Victoria		Hartlepool	Humfrey	———	———	Haling I.	—— 13	cs
Westminster		———	Mollison	Singapor	London	Margate	—— 21	cs
William		S. Shields	Reed	———	———	SunkSnd	—— 21	
William	145	Sunderland	———	Sundrlnd	Caen	Dieppe	—— 21	cs
William & Ellen		———	Christie	Granmth	Newcstle	Beudnal	—— 21	cs
William & John		Shields	Huson	———	———	East ness	—— 14	cs
Zephyr		Sunderland	Wright	———	———	Low'stoft	—— 13	cs
Zephyr	149	Whaler	Kitchen	———	———	Borneo	April 1	cs

We shall leave our readers to ponder over this melancholy devastation of British lives and property, and in conclusion, for the present merely add the following discussion, which we find in a recent number of the *Shipping Gazette*.

"An inquisitive correspondent would have us tell him "what they do with merchant vessels when they are worn out?" We were about replying, briefly enough, in a note to correspondents,—*they break them up!* But reading a line or two further, we came to this facetious but astounding remark—"Nobody knows what becomes of e'm any more than they do of the dead donkeys," and "old post-boys." Of course we paused to consider, and took a review of all we had seen along the banks of the river, but memory furnished no instance to solve the doubt.

"We can recollect the demolition of line-of-battle ships,—frigates, gun-brigs, and store-ships in plenty; have seen the figure-heads of these and East and West Indiamen, decorating the gates and fences of the ship-breakers' yards; but no vestige—futtock, flour, or fashion

timber—is there to be found of the Lovely Sallys, Mary Anns, Susannahs, Ellens, Johns, Richards, Henrys, Sisters, Brothers, Fortunes, or Good Intents; all appear from time immemorial to have taken their departure and left no sign! What does become of them? We are as much at a lost as the waggish querist, who, to satisfy his own curiosity, has provoked ours; and really it is an enquiry worth pursuing.

"We have often seen a Good Intent, painted, gilded, and bedecked—"tight and yare,"—in the docks and in the tiers; fast head and stern, her chains carefully dressed, and her warps judiciously parcelled and serviced;—a goodly craft to look at, with her cabbages slung under her stern, her boat triced up to the fore-stay, a tiny boy swinging, knife in hand, eager in pursuit of his practical lesson in mast scraping:—nay, more, we have seen even a lovely SALLY on her deck, with a real, rough, dirty-coated, snarley yow, strutting o' the gangway; but we never saw a Good Intent in the hands of the Undertaker!

"A man may to go sea till he is grey-headed, and see, no more than we have seen, after this kind; but the river—we have passed up and down it many a time. Did any body ever see a Good Intent knocked to pieces rib and truck? Not many, we think, can make the boast. There is, perhaps, some remote haven,—some sequestered cove, where the worn-out Brothers and Sisters go to lay their bones, to die a natural death and be forgotten,—a sort of Davy Jones's locker! There was once a sentimental traveller, who said he saw a dead donkey,—"a gentleman in black"; but he is dead too, and pity 'tis,—we can't recall him, to ask him about the Good Intents.

"It must be admitted, that a good ship is a thing to be fond of. Some are so good that they never wear out, and attain a prodigious age before they go—the LORD knows where! and if they sometimes have incurred large doctors' bills, much nursing only renders them the more endearing: 'tis very natural—

"But dearest friends, we know must part."

"Yet, with all this reluctance and sorrow, people's grief is consoled by the gay appearance of the offspring of their lost acquaintances. They cannot but be happy in the promised services of the Young Marys, the Twin Brothers, the New Fortunes, the New Good Intents, and the Golden Fleeces, that succeed the old ones. "The wind is tempered to the shorn lamb."

"Still our question is unanswered—"What does become of merchant vessels when they are worn out?"

"They cannot all go down at sea.
While heaven is all tranquillity."

"Although not so much as an oar is raised to mark the resting place of some of our pilots,—although the demise of some we never hear of, St. John, (New Brunswick,) ever and anon, does send titles home to Lloyd's, which convince us that all do not pass away intestate! The births, (the launches,) and the christenings, our paper duly registers; and it is but reasonable we should have an obituary: but we cannot compile it unassisted; and we believe that that assembly of intelligence, the House of Commons, is in no better position. We put our

unanswered question to them,—Can they tell what becomes of the worn-out Merchant Vessels? The Underwriters, perhaps, know something about it. Houses are burned frequently; churches seldom; people insure the first, never the last; the same difference is discernible between men-of-war and merchantmen. But we argue against business when we should turn everything to account. "The Church is in danger;" "the Navy is defective." Insure them; that's the true Church and State policy which will bring premiums."

An esteemed correspondent of ours, who signs himself "Mercator," has long ago solved this question in our pages, and we have not found yet any reason for disturbing the conclusion, we had quietly come to, with the assistance of his experience, confirmed as it has been year after year by the extended lists of wrecks which we have collected. We long ago made the discovery, that Merchant ships are never worn out, but that they generally end their career, some in the halcyon days of youth, and others in their dotage, by one of the numerous causes pointed out in the foregoing letter of an "Old Tar," and then by the magic art of insurance, they re-appear in the pockets of their owners! Oh! the blessings of a total loss, how far more desirable than the trouble, the difficulty and the expense occasioned by saving a crazy ship. We have heard the wish expressed, (and to our amazement) for a total loss, but it was in our inexperience.

We recommend the correspondent of the Shipping Gazette, who asks what they do with Merchant vessels when they are worn out, to peruse the article of Mercator, in our volume for 1836, (p. 276,) and if that with the list of wrecks, and causes of wrecks, which we have printed, will not convince him of what becomes of them, we don't know what will. The more serious question is, what become of their crews, which, perhaps, he will inform us, for the benefit of our readers.

But the system is not without its advantages, and we find the port of Sunderland boasting of the following:—

"*Sunderland Shipbuilding.*—One of the most remarkable phenomena connected with the commerce of this district, is the vast number of new vessels now actually built on the banks of the Wear. Sunderland possesses no natural advantages which are not enjoyed in an equal, or even a still greater degree, by many other ports in the kingdom; and yet, while in many places shipbuilding has been either stationary or gradually retrogading, in this place there has been a steady advance, not only in the number and average tonnage of the vessels built, but also in what is much more important—their quality. A few years ago, to say that a ship was "Sunderland-built," was to say that she was of inferior quality. Now, the case is entirely reversed; and at every spring-tide, ships are launched by our builders, that for excellence of model, material, and workmanship, cannot be surpassed, and for price cannot, perhaps, be equalled, by any port in the United Kingdom. Such is the result of enterprize, industry, and a judicious outlay of capital, combined with the impartial and vigilant inspection of Lloyd's surveyors, whose ability and integrity are held by purchasers from all parts of the island to be sufficient guarantee for excellence. In proof of what we have said, we subjoin a comparative statement of the number of ships

built in this port each year from April 14th, 1834, to April 30th, 1840, together with their gross and average tonnage.

	SHIPS.	TONS.	AVERAGE TONS
To April 14, 1835	98	26,134	266¾
" 30, 1836	114	27,703	243
" 30, 1837	128	32,342	252¾
" 30, 1838	180	43,512	242¼
" 30, 1339	247	59,441	240½
" 30, 1840	251	64,446	257

In the last year, the ships built have been distributed as follows:—Blythe, one ship, 190 tons; Boston, one ship, 204 tons; Berwick, one ship, 351 tons; Dundee, one ship, 287 tons; Exeter, one ship, 317 tons; Greenock, one ship, 458 tons; Hull, four ships, 1,480 tons; Liverpool, four ships, 1,220; London, thirteen ships, 4,159; Lynn, one ship, 234; Maldon, one ship, 121 tons; Newcastle, thirty-six ships, 10,046 tons; Newhaven, one ship, 210 tons; Perth, one ship, 144 tons; Rochester, one ship, 216 tons; Scarborough, three ships, 799 tons; Shoreham, one ship, 189 tons; Sligo, one ship, 282 tons; Southampton, two ships, 285 tons; Stockton, eleven ships, 2,809 tons; Sunderland, one hundred and fifty-nine ships, 39,158 tons; Whitby, six ships, 1,287 tons. In the year ending April 30th, 1839, one hundred and forty-one ships, gross tonnage 32,708, were added to the Sunderland registration; consequently the addition in the year just closed has exceeded that of the preceding twelvemonths by eighteen ships, gross tonnage, 6,450.—*Sunderland and Durham County Herald.*

It is a fact highly creditable to the inhabitants of the coast of Gower, where the City of Bristol steamer was wrecked, that although every part of the bay was strewed with broken fragments, and continued so for six days and nights, many of the people being poor, and food scarce and dear, not the smallest particle was taken.—*Hereford Journal.*

WHITBY, Dec. 10.—The shipping interest at Whitby has seldom been known to suffer more than it has done this year. Up to the present date there has not been less than twenty sail of vessels belonging to this port totally wrecked, consuming a capital of from £25,900 to £30,000, besides all the others that have been on shore, stranded, and otherwise damaged.—*Hull Advertiser.*

CHINA.

Tinghae, Island of Chusan,—July 19, 1840.

I INTEND writing to you from Macao, to give you an account of our proceedings up to the time of our arrival off that place; but, although we were beating about for nearly three days within a few miles, and ships went and returned, no opportunity was afforded to the transports of sending a single letter on shore. This was certainly kind and considerate to men on service, who might not for a long time have had another opportunity of writing to their friends. As you must have heard of us from Macao, I need not trouble you with any account of our voyage from Singapore. We left that place on the 30th of May, the vessels forming the fleet being the Wellesley, Cruizer, Algerine, Atalanta, and Madagascar, steamers, and sixteen transports. The Madagascar returned to Singapore the following day, and the Queen joined with the staff on board. The Conway did not join until the 18th of June. The ships sailed in regular

order, each having an allotted station, but the Edmonstone and Victoria transports fell astern, and taking a different course arrived before us, and went into Macao roads. We had fine weather, and arrived off the Ladrones on the 21st. The Wellesley, with the two steamers went into Macao roads, leaving the Conway with the brigs and transports outside. You must have heard ere this, of the irreparable loss the 26th regiment has sustained by the death of Colonel Oglander. He died on the 23rd, off the islands. He will be buried here when affairs are more settled than at present.

On the 23rd we left the islands and made sail to the north-east, after being joined by the Alligator frigate. We did not then know our destination; but being warned to be economical of our water, conjectured it to be a distant one. On the 25th we learned that it was Chusan, the rendezvous in the first place Buffalo Island. We sailed through the Straits of Formosa with a fine breeze right aft, and on the 28th all the ships anchored among the Quesan group of islands, within a few miles from the little Buffalo, which is one of them. On the 29th we were detained by a dense fog. The ships made sail for the rendezvous; but the fog increasing we were obliged to anchor again. The next morning the weather was clear, and before evening all the ships had anchored off Buffalo Island. Here one of the men of the Rattlesnake was carried off by a shark while bathing.

While sailing between the islands we had a fine view of them, and we passed hundreds of fishing-boats, which the natives manage with singular dexterity. They seemed to regard us with surprise, but did not leave their occupation, or appear to be either afraid or suspicious of their strange visitors. We were not allowed to land while at the rendezvous, but several boats, with natives, came to the ships at anchor. They appear to be completely Chinese in dress, feature, and language. Two men came on board our ship, and showed great good nature, and not a little curiosity. After inspecting every thing on deck, they went below, and were soon on the best terms with the soldiers, who regaled them with biscuit and tea. A bag of the latter was presented to them on their departure, and made them very happy. While at Buffalo Island we received letters from Calcutta, and the last overland mail from England.

The Wellesley arrived at the rendezvous the day after we did, with the two steamers, Hebe, tender, three transports (the Futty Salam, Victoria, and Wm. Wilson), and a storeship, the Elizabeth Ainslie, these vessels having left Macao on the 25th. The fleet sailed from Buffalo Island on the 2d inst., the Wellesley and Conway, in tow of the Atalanta and Queen, preceding the other vessels. On this day the Brigadier issued an order that officers and men should land at Chusan in full uniform. The order was received on board the ships with a groan of horror, and an anxious look at the thermometer. It is a remarkable fact, that certain fat field officers broke into violent perspiration on merely perusing the fatal mandate, choleric subalterns were heard to utter oaths both loud and deep, and several apoplectic gentlemen immediately made their wills, and talked affectingly of their wives and families. The Brigadier, however, relented; the order was rescinded, and all restored to good humour. We anchored on the evening of the 2d, about twelve or fourteen miles from Chusan.

The scenery among the islands, the whole way from the commencement of the Quesan group to Chusan, is very attractive. The islands themselves are of great beauty, and the numerous bays, creeks, and channels, which they form, extremely picturesque. The country is very hilly, and the soil does not look promising, but it is cultivated apparently with great care, to the very summit of the hills. Indeed there is abundant proof that the highlanders are a highly industrious race. Some of the channels are very narrow, and might be easily rendered almost impassable by erecting a few batteries. So narrow are some of the channels, that the ships had the appearance of being in a river. Sometimes we were completely land-locked, until on rounding a point, we found ourselves again on the open sea. Again the ships would be crowded into a small space, resembling a little lake, producing a very striking and beautiful effect.

The fleet remained at anchor during the whole day of the 3d, while the Atalanta was sent forward to find a safe passage and examine the harbour. In the meantime the following orders were issued by the Brigadier: Troops to be ready to land at the shortest notice. Dress to be forage caps and shell jackets. Each man to carry sixty rounds of ball cartridge, and one day's provision in his haversack. The order of landing to be as follows:—the two companies of the Royal Irish to land first, with 100 marines. Next, two guns of the Madras Artillery, to support the advance. Next, the Cameronians, with as many of the volunteers as could be accommodated in the boats. These troops to land and form on the beach. The boats then to return for the rest of the artillery, the remaining "volunteers," and the 49th Regiment, and the Sappers and Miners, with scaling ladders, &c. As it afterwards turned out that there was no enemy for the troops to contend with, the order of landing was of little consequence, and the honor of first landing not worth dispute; but as this could not be foreseen at the time the order was issued, it was arbitrary and unjust. The proper place for the marines was after the 49th Regiment, and the right of the two companies of Royal Irish to the first place might be fairly questioned, as they were only a detachment, and the colours of the regiment left on board the transport.

The Atalanta returned in the afternoon, reporting a safe passage, a convenient landing-place for the troops, and good anchorage for the largest ships close in shore. She ran foul of a sunken rock near the entrance of the harbour, (which has since disabled the Melville,) but received no injury. The ships weighed anchor the next morning, (4th) and proceeded slowly through the intricate passage, with light breezes. All went well until the afternoon, when the ship came to a point of land near which is the sunken rock above-mentioned. The tide turned, and the wind dying away, and there being strong eddies, very deep water, and bad anchorage, the ships became nearly unmanageable. Several collisions took place, and some of the vessels ran aground, none being able to pass the point but the steamers. The Wellesley and frigates were towed round. All the ships, however, were safely anchored before night, without any injury having been done, except the loss of a spritsail yard and a jib-boom or two.

On the following morning, when the tide served, the vessel rounded the point, and anchored in the harbour of Chusan, the Wellesley, with the other men-of-war, and the two steamers close in shore, the transports outside of them, Before the transports had come up, the Chinese admiral and second in command were received on board the Wellesley, and every argument urged through the medium of an interpreter to induce them to give up the place without resistance, and avoid unnecessary effusion of blood. All was in vain, and they left the ship determined to resist to the last, saying their heads would be cut off if they did not do so. All the vessels were allowed to anchor without a shot being fired at them. The defences of the place were a battery, about thirty junks run aground with their broadsides to the harbour, each mounting two or three guns, a few guns on the beach, and bags of grain piled up. We could see a considerable number of people, soldiers and others. When the troops were ready to land, the Wellesley fired a single shot into the battery. The compliment was returned, and a shot struck her cutwater. Immediately the men-of-war and steamers opened a heavy fire upon the battery, junks, and houses on the beach, and kept it up for about a quarter of an hour. This was feebly returned for a few minutes, about a dozen shots striking the ships, but without doing any injury. The only casualty was on board the Conway, a man having had his legs shattered by the recoil of a gun. When the smoke cleared away not a Chinaman was visible. The troops were landed, and formed without meeting with the slightest opposition, or even seeing an enemy. The number of killed and wounded could not be accurately estimated: many of the latter having been carried off. It is ascertained that the Chinese admiral drowned himself, and the second in command is wounded, and has escaped to Ningpou.

One poor man was found in the battery with his legs shot away. He was alive, but refused assistance from the surg eons. Four men were carried to the Wellesley, and amputation was performed on them, but only one survives. He appeared to consider the operation to be inflicted as a torture. Four or five priests were discovered concealed, and half dead with terror, and re-assured with difficulty. About twenty men were found killed in the junks. After taking possession of the town on the beach, no further operations were contemplated on that evening, and the troops marched into quarters. Guards were formed, and picquets thrown out, but no measures were taken to prevent escape from the city. If this had been done, public property to a considerable amount might have been seized, and some Mandarins made prisoners, who would have been of great service. The attack on the city was probably deferred from motives of humanity, as night was approaching, and it might have been difficult to prevent acts of violence from being committed in the darkness and confusion.

The city, which is of considerable extent, is about three-quarters of a mile from the beach. It is surrounded by a rampart and wall, with bastions and embrasures for guns; but the wall is in a ruinous condition, and the guns are of a most inefficient kind, apparently as dangerous to friends as enemies. Only one good gun was found in the place—a long brass gun of English make, and very old. A ditch also, well supplied with water, runs round the city. On the evening of the day we landed, the artillery formed a battery, and threw a few shots and shells into the city to try the range. These were thrown with great precision, and evidently caused great consternation. The Chinese returned the fire, and some of their shots were tolerably well directed, nearly striking a picquet, and a group of officers who were watching the effects of the shells from an eminence outside of the town. This show of resistance, however, as the event showed, was only kept up to gain time for collecting their valuables and decamping. The next morning the troops were marched in, and the city found completely deserted.

It is to be regretted that, notwithstanding strict orders had been issued to respect private property, the sailors were allowed to leave their boats and plunder the town on the beach. In a short time they had reduced it to a perfect wreck, wantonly destroying what they could not carry off. It is no palliation to say that the property destroyed and carried off was of little value. The work of destruction was completed by a number of rascally Chinamen, who were allowed to land and carry off everything they could lay their hands on. This was allowed during a whole day. The city has since been kept in better order, and plundering been prevented as much as possible, no one being allowed to leave the town, excepting with agricultural implements, and other property to a small amount. Proclamations have been posted up, and every encouragement held out to induce the inhabitants to return to the city. Some have done so; a few shops have been opened, and traffic resumed on a small scale, Some are also working for us as coolies for hire.

Two commissioners have been appointed at Rs. 300 per mensem, to collect and take care of all public property. They are Capt. Caine, 23rd regiment, and Major Stephenson, 49th regiment. This property is to be disposed of, and a sale takes place to-morrow. Some very handsome dresses are to be disposed of, one beautiful war-dress, it is said, will be sent to her Majesty. A guard was placed over the treasury, which was afterwards found to contain four dollars! When all the property is disposed of, a captain's share of prize-money may amount to Rs. 20! The only formidable enemy we have found in this place is the infernal liquor called Samshu. Incredible quantities of this cursed stuff were destroyed immediately after we landed, but several days elapsed before all the cellars were discovered and destroyed, and indeed it is too easily procurable still. The consequence has been, a great number of men have been drunk. We have had courts-martial, and several men have been flogged. The 49th were re-embarked on the 6th, on account of the nnmber of drunken men; six

or seven sergeants were reduced, and several men tried and flogged. Great allowance ought, however, to be made for the men; for, after being restricted for so many months on board ship to a moderate allowance, they suddenly found themselves in the midst of it, having literally to wade through it in some of the places, where the jars containing it had been broken. Besides, this liquor appears to be more insidious than any to which they are accustomed. Since we have been here very little more has been done.

The volunteers, 26th Artillery, sappers and miners, are encamped. The 18th are quartered on a little hill near the beach, named "Pagoda-hill." The 49th are still on board, only sending on shore a certain number of men daily for duty. We are to remain encamped until the cold weather; when we shall remove either into cantonments built for us, or into barracks provided in the city.

The island has not been explored; indeed, no one has been five miles from the camp, and what the natives may be doing in other parts Heaven only knows. The mandarins are said to have escaped to the main land, and to have taken hostages with them, to prevent the poor people from giving any assistance to the barbarians.

The people are returning to the city very slowly, and it begins to be doubtful whether they will ever return in considerable numbers. Had small parties been scattered over the island, and the whole taken possession of, the natives would have had no inducement to avoid the city. The Brigadier now styles himself the Governor of Chusan, but this is a mistake, he ought to be his Excellency the Governor of Finghoi, as that is the only place as yet taken possession of, or even explored. His excellency has had a soft parting with the Royal Marines, whom he thanked in orders for their gallant and soldier-like conduct, without taking any notice of the other corps. The marines deserve the praise they have received, but it is surely an invidious distinction to mention them alone. They certainly had not so many men unfit for duty from intoxication, but neither were they so exposed to temptation, as they only remained on shore one day, and then they were strictly confined to the Pagoda-hill. Mr. Gutzlaff is at present chief magistrate, but is soon to make room for Mr. Clark. The island is beautiful, and its scenery very much resembles that of Wales. We have recognised many old friends amongst the birds—magpies, blackbirds, and larks. There are many wild flowers too, which are common in England.

Numerous ships have arrived since the 5th; the admiral arrived in the Melville the day after us, having been within hearing of the guns. The Melville ran foul of the sunken rock before-mentioned, and is so much injured that she must be dismantled and hove down. The Blonde has been here, and is now at Ningpou. You will probably hear, ere this reaches you, of the affair at Amoy, and that John Chinaman has been taught, when he wants a target, not to take a British flag of truce. The other ships that have arrived are the Blenheim, Pylades, Enterprise, Madagascar, and the transports Marion, Edmonstone, David Malcolm, Bremer, Allalevie, the Mohammed Shaw, and Kite store-brig. The transports have been ordered to be ready for sea immediately, and it is said that some of them will be armed for service on the coast. The admiral has been at Ningpou, where he was courteously, and even humbly, received, (thanks, probably, to the lesson the Blonde taught them at Amoy,) but they declined sending any "chop" to the Emperor, being afraid, perhaps, that it would contain some *jaw*, saying they would lose their heads if they did. The admiral sails to-day or to-morrow for the Pekoe river, in order to send terms to Pekin.

Brigade Head-Quarters, City of Ting-hae-heen, July 18, 1840.

My Lord.—I have the honor to acquaint your lordship, that on the 4th instant, H.M. ships Wellesley, Conway, and Alligator (to the former of which I

had transferred brigade head-quarters, in compliance with the wishes of Sir Gordon Bremer,) with the troop-ship Rattlesnake, and two transports, arrived in the anchorage of Chusan harbour; the ships of war taking up a position in front of a hill, upon which there was a large temple, or Joss-house.

In the evening a summons was sent to the admiral, who was also governor of the Chusan group of Islands, calling upon him to surrender the island, and soliciting him to do so, that blood might not be shed in useless opposition.

The officers bearing the summons returned with the Chinese admiral to the Wellesley, accompanied by two mandarins, and although they acknowledged their incapacity to resist, they attempted by evasion and requests, to obtain time, and left the ship without any satisfactory result; but perfectly understanding that if submission was not made before day-light next morning, hostilities must commence.

On the morning of the 5th, the hill and shore were crowded with a large body of troops, and from the mast-head of the ships the city was seen at the distance of a mile from the beach, the walls of which were also lined with troops. On Temple-hill, the landing place, or wharf, and a round tower adjacent, there were twenty-four guns of small calibre, independent of a number of war junks; and from their proceedings it appeared that resistance was to be offered. As both wind and tide were against the transports, and only 350 men, including marines, were in harbour, I availed myself of the time offered to reconnoitre the beach beyond Temple-hill, with a view of landing at some distance from the batteries, but which I abandoned, as, if opposed there, the shipping must have opened their fire on the different batteries, and the result have been the same with respect to loss of life, as of opening upon the batteries at once; besides which it was not considered expedient to take from the ships of war, under the prospect of action, so many hands as were required to man the boats.

About 2 o'clock P.M. H.M. brigs Cruizer and Algerine had got into position, and as the transports then entered the harbour, the signal was given for landing in rotation, as boats could be supplied, in the following order:—

First division—18th Royal Irish, Royal Marines, two nine-pounders, and the 26th Regiment.

Second division—Volunteer Corps and 49th Regiment, and detachment of Sappers and Miners.

On the 18th and Royal Marines quitting their ships for the boats, the waving of flags and beating of gongs and drums gave further intimations of decided hostile intentions on the part of the Chinese.

As previously arranged with his Excellency Sir Gordon Bremer, commander-in-chief, a gun was fired from the Wellesley after the 18th and Royal Marines were in the boats, with a view of ascertaining whether resistance was intended. The gun was fired at the round tower most correctly, and no individual injured thereby. As the whole of the guns on shore were manned, a return fire was instantly given from them and a number of war junks, which brought a fire upon the batteries and junks from the whole of the ships-of-war; but of a very short duration; the guns and hills being abandoned, and suburbs evacuated in a very few minutes. The beach and wharf and Temple-hill being cleared, the troops landed without opposition, and I immediately took possession of the hill, from which a very good view of the city is obtained at the distance of about 1,500 yards. As soon as the landing of the 26th Regiment was completed, I pushed forward advanced posts, from the 18th and 26th Regiments, to within 500 yards of the walls of the city, which although in a dilapidated state, are extremely formidable aud difficult of access, being surrounded on three sides with a deep canal of about 25 feet wide, and a continued flat of inundated patty land.

Having consulted with Lieut.-Col. Montgomerie, C.B., of the Madras Artillery, and Capt. Pears, the senior officer of engineers, I decided upon breaching the walls of the city near the west gate, and throwing shells into the north-west

angle, so that in the event of the ordnance being inadequate to breach the point already specified, the north-west angle, which I meant to attempt by escalade, might be more easily carried from the fire kept upon that point having weakened the defence. On the advanced post taking up this position a fire was opened upon them from the walls of the city, and kept up at intervals until near midnight. A few shot, not exceeding eight or nine, were fired from our battery, which tended to silence their firing, without doing any injury. Whilst I was visiting them, several shot were fired without any other effect than proving that the Chinese were utterly ignorant of gunnery.

The second division, consisting of the Madras Sappers and Miners, Bengal volunteers, and 49th Regiment, were landed without delay, and having taken up their position, threw out advanced posts to the front, the latter corps protecting the left of the suburbs.

Early on the morning of the 6th I was happy to find, from the very great exertions of Lieut.-Col. Montgomerie, that during the night he had, in addition to the two nine-pounders landed with the troops, got into position six other guns of the same, size two 5½-inch howitzers, and two mortars, making a total of ten guns, in a position within 400 hundred yards of the walls. From the stillness of the city, I apprehended a change had taken place there, and I waited for day-light before issuing orders for offensive operations; on the first dawn the flags were seen on the walls, as they were the preceding evening; but as the light increased, there did not appear a single person, where there had been thousands the preceding evening, which gave reason to suppose that the city was evacuated; and I sent forward Lieut.-Col. Montgomerie, Major Mountain, Deputy Adjutant-Gen., and Capt. Pears, field-engineer, with a small escort to reconnoitre as closely as possible the state of the works, and endeavour to ascertain whether the city was abandoned or not.

These officers passed the canal (the bridge over which had been broken up) by throwing spars across, and with Capt. Bethune of the Conway, who had now joined them, scaled the wall by means of a ladder found amongst the buildings outside. One or two unarmed Chinese, who appeared above the gate, hung a placard over the wall, and refused by signs to admit them, but offered no other opposition.

The gate was found strongly barricadoed within by large sacks of grain, and by the time that a few planks had been thrown over the canal, a company of the 49th, which I had sent for, took possession of the principal gate of the city of Ting-hae-heen, upon which the British flag was hoisted.

Guards were quickly posted at the whole of the gates, and every protection given to life and property. I lament that several houses in the city had been plundered by the lower order of the Chinese people before we took possession; and that it was carried to considerable extent in the suburbs by the same class during the nights of the 5th and 6th, from their occupying houses which were ultimately proved not to belong to parties claiming them. Order is now restored; but a large portion of the people who went into the country have not yet returned.

A return of the ordnance captured on shore, is herewith transmitted; that on board the war junks was considerable, but of which I have no return.

The loss of the Chinese is estimated at about twenty-five killed, the number wounded I cannot learn, but it must be very small, from round shot having been fired. The admiral is said to be among the latter. I am happy to say H.M. troops escaped without loss of any description, and are prepared for any further services required.

The city of Ting-hae-heen is extensive, the walls being about six miles in circumference. They are built on granite and brick of inferior quality, and with the exception of a hill where the defences are unusually high, there is a deep ditch or canal about 25 feet round the walls at the distance of a few yards.

There are numerous bastions in the works, and with good troops in its present state, the city is capable of making a good defence.

This despatch will be delivered to your lordship by the Hon. Capt. Osborne, to whom I beg to refer you for further particulars respecting the island of Chusan, and our position there.

I have the honor, &c.

(Signed) GEORGE BURRELL, *Brigadier*,
To Earl Auckland, G.C.B., &c. Commanding Eastern Expedition.

RETURN of Ordnance captured at Chusan (on shore) by the combined naval and military force, under the command of Commodore Sir J. G. Bremer, C.B., K.C.H., &c., and Brigadier Burrell, on the 5th of July, 1840.

On the sea face	. . .	24 guns.
On the walls of the town	. .	23 "
In the arsenals	. . .	44 "
	Total	91

The guns, with the exception of a brass one, are all apparently of Chinese manufacture, and of a very inferior description. The brass gun has the date of "1801, made by Richard Phillips," place not mentioned. The guns are small, ranging from two to nine-pounders

A considerable quantity of gunpowder has been found, and three magazines, containing an extensive supply of iron shot, jinjals, matchlocks, swords, bows and arrows, &c., with steel helmets, and uniform clothing for a large body of men, the particulars of which have not been yet ascertained, but of which an inventory is being made. With the exception of the ordnance, most of the articles are packed and stored with much method, and are in good order.

(Signed) P. MONTGOMERIE, *Lieut.-Col.*
Commanding Artillery Eastern Expedition.
GEORGE BURRELL, *Brigadier Commanding.*

Camp, Chusan, 10th July, 1840.

RAPER'S NAVIGATION.

The following further corrections are to be made in the *Practice of Navigation.*

Page 9, line 2,—Take away the comma after the word "index," and put it after 1,

Page 15, No. 65, First fig.—Insert "F" at the intersection of the upper line with the arc DE.

Page 27, line 10,—Insert the word "is" between "term" and "required."

Page 74, Ex. 2,—Mark the lat. of Diego Ramirez, S., and that of C. Lopatka, N.

No. 244, (1), line 4,—After the word "courses" insert "To the same log. cot." add "the log. cosec of half the sum of the colats., and the log sine of half their diff.; the sum is the log. tan. of half the difference of the two courses."

[Though this passage has been omitted in the rule, the example following is complete, and is therefore a sufficient guide. In consequence, however, of the omission, the leaf was reprinted as soon as the error was discovered. The holders of the earlier copies may have the new leaf, in which the above latitudes are also marked, on applying to the publisher.]

Page 128, last line of note,—Alter "1744," to "1774."

Page 203, line 1,—Alter "26th" to "27th."

Page 276, No. 825, line 8, Alter "correcting" to "connecting."

In the Tables.

Page 125,—At alt. 13° 50′, Hor. Por. 56′, alter 30′ 31″ to 50′ 31″.

Page 151, bottom—Alter the Diff. 355 to 335.

Page 238,—Alter the second or repeated $3^h.\ 28^m.$ to $3^h.\ 29^m.$, and $3_h.\ 29^m.$ to $3^h.\ 30^m.$

[This error exists only in the earlier copies as the stereotype plate has been corrected.]

Rates of Pay of Royal Navy.

No. 1.—Quarterly Bills.—A Table showing the rates of pay established by orders in Council, dated 23d Jan. 1805, 25th Nov. 1816, 24th June, 1824, and 10th Aug. 1840; also the respective sums which officers are entitled to draw for Three Calendar Months, under the regulations of Act 11th Geo. IV. cap. 20, as altered and extended by Act 4th Wm. IV. c. 25. but subject to the abatement of the charges standing against them upon the ships' books; and also, in the case of Commanding officers of packets to a deduction of 5*l*. per annum towards the salary of the manager of Chronometers.

Rank.	Full-pay.			Pay by Bill, subject to the deductions which appear upon the ships books, &c.		
	Per Year	Per Month of 28 days.	Per Day.	Jan. 1 to Mar. 31.	April 1 to June 30.	July 1 to Sep. 30 or Oct. 1 to Dec. 31
	£ s. d	£ s. d	£. s. d.	£. s. d.	£. s. d.	£. s. d
Admiral of the fleet	2190 0 0	168 0 0	6 0 0	540 0 0	546 0 0	552 0 0
Admiral	1825 0 0	140 0 0	5 0 0	450 0 0	455 0 0	460 0 0
Vice-admiral	1460 0 0	112 0 0	4 0 0	360 0 0	364 0 4	368 0 0
Rear-admiral or Commodore, 1st class	1095 0 0	84 0 0	3 0 0	270 0 0	273 0 0	276 0 0
If of the above rank, and commanding-in-chief for the time the flag or broad pennant is flying within the limits of his station, in addition	1095 0 0	84 0 0	3 0 0	270 0 0	273 0 0	276 0 0
Captain of the fleet	1095 0 2	84 0 0	3 0 0	270 0 0	273 0 0	276 0 0
Captain, 1st rate	799 19 4	61 7 4	2 3 10	197 5 0	199 8 10	201 12 8
Captain, 2d rate	700 0 4	53 14 10	1 18 4	172 12 2	174 10 6	176 8 10
Captain, 3d rate	600 1 6	46 0 8	1 12 10	147 19 4	149 12 2	151 5 0
Captain, 4th rate	499 18 4	38 7 0	1 7 4	123 5 5	124 12 9	126 0 1
Captain, 5th rate	399 19 7	30 13 8	1 1 11	98 12 6	99 14 5	100 16 4
Captain, 6th rate	350 0 2	26 17 0	0 19 2	86 6 1	87 5 3	88 4 5
Commander	300 0 9	23 0 4	0 16 5	73 19 8	74 16 1	75 12 6
Lieutenant (of 7 years' standing) being senior lieutenant of a sea-going rated ship, or in the command of any of H.M. ships other than those of the packet or surveying establishment	200 15 0	15 8 0	0 11 0	49 10 0	50 1 0	50 12 0
All other Lieutenants	182 10 0	14 0 0	0 10 0	45 0 0	45 10 0	46 0 0
Master of the fleet	200 1 11	15 7 0	0 10 11	49 6 10	49 17 9	50 8 8
Masters, 1st, 2d, and 3d	212 18 4	16 6 8	0 11 8	52 10 0	53 1 8	53 13 4
Masters, 4th, 5th, and 6th	182 10 0	14 0 0	0 10 0	45 0 0	45 10 0	46 0 0
Masters of sloops, &c.	152 10 4	11 14 0	0 8 4	37 12 2	38 0 6	38 8 10
Secretary to the adml. of fleet	499 18 4	38 7 0	1 7 4	123 15 5	124 12 9	126 0 1
Secretary to all flag-officers, Commanders-in-chief	400 0 0	30 13 8	1 1 11	98 12 6	99 14 5	100 16 4
Secretary to all other flag-officers and Commanders, 1st class	300 0 0	23 0 4	0 16 5	73 19 8	74 16 1	75 12 6
Clerk to commodore of 2d class, to be designated as Secretary while so acting	150 0 0	11 10 0	0 8 2	36 19 4	37 7 6	37 15 8
Chaplain	159 18 1	12 5 4	0 8 9	39 8 7	39 17 4	40 6 1
Physician of the fleet, of less than 3 years' service as such	383 5 0	29 8 0	1 1 0	94 10 0	95 11 0	96 12 0

Rank.	Full-Pay			Pay by Bill subject to the deductions which appear upon the ships books, &c,			
	Per Year	Per Month of 28 days.	Per Day.	Jan. 1 to Mar. 31.	April 1 to June 30.	July 1 to Sep. 30 or Oct. 1 to Dec. 31	
	£ s. d	£ s. d	£ s d	£ s d	£ s d	£ s d	
Physician of 3, and less than 10 years' service	574 17 6	44 2 0	1 11 6	141 15 0	143 6 6	144 18 0	
Physician of more than 10 years' service	766 10 6	58 16 0	2 2 0	189 0 0	191 2 0	193 4 0	
Inspector of hospital & fleet	574 17 6	44 2 0	1 11 6	141 15 0	144 6 6	144 18 0	
Inspector, after 10 years' service as such	766 10 0	58 16 0	2 2 0	189 0 0	191 2 0	193 4 0	
Deputy-inspector, with such further allowance when employed in hospital on shore as the Board of Admiralty may think proper	365 0 0	28 0 0	1 0 0	90 0 0	91 0 0	92 0 0	
Surgeon	290 15 0	15 8 0	0 1 0	49 10 0	50 1 0	50 12 0	
Surgeon above 6 years' full-pay service, including service as Assistant-surgeon	219 0 0	16 16 0	0 12 0	54 0 0	54 12 0	55 4 0	
Surgeon above 10 years' do.	255 10 0	19 12 0	0 14 0	60 3 0	63 14 0	64 8 0	
Surgeon above 20 ditto	328 10 0	25 4 0	0 18 0	81 0 0	81 18 0	82 16 0	
Purser	91 5 0	7 0 0	0 5 0	22 10 0	22 15 0	23 0 0	
Second-master, 1st to 4th, & sloops if no master borne	71 5 2	5 9 0	0 3 10	17 11 6	17 15 4	17 19 2	
Second-master, 5th to 6th	61 5 4	4 14 0	0 3 4	15 2 2	15 5 6	15 8 10	
Assistant-surgeon	127 15 0	9 16 0	0 7 0	31 10 0	31 17 0	32 4 0	
Assistant-surgeon, above 3 years' full-pay service	136 17 6	10 10 0	0 7 6	33 15 0	34 2 6	34 10 0	
Assistant-surgeon, if serving in small vessels under 10 years' full-pay service	146 0 0	11 4 0	0 8 0	36 0 0	36 8 0	36 16 0	
Assistant-surgeon, above 10 years' full-pay service	164 5 0	12 12 0	0 9 0	40 10 0	40 19 0	41 8 0	
Assistant-surgeon, if serving in small vessels	182 10 0	14 0 0	0 10 0	45 0 0	45 10 0	46 0 0	

The following old rates of pay will be continued to such medical officers as were not serving on 1st July, 1840, and they will not be entitled to the new rate of pay until they shall have served a period of three years subsequent to 1st January, 1838:—

Rank.	Full Pay.			Pay by Bill subject to the deductions, &c.			
	Per Year	Per Month of 28 days	Per Day.	Jan. 1 to March 31	April 1 to June 30	July 1 to Sep. 30 or Oct. 1 to Dec 31	
	£ s. d.	£ s	s d	£ s d	£ s d	£ s d	
Surgeon	182 10 0	14 0	10 0	45 0	45 10	46 0	
Surgeon, after 6 years	200 15 0	15 8	11 0	49 10	50 1	50 12	
Surgeon, after 10 years	255 10 0	19 12	14 0	63 0	63 14	64 8	
Surgeon, after 20 years	328 10 0	25 4	18 0	81 0	81 18	82 16	
Assistant-surgeon	119 18 6	9 4	6 6	29 11 6	29 18	30 4 6	
Assistant-surgeon, if serving in a small ship where no surgeon is borne in addition	27 7 6	2 2	1 6	6 15	6 16 6	6 18	

No. 2. · HALF YEARLY BILLS.—A Table showing the rates of pay established by orders in council, dated 25th November, 1816, 24th June, 1824, 23rd April 1838 .5th July, 1838, and 10th August, 1840; also the several sums which officers and petty officers are respectively entitled to draw for six months' pay under the regulations of act 11th Geo. IV. cap. 20, as altered and extended by act 4th Wm. IV., cap. 25, but subject to the abatement of the charges standing against them upon the ships books; and also (in the case of a young gentleman under the tuition of the chaplain or schoolmaster,) to a deduction of £5 per annum, for the benefit of those officers.

RANK.	Full pay.								Pay by Bill subject to the Deductions which appear upon the ships' books,													
	Per Year			Pr Month 28 days			Per Day		Jan. 1 to June 30			April 1 to Sep. 30			July 1 to Dec. 31			Oct. 30 to Mar: 31					
	l	*s*	*d*	*l*	*s*	*d*	*s.*	*d*	*l*	*s*	*d*	*l*	*s*	*d*	*l.*	*s.*	*d*	*l,*	*s*	*d:*		
Mate	65	3	7	5	0	-	3	7	32	6	6	32	13	7	32	17	2	32	10			
Naval instructor & schoolmaster, 1st entry	127	15	0	9	16	6	7	0	63	7	0	64	1	0	64	8	0	63	14			
Do. after 3 years service	136	17	6	10	10	0	7	6	67	17	6	68	72	6	69	0	0	68	5			
Do. after 7 years' service	155	2	6	11	18	0	8	6	76	18	6	77	13	6	78	4	0	77	7			
Do. after 10 years' service	182	10	0	14	0	0	10	0	90	10	0	19	10	0	92	0	0	91	0			
Gunner, boatswain, carpenter 1st rate	101	410		7	15	4	6	6	50	4	2	50	15	2	51	0	8	50	0	8		
Do. do. 1st class	91	5	0	7	0	0	5	0	16	5	0	46	15	0	46	0	0	45	10	0		
Do. do. 2nd class	71	5	2	5	9	4	3	10	35	6	10	35	11	6	35	18	4	30	10	8		
Do. do. 3rd class	61	5	4	4	14		3	4	30	7	8	30	14	4	30	17	8	30	14			
1st engineer	156	8	6	12	0		8	6	77	11	6	78	8	6	78	17	0	78	0			
2nd engineer	104	5	8	8	0		5	8	51	14	4	52	5	8	52	11	4	52	0			
3rd engineer	69	1	9	5	6		3	9	33	5	3	34	12	9	34	16	6	34	9			
Midshipman	31	5	8	2	8		1	8	16	10	4	15	13	8	15	15	4	15	12			
Master's-assistant	46	5	6	3	11		2	6	22	19	0	23	4	0	23	6	6	23	I	6		
Volunteer, 1st class	14	6	9	1	2		0	9	7	2	3	7	3	9	7	4	6	7	3			
Clerk to secretary to commander-in-chief	61	5	4	4	14		3	4	30	7	8	30	14	4	30	17	8	0	11			
Do. to do. to junior flag officer	51	5	5	3	18		2	9	25	8	7	85	14	1	25	16	10	50	11	4		
Clerk to schoolmaster (not a naval instructor) 1st rate	61	5	4	4	14	0	3	4	30	7	8	30	14	1	30	17	8	30	11	0		
Do. 2nd and 3rd rate	56	5	5	4	6	4	3	1	27	18	1	28	4	3	28	7	4	28	I	2		
Do. 4th rate	51	5	5	3	18	8	2	9	25	8	7	25	14	1	25	16	10	25	I	4		
Do. 5th, &c.	46	5	6	3	11	0	2	6	27	19	0	23	4	0	23	6	6	23	I	6		

Naval instructors, who receive the new rate of pay, will no longer be allowed the bounty of £30 a year, but if a chaplain act as naval instructor, he will be entitled to the bounty, in addition to his pay as chaplain.

We regret to learn that Commander Byng, of the Racer, in attempting to cross the bar of a river at Sacrificios, was unfortunately drowned by his gig being capsized in the surf. It appears that he was strongly urged by the midshipman of the boat not to attempt it. The boats crew and midshipman, as well as Commander Byng,, were all thrown out of the boat; the former succeeded in reaching the shore, which the Commander also attempted after holding some little time by the boat, but failed and was drowned.

PROMOTIONS AND APPOINTMENTS.

Downing Street, December 18th, 1840.

The Queen has been pleased to appoint the following officers, viz.—Capt. C. J. Austen, Capt. Hon. W. Waldegrave, Capt. M. F. F. Berkeley, Capt. E. Collier, Capt. W. W. Henderson, Capt. A. Fanshawe, Capt. H. Stewart, Capt. E Boxer, Capt H. B. Martin, Capt. H. J. Codrington, Capt. W. H. Henderson, and Capt. H. T. Austin, of the Royal Navy, and Lieut.-Col. W. Walker of the Royal Marines, to be Companions of the Most Honourable Military Order of the Bath.

PROMOTIONS.

The following officers have been specially promoted for their services on the Coast of Syria.

Commanders to be Captains, by commission dated 4th November, 1840.

W. Luckraft, commander of Bellerophon, T. Henderson, commanding Vesuvius, (st.v.) F. D. Hastings, commander of Edinburgh, G. Hathorn, do. of Benbow, L. T. Jones, do. of Princess Charlotte, F. Liardet, do. of Powerful, S. Hope, do. of Revenge, R. F. Stopford, commanding Phœnix (st. v.)

Commanders to be Captains, by commissions dated 5th November, 1840.

H. J. Worth, commander of Hastings, R. S. Robinson, commanding Hydra (st. v.)

The undermentioned Commanders are specially noted for promotion to Captains, when they shall have completed the time required by regulation.

T. L. Massie, commander of Thunderer, W. J. Williams, commanding Stromboli (st. v.) The Hon. C. G. J. B. Elliot, commanding Hazard.

Lieutenants to be commanders, by commissions dated 4th November, 1840.

W. Clarke, 1st Lieutenant of Edinburgh, H. H. Bingham, do. of Princess Charlotte, C. C. Birkett, do of Bellerophon, G. Lowe, do. of Revenge, W. H. Hall, do. of Thunderer, J. Batt, do. of Vesuvius, (st.v.) W. Maitland, do. of Benbow, W. F. Glanville, flag Lieut. Princess Charlotte, R. H. Elliot, 1st Lieut. of Powerful, T. Stuart, do. of Hazard, D. Curry, do. of Pique, F. T. Brown, do. of Gorgon (st. v.) J. Fulford, do. of Talbot, J. Russell, (b) do. of Stromboli (st. v.) G. N. Broke, do. of Wasp, W. K. Stephens, do. of Carysfort, C. G. E. Patey, do. of Castor.

Lieutenants to be Commanders, by commissions dated 5th November, 1840.

C. Thompson, 1st Lieut. of Hastings, S. Grenfell, do. of Cyclops, G. Giffard, Lieut. of Cyclops, E. P. Charlewood, Lieut of Benbow.

The undermentioned is specially noted for promotion to Commander when his regulation time is completed.

J. S. A. Dennis, 1st Lieutenant of Phœnix.

Mates to be Lieutenants, by commissions dated 4th November, 1840.

G. Wyke, C. O'Brien, G. J. R. Snow, J. A. Shears, R. Williams, G. Johnson, A. La Touche, T. Heard, E. W. Sanders, T. C. O'D. Whipple, G. E. Patey, R. D. Stupart, A. Warren, L. N. Burrell, J. Sanderson, C. J. Walton, C. S. Norman, A. Farquhar, W. J. Lake, A. W. Wood, M. S. Kirks, G. H. C. Sunderland, R. M. Floud, H. Stewart, J. Blackmore, J. M. Boxer, M. H. Rodney, W. C. Chamberlain.

Mates to be Lieutenants, by commissions dated 5th November, 1840.

D. Reid, W. T. Disney, R. Hoops, S. F. Short, J. Dunsterville, J. Allen, (b) F. H. Stanfell, J. M. D. Smith, W. W. Pridham, R. D. White, C. Bullen, J. H. Cockburn, W. Butler.

The two last for special mention in the Gazette.

Assistant-Surgeons to be Surgeons, by warrant dated 4th November, 1840.

W. Houghton, P. Niddrie, M.D., J. Plimsoll, H. Baker, A. B. Cutfield.

Five Second Masters have been promoted to be Masters, and six more are specially noted for promotion, when they shall have passed the usual examination.

CAPTAINS—G. Mansell, W. Warren.

COMMANDERS—P. B. Stewart, Augustes Leopold Kuper, late *Pelorus*, commissioned to bear date from 27th July, 1839.

LIEUTENANTS—Lord F. Kerr, J. P. Thurnburn, R. Maguire, W. K. O. Price, A. Cumming, and W. H. Gennys, the latter confirmed in death vacancy of Lieut. Le Mesurier, killed.

PURSER—J. Bluet.

APPOINTMENTS.

CAPTAINS.—A. Milne, (act.) to Cleopatra, v. Lushington, invalid. W. W. P. Johnson, (act.) to *Crocodile*. v. Milne, to *Cleopatra*. G. Elliot, (act.) to *Volage*.

COMMANDERS—H. Harvey, (act.) to *Serpent*, v. the Hon. R. Gore, invalid. T. Harvey, (act.) to *Racer*, v. Byng, deceased. W. Hubbard, to *Belleisle*. T. J. Clarke, (act.) to *Columbine*. E. Yonge, to *Indus*, v. Castle, sick.

LIEUTENANTS—W. G. B. Estcourt, to command *Lizard*, (st. v.) J. B. Marsh, and H. T. Laye, to *Endymion*. W. S. Blount to *Pluto*. E. H. Kenney to *Excellent*. J. P. Thurnburn (act.) to *Wolverine*. M. Knox to *Phœnix*, v. N. Norway, sick. F. S. Ellman, to *Tweed*. W. Boys to *Britannia*, v. Gordon, sick. P. H. Dyke, W. Webster, (b.) and H. J. Robins, to *Iris*.

MASTERS—A. W. Quinlan, to *Indus*, v. Strutt, appointment cancelled. W. J. Wood to *Iris*. J. Roberts to *Stromboli*.

SURGEON—G. A. Munro, to *Tweed*.

MATES—W. Hickey to *Caledonia*. N. Vansittart from *Queen* to *Tweed*. M. H. Perceval from *Vestal* to *Indus*. C. J. Hoffmeister to *Impregnable*. W. D. Carrol, and J. M. Boyd to *Queen*. H. Bayley and R. G. Campbell to *Impregnable*. W. Moorsum and A. F. Webster to *Endymion*. H. J. Robins to *Iris*. G. M. Jackson and F. J. F. Barrow to *Indus*. W. V. D. Anson to *Iris*. F. Robinson to *Cyclops*. A. Paget to *Indus*.

SECOND-MASTERS—W. H. T. Green to *Albert*, for Niger expedition. W. Squire to *Howe*. H. Hooper to *Southampton*. J. Drysdale to *Indus*. F. Loney to *Lizard*. W. Saunders from *Lightning* to *Monkey* steam-tug. W. C. Pettigrew to *Pluto*.

VOLUNTEER 1ST CLASS—T. Palmer to *Tweed*. J. J. S. Josling to *Iris*.

MASTER'S ASSISTANT—B. Woolley to *Lucifer*. W. Diaper and J. Milton to *Victory*.

ASSISTANT-SURGEONS—W. M'Dermott M.D. to *Caledonia*. T. Hart to *Endymion*. G. G. Creighton (additional) to *Caledonia*. Risk to Greenwich Hospital, v. M. Pritchet, promoted. Dr. C. P. Blake to Haslar Hospital J. R. Beatty to *Queen*. J. Peters to *Pluto*. T. A. Gray to *Vernon*. W. B. Fegan to Haslar Hospital. J. J. W. Roberts to *Meteor*. G. M. McClure and J. M. Jackson to *Excellent*. A. Euston to *Indus*. J. Fisher, of the *Caledonia*, to the *Queen*. C. W. White to *Ceylon*, for service at Malta Hospital. J. Hobb to *Indus*.

PURSERS—J. Pinhorn to *Edinburgh*. E. F. Heaslop to *Cyclops*. Young (act.) to *Jaseur*. S. H. Manley to *Iris*. E. B. Robins (act.) to *Racer*. D. Clow to *Impregnable*.

CHAPLAINS—G. Bellamy to *Endymion*. W. R. Payne to *Indus*. W. G. Sucker to *Revenge*.

CLERKS—C. M. Balfour, (assistant) to *Vernon*. E. S. F. Cheeseman (additional) to *Victory*. C. J. France, (assistant) to *Tweed*. J. Haddock, (in charge) to *Pluto*. J. S. Millingham to *Lizard*. C. G. Burney to *Indus*. W. T. Biddlecombe to *Tweed*. W. F. Hennah from the *Wellesley*, to be additional Clerk of the *Druid*.

COAST-GUARD—*Commanders*—D. Peal from Grimsby District to Folkstone, v. Barton, appointed to *Monarch*. C. Madden to Grimsby District, v. Peat. W. H. Jervis to Whitstaple from Donaghadee District, v. O. Oakes, resigned. A. C. Duncan to Ballycastle, v. A. M'Gregor Skinner to Donaghadee. Lieut. T Cartwright from Irish Coast Guard, to be Chief Officer at Lidd, Romney.

Captain T. Renwick has been appointed to the out-pension of Greenwich Hospital.

MOVEMENTS OF THE ROYAL NAVY.

AT HOME.

ALBAN, (st. v.) Mr. F. King, 2nd. Dec left Dublin with troops for Cork.

APOLLO, Lieut.-Com. R. Pritchard, 9th December towed into Portsmouth.

AVON, (st. v.) 1st December arrived at Plymouth, 4th sailed for Falmouth, 14th at Portsmouth from Sheerness

BLAZER, Lieut.-Com. J. Steane, 27th November left Woolwich for Barbados, 2nd December left Portsmouth.

BRITANNIA, 120, Capt. J. Drake, 19th November left Portsmouth for Mediterranean.

FERRET, 10, Lieut. W. S. Thomas 29th November arrived at Tarbert.

HOWE, 120, Capt. Sir W. O. Pell, 19th November left Portsmouth for Mediterranean.

INCONSTANT, 36, Capt. D. Pring, 13th December sailed from Cork, 17th arrived at Plymouth.

LOCUST, (st. v.) Lieut.-Com. J. Lunn, 1st December passed Deal on way to Portsmouth, 3rd arrived at Plymouth.

LUCIFER, Capt. F. Beechey, 2st Dec., arrived at Spithead.

PHOENIX, (st. v.) Com. R. Stopford, 1st December arr. at Portsmouth with despatches, announcing the capture of Acre.

RAVEN, 4, Lieut.-Com. D. R. B. Mapleton, 6th December at Plymouth from Bristol, eleven days in a gale of wind.

SAPPHIRE, (tr. s.) Master-Com. G. W. Nembhard, 19th November sailed for Cork.

SERPENT, 16, Com. Hon. R. Hore, 1st December arr. at Spithead, 8th at Chatham.

SPITFIRE, (st. v.) Lieut.-Com. J. Evans, 7th December arr. at Portsmouth and sailed for Woolwich.

THE BOXER, surveying vessel, Capt. Bullock, is to be placed in ordinary, and her crew to be turned over to another vessel.

PORTSMOUTH, December 17th. *In harbour*,—Queen, Victory, Indus, Excellent, Royal George, Tweed, Phœnix, Rapid, Apollo, Athol, Cuckoo.

AT PLYMOUTH. *In Hamoaze*,—Caledonia, San Josef, Impregnable, Belleisle, Endymion, Raven, Sylph, Carron, and Comet.

ABROAD.

ACHERON, (st. v.) Lieut.-Com. A. Kennedy, 15th November at Malta.

ASIA, 84, Capt. W. Fisher, 20th November arr. at Malta from Alexandria.

ATHOLL, 28, (tr. s.) Master.-Com. C. P. Bellamy, 5th November returning down the St. Lawrence, got on shore below I. Madrone.

BASILISK, 6, Lieut.-Com. J. Russell, 7th August at Valparaiso from Cobija, 18th sailed.

BEACON, (sur. v.) Lieut. T. Graves, 4th December at Malta from Athens.

BLENHEIM, 72, Capt. Sir H. F. Senhouse, 22nd July at Macao, 23rd sailed for northward.

BRITOMART, 10, Com. O. Stanley, 2d July arr. at Bay of Islands.

CALCUTTA, 84, Capt. Sir J. Roberts, CB., 24th November left Malta for Levant

CASTOR, 36, Capt. E. Collier, 30th November arr. at Malta from Smyrna.

CHARYBDIS, 3, Lieut.-Com. E. B. Tinling, 2nd October arr. at Jamaica from Nassau, 18th arr. at Halifax.

CHILDERS, 16, Com. E. P. Halstead, 7th October arr. at Calcutta from Singapore.

CLEOPATRA, 26, Capt. A. Milne, 19th October arr. at Bermuda from Newfoundland, 5th November left Bermuda for Halifax.

CROCODILE, 26, Capt. W. P. Johnson, (acting) 19th November arr. at Bermuda from Newfoundland, 5th November sailed for Jamaica.

CURLEW, 10, Lieut.-Com. G. Rose, 7th September left the Cape for Eastern Coast.

CYCLOPS, (st. v.) Capt. H. T. Austen, 24th November arr. at Malta from Levant.

CYGNET, 10, Lieut. E Wilson, 21st October at Teneriffe, 23rd sailed for Africa.

DEE, (st. v.) 8th November left Halifax Bermuda.

ELECTRA, 18, Com. E. P. Mainwaring, 26th September at Mazatlan.

FANTOME, Com. Butterfield, 17th Oct. at St. Helena.

FAVORITE, 18, 24th July arr. at Sydney, from Southsea Islands.

GRECIAN, 16, Com. W. Smyth, 26th September at Rio from a cruize.

HASTINGS, 72, Capt. J Lawrence, CB., 4th November at Malta from Beyrout.

HECATE, (st. v.) Com. H. Ward, 10th November arr. at Lisbon, 21st sailed for Mediterranean, 3rd December left Malta for Syria, with ordnance stores.

HERALD, 26, Capt. J. Nias, 24th July arr. at Sydney from Southsea Islands.

HYDRA, (st. v.) Com. R. Stopford 27th October arr. at Malta from Sidon.

LILY, 16, Com. C. Dear, 17th August at Cape refitting to return to East Coast.

MAGPIE, (s. v.) Lieut.-Com. T. S. Brock, 2nd December at Malta from Athens.

MEDEA, (st, v,) Com. F, Warden, 4th December at Malta from Alexandria.

PARTRIDGE, 10, Lieut.-Com. W. Morris, 20th September arr. at Pernambuco, 13th October sailed for Macao.

PEARL, 18, Com. C. C. Frankland, 11th September arr. at Bahia from Macao.

PERSIAN, 18, Com. M. Quin, 27th September at Ascension.

PICKLE, 5, Lieut.-Com. F. Holland, 29th September arr. at Jamaica, 4th October sailed for Honduras.

PILOT, 16, Com. G. Ramsay, October arr. at Jamaica.

PRESIDENT, 50, Capt. J. Scott, 2nd August arr. at Valparaiso from Talchanana, 29th remained.

PROMETHEUS, (st.) Lieut.-Com. T. Spark, 15th November left Malta for Syria.

RACEHORSE, 18, Com. Hon. E. A. Harris, 10th October left Jamaica for Halifax, 8th November left Halifax for Bermuda.

RACER, 16, Com. G. Byng, 2nd Oct. at Tampico.

RINGDOVE, 16, Com. Hon. K. Stewart, 30th September left Halifax for Bermuda.

RODNEY, 92, Capt. H. Parker, CB., 22nd October left Malta for Levant.

ROVER, 18, Com. T. W. C. Symonds, 26th October arr. at Halifax from Jamaica with troops, 7th November at Bermuda.

SAPPHO, 16, Com. T. Frazer, 1st Sept. arr. at Belize, and sailed for Vera Cruz, 29th Oct. at Vera Cruz.

SARACEN, 10, Lieut-com. H. W. Hill, 27th Sept. at Ascension.

SATELLITE, 18, Com. J. Robb, 1t Nov. left Halifax for Barbados.

SCORPION, 10, Lieut.-com. C. Gayton, 3d Dec. sailed from Gibraltar, 5th spoken off Cape de Gatte.

SERINGAPATAM, 42, Capt. J. Leith, 4th Oct. arr. at Barbados from Antigua.

SKIPJACK, 5, Lieut.-com. H. Wright, 25th Oct. arr. at Barbados from Antigua

TALBOT, 26, Capt. S. Codrington, 21st Nov. at Constantinople from Acre, with 100 Egyptian prisoners.

Thunder, st. v. Com. E. Barnett, 14th Oct. left Bermuda for Nassau.

TYNE, 26, Capt. J. Townshend, 21st Nov. at Corfu from Zante.

VESUVIUS, st. v. Lieut-com. W. Blount, 29th November arrived at Alexandria from Malta.

VICTOR, Com. W. Dawson, (a), 25th Oct. arr. at Jamaica from Halifax.

VOLCANO, st. v., Lieut-com. J. West, 4th Nov. left Madeira for Barbados.

WANDERER, Com. J. Denman, 27th September at Ascension.

WASP, 16, Com. G. Mansell, 29th November arrived at Malta from Smyrna

WINCHESTER, 50, Capt. J. Parker, 29th October at Bermuda from Halifax.

WIZARD, 10, Lieut.-Com. T. F. Birch, 26th September at Rio from a cruize.

ADMIRALTY ORDERS.

Admiralty, 9th Nov. 1840.

The Lords Commissioners of the Admiralty are pleased to direct, that Mates and Naval Instructors being now Warrant Officers, shall not be subject to the restrictions imposed by the Act of the 11th George IV., chap. 20, in respect to the Letters of Attorney and Wills of Petty Officers, and that they shall not be subject to the examination of the Inspector of Seamen's Wills; but that any person may be deputed by them, whether in the United Kingdom or abroad, under Letters of Attorney, to receive the Prize Money to which they may be entitled. This Order is not, however, to affect the validity of any Will according to the provisions of the said Act, or of any Prize Order which is or may be executed or given by any Mate or Naval Instructor, before the 1st of July, 1841.

By Command of their Lordships,
R. MORE O'FERRALL.

To all Captains, &c.

Admiralty, 10th Dec. 1840.

It being of importance that the Returns made by the respective Divisions of Royal Marines should be strictly correct, and their accuracy depending in some degree upon the regular receipt of Returns at Head Quarters, from the different ships and vessels in which Detachments are embarked; the Lords Commissioners of the Admiralty desire, that the Captains and Commanding Officers of Her Majesty's Ships and Vessels will cause such Returns to be regularly and carefully made out, and signed by the Officer or Non-commissioned Officer commanding Detachments embarked, and countersigned as well by the Captains or Commanding Officers of the respective Ships and Vessels, according to the accompanying form, such Returns to be transmitted on the first day of every quarter under cover to the Secretary of the Admiralty, or as soon after as opportunities may occur.

By Command of their Lordships,
R. MORE O'FERRALL.

Division | Quarterly Return of a Detachment of Royal Marines serving on board Her Majesty's Ship Commanded by dated at 18

Date of Embarkation.	Company.	Name.	Quality.	D. D.D or R.	Time when.	Where last clothed, &c.	Up to what time. Clothing.	Cap	Duck ſk & trowrs	Remarks.

Signed Commanding H.M.S. | Signed Commading the Detachment embarked.

Memo.—In cases of Men sent in a prize to a distant Port, discharged to Sick Quarters, or into another Ship for passage to England, or otherwise, insert in column of remarks, or at foot of this return, the date, &c., of such casuality.

The following certificate which appears exclusively in this journal will be required to be furnished by the Master-engineer at Somerset House, when officers commanding steam vessels are passing their accounts; the order of the 28th October, 1834, directing that the instructions attached to steam logs be strictly observed.

I hereby certify, that a Steam Log and an Engine Room Register of Her Majesty's Steam the between the and kept by have been delivered into this Office, and that it appears therein that the provisions of their Lordships' Circular Order of the 28th October, 1834, have been strictly complied with:

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 9th Nov. at Esher, the wife of Capt. M. J. Currie, R.N. of a son.

At Falmouth, Nov. 24th, the lady of Lieut. Griffith, H.M.P. Magnet of a son.

At East Cosham House, the lady of Lieut. Wiseman, R N. of a daughter.

At Isle of Wight, the lady of Lieut. Pedder, R.N. of a son.

Marriages.

At Islington, E. J. Field, Esq., of Edmonton, to Augusta, daughter of the late Lieut. E. J. Cavell, RN.

At Croydon, J. R. Sterritt, Esq., surgeon RN., to the widow of Lieut. James Reid, RN.

At Plymouth, on the 4th Dec. Mr. W. R. Madge, master RN., to Christiana M. daughter of Mr. Giles, RN.

On the 9th Dec. at Alverstoke church, Robert, son of the late T. Tryon, Esq., to Henrietta, daughter of Capt. Provost, RN.

At Liverpool, on the 31st Oct. Mr. F. Sweetman, of Ryde, Isle of Wight, to Miss M'Leod, daughter of the late Mr. James M'Leod, RN.

On the 17th Nov., at Dibden church, the Rev. T. Atkinson, of Rascelf, Yorkshire, to Henrietta Jane, daughter of Capt. Willes, RN.

At Belfast, on the 17th Nov., J. Bates, Esq. of Belfast, solicitor to Jane Anne, second daughter of Lieut. J. Victor, RN.

At Charlton, Kent, Dr. John Wilson, RN. to Catherine, daughter of the late J. Peake, Esq.

Deaths.

At Jersey, on the 8th Dec. aged 85, Margaret, relict of the late Rear-admiral Worth.

At Bath, on the 15th Dec., Admiral Sir H. Bayntum, GCB., aged 75. The death of this gallant officer was rather sudden.

At Southampton, on the 27th Nov., at an advanced age, Charles Tinling, Esq., Admiral of the Red.

The following officers perished in H.M. surveying vessel Fairy, which is supposed to have foundered in the North Sea, off Kessingland, on the 13th Nov. Capt. Hewett, leaving a wife and eight children, Mr. Stevenson, acting-master, Mr. W. Hewett, midshipman, son of Capt. Hewett, Mr. C. B. Adam, midshipman, son of Vice-Admiral Sir Chas. Adams, Mr. F. J. Chapple, assistant-surgeon, Mr. H. Johnson, purser RN. acting-clerk, leaving a wife and nine children, Mr. G. Gregory, artist, leaving a wife and one son.

At Malta, on the 23d of Nov. last, Mr C. F. Chimmo, mate of H.M. ship Hastings.

On the 17th Nov., at Camden New Road, J. Hutton, Esq., purser R.N. of an affection of the heart, after severe and protected suffering.

On the 10th, at Barnstaple, suddenly, whilst conversing with his sister, John D. Jones, Esq., purser RN. aged 62 yrs.

At Abergaveny, on the 17th Nov. aged 65, T. Steel, Esq., MD.

At Parkstone, near Poole, Com. R. Wadham, RN. aged 67 years.

On the 24th Nov., on his passage from Jamaica, Lieut. T. V. Cooke, RN., commanding the barque Pegasus.

At Inverary, New South Wales, David Reid, Esq., J. P. surgeon RN., aged 65, one of the first settlers.

TO OUR FRIENDS AND CORRESPONDENTS.

The lengthy dispatches from the Levant and China, occupy so much of our present number, that we have been obliged to reserve several important communications fo our next. The papers from Madras among others. For the same reason, the continuation of our notice of Lieut. Raper's work, commenced in our last number, and those of several other books and charts, are also postponed, as well as our usual records in the way of *Shakings*, &c. We shall endeavour to make up for this in our next.

METEOROLOGICAL REGISTER.

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

From the 21st of November to the 20th of December, 1840.

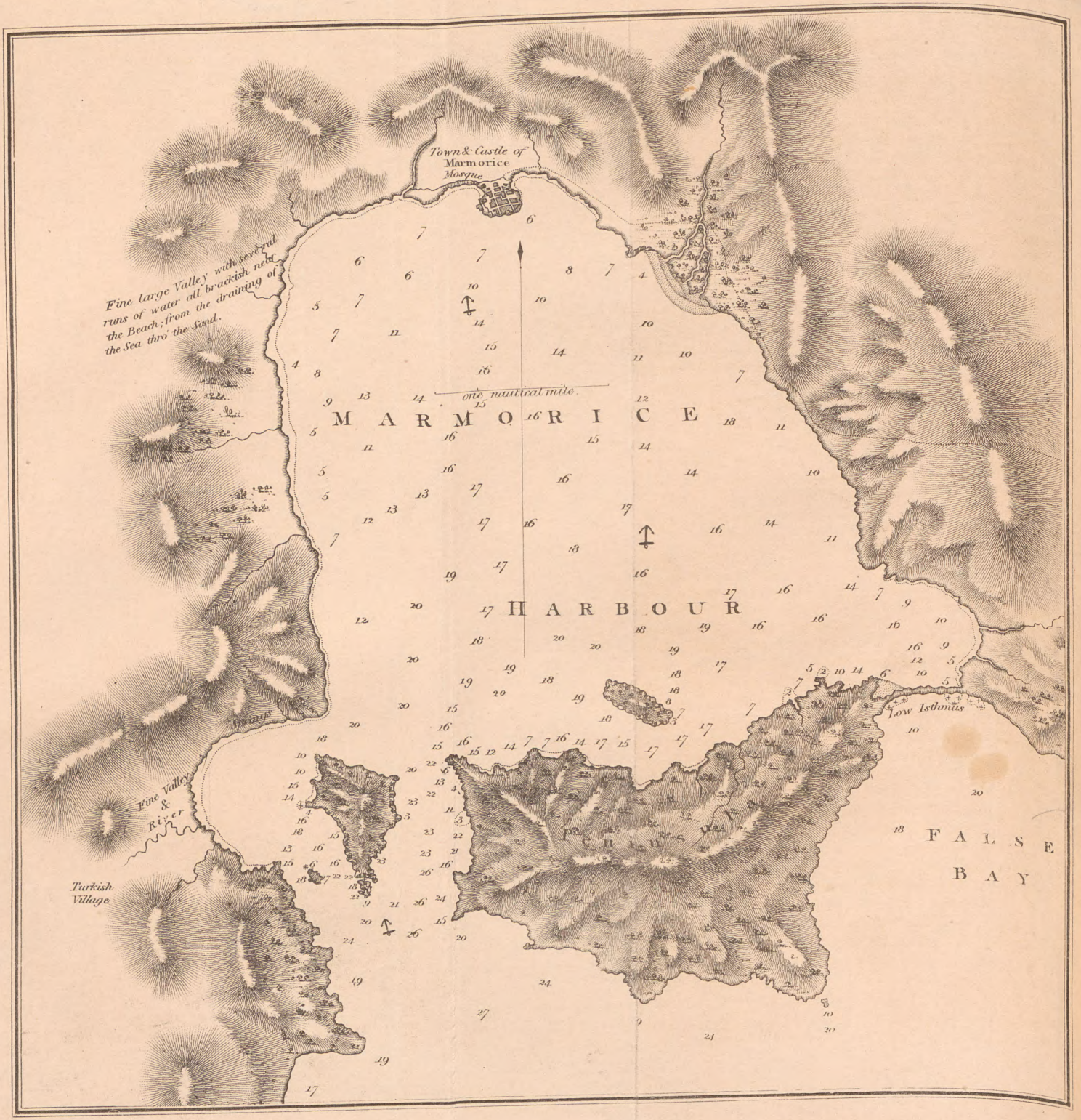
Month Day.	Week Day.	Barometer.		Fahr Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P.M.
		In Dec.	In Dec	o	o	o	o						
21	S.	29·51	29·23	41	43	35	41	SW	W	7	5	qor (2)	bcp (3)
22	Su.	29·73	29·86	38	40	37	42	N	N	4	5	b	bc
23	M.	30·01	29·97	34	44	31	45	SW	SW	2	3	osr 2)	od (3)
24	Tu.	30·10	30·19	48	50	44	52	NW	N	2	2	bc	bc
25	W.	30·38	30·38	37	42	33	46	NE	E	3	2	bc	bc
26	Th.	30·42	30·38	29	38	27	39	E	NE	2	2	bf	b
27	F.	30·39	30·37	26	37	25	38	SE	E	1	2	bf	b
28	S.	30·37	30·32	26	31	24	32	E	E	1	1	f	f
29	Su.	30·27	30·23	24	37	22	40	E	SW	1	3	f	bc
30	M.	30·05	30·03	48	51	41	53	SW	SW	4	4	o	od 3)
1	Tu.	29·93	29·96	51	52	48	56	SW	W	3	2	o	o
2	W.	30·17	30·20	43	44	42	46	NW	NW	2	3	bc	bc
3	Th	30·50	30·49	31	35	30	36	N	SW	2	2	b	b
4	F.	30·45	30·41	29	34	27	36	SW	SW	2	1	b	o
5	S.	30·34	30·27	37	40	35	41	SW	SW	1	1	o	o
6	Su.	30·16	30·07	38	39	36	40	W	W	1	1	o	o
7	M.	29·81	29·65	36	35	30	37	SW	S	4	4	bc	o
8	Tu.	29·24	29·24	37	41	31	42	SW	SW	5	3	o	or (3
9	W.	29·70	29·81	33	40	30	41	SW	SW	2	2	b	b
10	Th.	29·94	29·92	40	41	32	42	SE	SE	2	2	bc	o
11	F.	29·92	29·92	36	35	31	36	E	E	4	4	o	o
12	S.	30·08	30·13	36	36	33	37	E	E	3	2	o	o
13	Su.	30·24	30·24	32	32	31	33	E	E	4	3	o	o
14	M..	30·20	30·18	23	28	22	29	NE	E	2	2	bc	bc
15	Tu.	30·22	30·21	25	25	22	26	NE	NE	2	3	bcps (2	bc
16	W.	30·10	29·95	26	28	19	30	N	NW	3	1	os (2)	os (3) (4)
17	Th.	29·72	29·75	30	20	17	30	NE	E	2	1	os (1)	bcs (4)
18	F.	29·60	29·50	26	34	16	35	NE	E	2	5	bc	os 4)
19	S.	29·53	29·53	29	33	25	34	E	E	2	2	o	o
20	Su.	29·80	29·92	33	34	31	35	NE	NE	4	2	o	o

November—Mean height of the barometer = 29·599 inches : mean temperature = 42·7 degrees : depth of Rain fallen = 2·70 inches.

H.M.S. FAIRY.

It is with painful feelings that we find ourselves at length obliged to acquiesce in the prevailing opinion, respecting the loss of her Majesty's sloop Fairy. The return of her Majesty's steamer Salamander, to Leith, after having visited Flekeroe, Stavanger, and Bergen, and other intermediate places, as well as the Shetland Islands, in search of her, annihilates our last hope of hearing of her safety in one of the numerous northern ports. In our next number, we shall place on record the facts which are known concerning her. Although the loss of such an accomplished officer as Capt. Hewett, is irretievable, yet, we feel great satisfaction in announcing to the maritime world, that the major part of his noble survey of the North Sea is on the copper, and will be published forthwith.

We have indeed lost the fruits of that comprehensive experience which Captain Hewett had been for eight years maturing, and which he was about to embody in the shape of sailing directions; but his positions of all the banks, and the result of three hundred thousand of his soundings, our readers will rejoice to learn are safe.


Town & Castle of
Marmorice
Mosque
Fine large Valley with several
runs of water all brackish near
the Beach; from the draining of
the Sea thro' the Sand.
one nautical mile
MARMORICE
HARBOUR
Low Isthmus
Fine Valley
&
River
Turkish
Village
FALSE
BAY

Description of the Musquito Coast,—*By Capt. R. Owen, R.N.*

Cape Gracias a Dios is the north-east extreme of the Musquito Coast. It forms a projecting point at the south side of the entrance of the Wanks River (Rio Segovia of the Spaniards). The north-west point of the entrance bears north-west from the Cape, nearly three-quarters of a mile. There is a shallow bar formed in a curve out to the north-eastward, between the points at the mouth, with only three or four feet over it in the deepest part, which is round a dry sand bore, three-quarters of a mile N.N.E. from the Cape. There is two and three fathoms inside.

A narrow strip of land covered with high trees reaches to the south-westward from the Cape, forming a spacious, but shallow harbour, the entrance of which is up in the bight of the bay to the south-westward, close over to the western shore. There is a small space with two and a half and three fathoms reaching for about one mile beyond the entrance, the rest of the harbour has only from eight to twelve feet, with muddy bottom. This harbour has been formed within the last century. The English used to cut mahogany up the Wanks river, and they made a deep cut nearly one mile and a half in length, about three miles above the mouth, into what was at that time an open bay with some cays on the eastern side, since which the neck of land, that now makes the eastern side of the harbour, has gradually formed. (See *Columbian Navigator*, vol. 2, page 148, edit. 1824.)

The cut still remains with twelve feet water in it, but there is a bar of soft mud that is nearly dry formed across the mouth.

The bay of Cape Gracias a Dios to the southward of the harbour is sheltered from N.E.b.N. round by north to S.S.W., the soundings are very regular from six to three fathoms, soft muddy bottom. The best anchorage for vessels that cannot get into the harbour is in four or four and a half fathoms, with the entrance of the harbour bearing north-west, and the eastern extreme of the land bearing N.E.b.E.

There are a few Europeans living at a small rude village on the west shore of the harbour, about half a mile above the mouth. They trade with the natives for tortoise-shell, sarsaparilla, mahogany, hides, gums, and a few other articles. The mahogany is cut up the Wanks river, where large canoes are formed roughly out of the solid trees, and are sent to Belize, and to Jamaica for sale.

The king of the Musquito Indians lives about forty or fifty miles up the river. He was educated at Jamaica, but he does not appear to have benefited by any thing that he learned there. The specimen that we saw of the Musquito Indians at Cape Gracias a Dios was any thing but favorable, and does not at all accord with the account generally given of them. They were living in the most abject poverty and wretchedness. Their huts are of the most rude and comfortless description, much worse than any I have ever seen in Africa; they are merely a few rough poles driven into the ground, with a roof of palmetto leaves, the sides being entirely open! From their long intercourse with Europeans I was prepared to find them in a much more advanced state. They are not a numerous tribe, and are said to be decreasing in

number very much. They are confined principally to the coast, and the banks of the rivers and lagoons.

The bank of soundings off the coast between Cape Honduras and Cape Cameron varies in its distance off shore. Just to the eastward of the Roman river it reaches out for seventeen miles, the edge then takes a bend in to the southward, passing on an east line about twelve miles outside the Great and Little Rock Head, when the breadth gradually diminishes to five miles off Cape Cameron. It is free from danger for the whole extent, with deep soundings of forty and fifty fathoms near the edge, and from six to ten fathoms close in to the beach. It is very steep to just to the eastward of Cape Honduras, deep soundings of twenty fathoms reaching within less than a mile of the shore; there is however, as little as ten fathoms outside, a few miles to the northward, where the soundings are rather irregular.

From the Roman river to the Great Rock Head, the line of ten fathoms is about two miles off shore, and from thence to Cape Cameron it approaches to within a mile, so that a vessel should not come into less than twenty fathoms during the night off this part of the coast. The bottom is a mixture of mud and sand, except off Cape Honduras, where it is coarse gravel, with coral near the edge.

From Cape Cameron the edge of the bank runs nearly E.b.N., until about ten miles to the eastward of the meridian of Point Patook, when it trends up about N.E.b.E. as far as the meridian of 82° 30′ W., and into the parallel of 16° 43′ N., which is the northern extreme of the great Musquito bank. The edge is seventeen miles from Point Patook; and upwards of fifty miles to the northward of the Carataska Lagoon, whilst in the meridian of Cape Gracias a Dios it reaches eighty-six miles to the northward of the Cape.

There is not any danger upon the bank to the westward of 82° 30′ W., or about twelve miles to the eastward of the meridian of the Carataska Lagoon entrance.

Off Cape Cameron the deep soundings approach very near to the shore; there is twenty fathoms within one mile and a half of the beach.

Off Black river the soundings decrease more gradually, the line of twenty fathoms is there about three miles and a half off shore.

Abreast of the entrance of Brewers Lagoon twenty fathoms is full seven miles out, and off Point Patook it reaches to the distance of nine miles; from hence the line of twenty fathoms takes nearly an east direction as far as the Vivorilla Cays in the meridian of Cape False.

In beating along shore at night between Black river and Point Patook, it would not be advisable to come into less than twelve fathoms, but to the eastward of Point Patook you may stand safely into eight fathoms all the way to Cape Gracias a Dios. During the day you may stand close in shore into five fathoms.

The soundings are very regular on this part of the bank, decreasing as you approach the shore. Above forty fathoms the soundings increase very suddenly to upwards of one hundred fathoms. The bottom is a mixture of sand and mud, with gravel off Brewers Lagoon.

There is a coral ledge with irregular soundings from seven to fifteen fathoms, about thirty miles N.N.W. of the mouth of the Carataska

Lagoon. It is ten miles in length from north to south, and four miles wide. The deep water soundings around it are of soft mud and sand.

The Great Musquito bank reaches to the north-eastward of Cape Gracias a Dios for upwards of one hundred and thirty miles.

The first danger on the bank from the north-eastward, and the one most distant from Cape Gracias is Cay Gorda, a small isolated barren rock. It is about seventy miles north-east of the Cape. There is a small detached breaker about five miles and a half E.b.S. of Cay Gorda, it is called Farrals breaker. These dangers stand quite detached, the bank is clear for thirty miles within them. They may be avoided when standing on to the bank from the northward, by not coming into less than twenty fathoms. There is a ledge with from seven to ten fathoms reaching to the S.S.E. from Cay Gorda for nearly forty miles. The northern part of this ledge has corally bottom, and the southern part has fine sand.

The Caxones of the Spaniards, called by the fishermen, the Hobbies, are a cluster of small cays, and dangerous reefs about sixty-five miles north of Cape Gracias, and twenty miles within the northern edge of the bank. They extend for about twelve miles W.N.W. and E.S.E. The line of twenty fathoms reaches within about four miles of them to the northward, which will give sufficient warning to vessels standing on to the bank during the night.

Outside of the Caxones, and of Cay Gorda, both to the northward and eastward, the bank is quite free from danger.

There is a snug anchorage in six fathoms, under a spit of reef to the northward of the Caxones Cays, much used by the fishermen from the Caymans, and from Belize, who come here in the season to fish for the hawks-bill turtle, from which tortoise-shell is procured.

Three miles to the southward of the west end of the Caxones, are the Carataska shoals or reefs; they are two small reefs, each about three-quarters of a mile long, running about S.S.E., with a small sandy cay three feet above water upon each of the reefs.

The Seal Cays are about four miles and a half S.S.E. of the Carataska reefs; they are three miles in extent in the same direction, and are situated upon a coral bank, nearly dry, A ledge with from seven to ten fathoms, reaches for five miles to the S.S.E. The Great Seal Cay is at the south end of the coral bank, it is about four feet above water, and has some cocoa-nut trees growing upon it. There is a rock nearly dry one mile and a half S.E.b.E. of the Great Seal Cay.

The Vivorillas, (or Caymans of the fishermen,) are abont four miles and a half S.S.W. of the Seal Cays. There are two cays about two miles apart with trees on them, and a coral reef between, with a few small sandy cays upon it. There is anchorage under the west side of the reef in seven and eight fathoms, sheltered from the regular breezes. A rocky ledge with irregular soundings from four and a half to ten fathoms, runs out for eight miles to the north-eastward of the Vivorillas, with one spot near the west extreme, and another on the north-east side having as little as three and a quarter fathoms. The channel between the Seal Cays and the Vivorillas is deep with twenty fathoms. There is also a clear channel between the Caxones and the Carataska shoals, and between the Carataska shoals and the Seal Cays.

About seventeen miles to the south-eastward of the Seal Cays, are the Cocorocuma Cays and reef. The cays have some low bushes, and a few cocoa-nut trees upon them. A dangerous reef runs out for five miles N.N.W. from the cays, it is less than half a mile wide, and steep to all round. A small detached breaker lies about half a mile to the westward of the north end of the reef.

The Pigeon Cays are about four miles to the eastward of the Cocorocumas. The western Pigeon Cay is very small, three feet above water, with a reef running out half a mile to the northward. The east Pigeon Cays are two in number, the same size as the western, they are two and three-quarters miles E.S.E. of the western Cay; the channel that divides them is clear, with from twelve to twenty fathoms.

S.b.W. twelve miles from the Cocorocuma Cays is a dangerous detached reef, which we have called Allens reef. It is one mile and a half in length from N.N.W. to S.S.E., and has deep water fourteen to sixteen fathoms all round it.

The Cocorocuma Channel, between Allens reef and the Cocorocuma Cays, is quite clear with from sixteen to eighteen fathoms sandy bottom.

About S.b.E. ½ E. fourteen miles from Allens reef, is another dangerous reef very similar in character. It is three miles and three-quarters in extent from north to south, and has from ten to fourteen fathoms round it. We have called it Barnetts reef.

Allens Channel is between Barnetts reef and Allens reef, it is perfectly clear, with fourteen fathoms all the way between the reefs.

Barnetts reef is twenty-two miles E.b.N. from Cape False, and seventeen miles and a half N.N.E. ½ E. from Cape Gracias a Dios. The space between is free from danger, and the soundings very regular. When beating round Cape False at night, it would be prudent not to stand out into more than ten fathoms.

To the E.S.E. of Barnetts reef, about sixteen miles distant, there is a cluster of detached cays with some extensive and dangerous reefs to the northward. The reef to the northwest-ward called Half-moon reef, is steep to on the northern edge; it is more than six miles in length from east to west, and is very dangerous. The northern edge is on the same parallel as the middle of Barnetts reef. Another dangerous reef runs to the south-eastward for four miles, nearly connected with the Half-moon reef at the south-east extreme. It is called the Savanna reef. Barnetts Channel, between Half-moon reef and Barnetts reef, has from ten to fifteen fathoms across, with a bottom of sand and shells.

The cays to the southward of Half-moon reef are very small, standing about three feet above the water. There is a single cocoa-nut tree on the one furthest to the southward, (Cay Bobel.)

Logwood Cay, and Burns Cay, on the southern part of the reef are only small rocks without vegetation. Half-moon Cay is composed of sand; it is four miles N.N.W. of Cay Bobel, and has a reef running off it to the northward for about one mile, under which there is anchorage sheltered from the eastward.

There is a small detached reef called Cockburns reef, about nine miles to the southward of Cay Bobel, with deep water round it, and a small shoal with three fathoms and a half, called Halls shoal, two miles and a half S.E.b.S. of the Cay.

To the south-west of the Savanna reef there are three cays detached from each other, they are about four feet high, with low bushes upon two of them. There are likewise some small dry reefs, about five miles to the southward of the S.E. extreme of the reef. This neighbourhood is too full of dangers to be ventured into by any but small fishing vessels.

To the eastward of the Savanna reef about six miles distant, is the north-west elbow of the Alargate Alla reef,—(keep at a distance.) This is the most dangerous reef on the bank, it is upwards of ten miles in extent from north to south. The eastern side forms the segment of a circle convexing to the eastward, quite steep to, with from twelve to fifteen fathoms close to the dry reef. There is a cay off the centre of the west side about five feet high, detached from the reef at the distance of about two miles; it bears nearly south from the north-west extreme of the reef. The Alargate Alla is in the same meridian as Cay Gorda, upwards of forty miles to the southward. Its southern extreme is in the same parallel as Cape Gracias a Dios, about forty-six miles to the eastward. It is forty-two miles within the eastern edge of the Great Musquito Bank, with from eleven to sixteen fathoms for the entire distance.

All these outlying dangers, and the bank as far as to the meridian of 82° west longitude, were surveyed by Lieutenant Barnett in the Jackdaw schooner.

The channels to the north-east of Cape Gracias a Dios are not recommended to be used, except in cases of emergency, as none of the Cays are sufficiently conspicuous for a land-fall, and there is not any certain indication of your proximity to the reefs even by the lead.

Vessels bound to Cape Gracias from the eastward, should strike the Great Bank about the meridian of the mouth of the Carataska Lagoon, and beat up in shore round Cape False; and on leaving Cape Gracias for the eastward, they should pass to the westward of the Vivorillas.

On the north-east part of the Great Musquito Bank, there is a detached knoll about seven miles in diameter, with from fifteen to twenty-five fathoms. It is separated from the main bank by a channel eight miles wide, with from one hundred and twenty to one hundred and fifty fathoms fine sand. We have called it Thunders Knoll, there is deep water soundings for some miles round it, from one hundred to two hundred fathoms. This knoll is about seventy miles N.E.b.E. from Cay Gorda.

The north-east elbow of the Great Musquito Bank, to the southward of Thunders Knoll, has from twelve to twenty fathoms. We did not quite join Lieutenant Barnett's work to the westward, but found a bight of irregular deep soundings between thirty and one hundred and twenty fathoms running up to the northward, round the south-west corner of this elbow, that may possibly detach it from the main bank. This will be determined by Lieutenant Barnett who is completing the survey.

To the southward of the north-east elbow, the edge of the great bank (in the parallel of Cape Gracias a Dios,) falls in about thirty miles to the westward, and takes a direction nearly S.S.W. in an undulating line, gradually nearing the shore. Abreast of Cape Gracias it is ninety miles off shore, and to the southward of San Juan de Nicaragua it approaches to within seven miles.

Between the parallels of 13° and 15° north latitude, (including the

Musquito Cays to the south-eastward of Cape Gracias,) the bank has yet to be surveyed.

The coast to the southward of the harbour at Cape Gracias trends S.b.W. for eleven miles, and then S.S.E. for twenty-five miles to Governors Point, which is a long rounding turn in the land, beyond which the coast trends about S.S.W., and continues in that direction for fifty-five miles to the mouth of the river Wounta, or Tongula, from whence it trends nearly south all the way to Parattee Point,* to the southward of the Pearl Cays, a distance of sixty-seven miles. It is a low coast the whole distance, with a sandy beach.

The first opening to the southward of the Cape, is into the Guana Sound Lagoon, about eight miles from the harbour, the next is Sandy Cay river, about twenty miles further to the southward. There is a small river called Dockwara, two miles to the northward of Governors Point, and another fifteen miles to the southward, called Honesons river; these are all small rivers with a bar of sand across the mouth, mostly impassable even for canoes.

There is a remarkable part of the coast about five miles and a half from Honesons river, called Bragmans Bluff, with steep cliffs of red earth, about thirty-five feet high, reaching nearly three miles along the coast; it cannot easily be mistaken, as there is not any thing else along the coast, that at all resembles it.

The river Wava twelve miles and a half S.S.W. from Bragmans Bluff is the largest on the coast to the northward of the Rio Grande; the water was discoloured for a considerable way from the mouth. The river Wounta, or Tongula, already mentioned, is twenty-three miles to the southward of the Wava. There are two more small rivers, the Apulca and the Walpasiksa, aad some small creeks, between the Wounta and the Rio Grande, a distance of about thirty-six miles.

The coast from Cape Gracias to within about ten miles of the Rio Grande, was merely traced during a run to the southward in the Blossom, and will require to be more closely examined. We had from four to six fathoms, within less than two miles of the coast, the whole way, except when off the Wounta river, where we had as little as three fathoms and a half when two miles and a half off shore. The Fox shoals are said to be off the mouth of this river.

The first cays off the coast to the southward of the Musquito Group, are the Men-of-War Cays; they are situated about ten miles north-east of the mouth of the Rio Grande, and nearly the same distance off the nearest part of the shore, they are very small with trees and bushes upon them. A small low rock of shingle stands upwards of a mile to the north-east of the cays, steep to all round, with nine and ten fathoms, and a detached breaker about one mile and a half to the south-westward.

About eight miles to the southward of the Men-of-War Cays, are two small cays, called the Great Tyro and the Seal Cays; and about the same distance south of the Tyro Cay are the two King Cays.

A barren rock about eight feet high, lies four miles and a half N.E. by N. from the Great Tyro Cay, and another of equal size lies three

* Called Point Loro in the Columbian Navigator.

miles W.S.W. of the larger King Cay. There are several rocky patches to the westward of these clusters of small cays, but by keeping within five miles of the coast, there is a good channel to the southward along shore, until nearly down to the Pearl Cays, where it becomes intricate and dangerous.

Twelve miles south of the King Cays is Askill Cay, the most northern of the Pearl Cay Group, which extends in small clusters down to Parattee Point; there is deep water between the cays, but there are too many rocks and shoals to allow of safe navigation amongst them, unless with good local knowledge.

There are some dangerous reefs and shoals to the eastward of the Pearl Cays reaching about twelve miles off the main land; the most eastern is the reef off Seal Cay, which is about thirteen miles E.N.E. from Parattee Point.

The Pearl Cays, and the cays to the northward are all thickly wooded, with high trees on most of them. The trees on the Pearl Cays are from fifty to one hundred and twenty feet high, and those on the small cays to the northward from thirty to seventy feet.

A dangerous reef extends off Parattee Point for two miles.

All the cays to the southward of the Men-of-war Cays, with the bank and coast line down to the parallel of 11° 40′ N., were surveyed by Lieut. Barnett in the Lark schooner.

At Parattee Point the coast falls in suddenly to the westward for about eight miles to the mouth of the Pearl Cay Lagoon: the shore between is thickly wooded, the tops of the trees are from one hundred to one hundred and forty feet high. It is very shallow for upwards of two miles from the shore.

The Pearl Cay Lagoon is very extensive, reaching for twenty miles to the northward of the mouth: there is a bar formed about a mile outside the mouth to the south-eastward with only eight feet on it at low water, it breaks, except in very fine weather. Inside the bar there is from two to four fathoms and a half for about three miles up, beyond which it is very shallow. There is a rise and fall of about two feet at the springs. High water at 1h. 45m.

About four miles within the bar to the south-westward there is an English settlement of some extent, and another about four miles more to the westward. The settlers came originally from Jamaica, and from the English factory at Black river; they are now spread along this part of the coast at Pearl Cay, and at Blewfields Lagoons, and also at the Corn Islands, and at St. Andrews, and Old Providence.

At the Lagoons and at the Corn Islands they consider themselves as living within the Musquito territory, and do not acknowledge any connexion with the State of Columbia; whereas at St. Andrews and Old Providence they acknowledge themselves to belong to the State of Columbia, and have a commandant and a few soldiers from Carthagena. The commandant resides at St. Andrews.

Those within the Musquito territory are, in fact, living as an independant race, subject only to such laws as they have established amongst themselves.

The land projecting out to the eastward from the Pearl Cay Lagoon forms this part of the coast into a deep bay, and affords shelter during northerly winds in four or five fathoms, muddy bottom.

There is a remarkable round hill, called Cookra Hill, nine miles and a half S.W. $\frac{3}{4}$ W. from the bar of Pearl Cay Lagoon, it is five hundred and eighty-seven feet high, and stands about five miles inland. It is visible from the Great Corn Island from whence it bears nearly west. There is a similar hill fourteen miles to the southward, at the back of Blewfields Lagoon, four hundred and eighty-three feet high. These are the only hills along the coast between Cape Gracias and Blewfields, and are very useful as landmarks when bound to the Lagoons.

Blewfields Lagoon is about seven leagues south of the Pearl Cay Lagoon: the coast between is nearly straight, with a sandy beach. There is a small green mound forming a projecting point to the southward, called False Blewfields, about nine miles and a half from the bar of the Pearl Cay Lagoon.

The Cayman Rock lies off this part of the coast two miles from the shore; and six miles N. $\frac{1}{2}$ E. from Blewfields Bluff. It is a barren rock about twenty-five feet high, with six and seven fathoms close to it all round, and a clear channel with from three to six fathoms between it and the shore.

At the entrance to Blewfields Lagoon, on the north side, there is a remarkable bluff headland, forming a small peninsula projecting to the south-westward, joined to the main by a low narrow neck of land. This bluff is higher than any other part of the coast, and makes like an island in almost every direction: it is about one hundred and twenty feet high, and is bold to, with low steep cliffs of red clay. There is a bar formed across the entrance into the lagoon off the south-west part of the bluff, with about thirteen feet at low water: there is a rise of two feet at the springs: high water at 1h. 50m. It is observed that the tide rises six inches higher in the night than in the day. During fresh north-east winds, the bar breaks heavily; it also varies in depth, being affected by the freshes out of the river. The flood tide only runs for three hours. There is a rapid current out of the lagoon after heavy rains.

When going in keep over on the starboard hand, close along the west side of the bluff. The best anchorage is just to the northward of the N.W. point of the bluff, in four or five fathoms muddy bottom. Above the anchorage it gets very shallow. There is a boat channel to the northward into the Blewfields River, and another to the westward, up to a large settlement situated under a hill, about three miles and a half west from the anchorage.

There are at this settlement between three and four hundred inhabitants. The same race as those who are settled at the Pearl Cay Lagoon, and at the islands to the eastward.

To anchor outside Blewfields in a vessel that cannot cross the bar, bring the south-west point of the bluff to bear W.N.W., and stand on till the right extreme of the bluff bears N.N.W., you will then be in five fathoms muddy bottom. This anchorage is exposed to the regular breezes, but there is plenty of room to weigh, and a clear bank to windward. There is a dangerous coral patch with as little as eight feet water, about two miles and a half S.b.E. from the south part of the bluff, and another similar patch with as little as six feet, about two miles and a half further to the southward, in the same line of bearing from the bluff, Outside of these rocky patches the bank is quite clear.

A Cruize in the Levant.—*From Acre to Sidon and Beyrout.*

[Extract from the Remarks of H.M.S. Alfred, Capt. R. Maunsell—W. H. Hall, Master,—June 1832.]

On the evening of the 29th of June we sailed from Kaiffa, and stood across the bay towards Cape Bianco, had seven and a half to thirteen and eleven fathoms when we tacked. Had light winds during the night from the north-west; soundings from sixteen to nineteen fathoms, but it deepened as we stood to the northward rather suddenly, as we could not get bottom with sixty fathoms of line out, and were at the time about three leagues off the land.

On the 30th passed Tyre in the morning, and at noon we were abreast of Sidon, which we hauled in for: found we had been set to northward during the night by the current. Anchored about three miles to the northward of the town in fourteen fathoms, sandy bottom, one mile and a quarter off shore. The wind being light from south-west, and current setting to the northward, obliged us to come to there. The regular anchorage for large ships being further to the southward, and abreast of the town.

Saida or Sidon, 1st and 2nd July.—The anchorage of Sidon is very much exposed to all winds that have westing, and there is generally a swell which makes riding bad outside for large ships, and the inner anchorage close to the northward of the town, which is sheltered by a long rocky island, with small rocks above water about it, is only fit for small men-of-war, and merchant vessels. The deepest water, and best place to anchor is just within the outer or northern point of the island; in from five and a half to six and a half fathoms, with the high square tower of the lower castle east; moor short, as there is not much room; the merchant vessels sometimes make one cable fast to the island.

The anchorage for large ships is abreast of the town, but we were obliged to come to three miles to the northward of it, in fourteen fathoms, as stated before; and had the following bearings—town of Sidon S. ¼ W., and the entrance of the southern point S.W.b.S.

Sounded from the ship towards the shore, and had thirteen to three fathoms. You may stand rather close to the island, and the town also. We had eight and ten fathoms from half a mile to a mile off, and in sounding around the northern point of the island in the boat, had five and six fathoms a cable and a half off.

Sidon is built on a hill close to the sea, and its situation may easily be known from the remarkable high land immediately behind it, which makes like two hummocks. When they bear E.S.E. ½ E. you are abreast of the town. To the northward of Sidon which you will soon make out by steering in, on that course, you will see the small islands and rocks, with the merchant vessels at anchor inside of them. There is a long wood to the northward of the town, and the country all about Sidon is beautifully cultivated.

The regular landing place for boats is to the southward of the castle,

but if there is much surf on, it will be better to land to the northward of it, where you get into smooth water by rounding a small reef. Fresh meat and vegetables can be procured at a reasonable price. Good water can be had from a river about three miles to the northward of the town, if there is not much surf on.

No boats could approach the mouth of the river, or any part of the beach, on account of the surf, caused by a westerly swell, which lasted during our stay, although we had nothing but light breezes, which was off the land at night, and generally from the westward during the day, and moderate. Latitude 33° 34′ N., longitude 35° 26′ E.

From Sidon to Tripoli, calling off Beyrout, 3d July.—At six A.M. we sailed from Sidon for Beyrout, the course being N.b.E. $\frac{3}{4}$ E. distance to the Cape about eighteen miles. We soon saw the latter which makes like an island; it is of moderate height, and may be always known from the quantity of sand both on, and to the southward of it.

The land between Sidon and Beyrout is high and mountainous. At 10h. 30m. we rounded the cape giving it a berth of about a mile, and hauled up for the town, off which we hove to, distant from it about one mile and a half. At 11h. 30m. sailed again from Beyrout without anchoring on account of the plague being there: steered along shore N.N.E. for Cape Madonna, distant nearly thirty miles, which we soon made, being high and remarkable from having some white patches on both sides, which may be seen a long way off from the northward or southward, there is a village to the left of it.

Between Beyrout and Cape Madonna, the land is high and mountainous, with several villages and monasteries.

From abreast of the cape we saw Tripoli, which is situated a little inland. Shaped our course N.N.E. for the islands off it, distant nearly four leagues. We soon made out the spires of the village off which the anchorage is, and then the islands, which are a long way off from the land, and must be carefully avoided at night. Passed the outermost one, giving it a wide berth of rather more than a mile, and then hauled up under the lee of them for the anchorage.

We did not get soundings until close in, the first cast eleven fathoms, the second ten, and then nine and three-quarters, in which depth we anchored, rather hard bottom, about half a mile outside two Egyptian men-of-war brigs.

The Levant.

We must now make room for our arrears of Despatches from the Levant, our limited space unfortunately precluding the possibility of our keeping pace with the daily journals.

Princess Charlotte, D'journie Bay, near Beyrout, October 1st, 1840.

Sir.—I beg leave to enclose, for their lordships' information, copies of four letters which I have received from Captain Collier, of her Majesty's ship Castor, whom I had directed, in conformity with my instructions, to embarrass the Egyptian forces in possession of the towns on the coast from Beyrout to Jaffa, and encourage and support the faithful subjects of the Sultan, detailing his

proceedings at Caiffa, Jaffa, and Tsour, of which last we still hold possession; in the execution of which duties that zealous officer, and all concerned in these active operations, as particularized in his letters, have shown themselves worthy of their lordships' favourable attention.

It is pleasing to observe, that all this service has been performed without loss of a man; but I regret Lieutenant Macdougall and Mr. Gill, carpenter of the Pique, were severely wounded, by accident, though both are now doing well.

I am, &c.,

ROBERT STOPFORD, *Admiral.*

To R. More O'Ferrall, Esq.

H.M.S. Castor, off Acre, Sept. 20th, 1840.

SIR.—In compliance with your orders of the 14th instant, I have the honor to acquaint you that the Castor, with the Pique and Ottoman frigate Dewan, appeared off Caiffa on the evening of the 16th; and the following morning, about 6 o'clock, a boat was despatched with an officer of the Turkish frigate, accompanied by Lieutenant Shadwell in one from this ship, and both bearing flags of truce, to demand the surrender of the place to the Sublime Porte; the flag was refused, and peremptorily warned off; the ships took up their berths, Lieutenant Wellesley of this ship ably assisting in placing the Ottoman frigate, and a fire was opened on the batteries, the Castor commencing, which were manned and ready to receive us, with 500 men in the town; but such was the effect of the first few broadsides, that the troops abandoned their posts, deserted the town, leaving their arms, knapsacks, &c., in all directions. The Ottoman flag was soon planted on the ramparts by Lieutenant Patey, accompanied by Lieutenant Winthrop, Messrs. Connolly and Boyd, mates, Mr. Hare, midshipman, and Mr. Cole second-master, who were immediately joined by Lieut. Curry and Macdougall, and a party of seamen and marines from the Pique, and the whole party proceeded to spike and destroy, by knocking off the trunnions and burning the carriages of the eight guns on the ramparts; a quantity of arms, stores, and munitions of war were found in the magazine, all of which were either brought off or destroyed, amongst which were two 13-inch mortars, which were put on board the Ottoman frigate.

The following morning, the 13th, the Castor shifted her berth, to cover the entrance to the Acre-gate, at the distance of one mile from which 500 troops were distinctly seen drawn up. Towards the middle of the day, an officer and a few men had planted themselves in a castle, mounting five guns, in the rear of and commanding the town, but the well-directed fire of the Pique and Castor soon wounded the officer and dislodged the men, some of the latter seeking safety on board this ship. Considering the destruction of this castle and its guns most desirable, I ordered the marines of the two frigates, with their respective officers, Lieutenants Varlo, Moubray, and Hamley, Lieutenant Wellesley, Messrs. Cockburn and Gibbard, mates, Mr. Foley, midshipman, and Mr. Ramage, clerk, with a few seamen, and all under the command of Lieut. Patey, senior lieutenant of this ship on that service, which was gallantly and completely executed, by the guns being thrown out, and the walls shook to their foundation, and this in full view of 500 of the Egyptian army.

I am pleased to observe, that this service has been performed without the loss of a man, although I am grieved to say that Lieutenant Macdougall, of the Pique, has been severely wounded, by the discharge of one of the enemy's guns, whilst in the act of spiking it, and also Mr. Gill, carpenter of that ship, by the same explosion.

To my much-valued friend Captain Boxer, who has been unceasing in his exertions, both on shore and on board, in the execution of this service, I am much indebted for the success of the enterprise. The destruction of the defences of the town has been most complete; some prisoners have been taken, and many deserters have come over to us. I have great pleasure in apprising

you that the zealous co-operation of the Ottoman frigate Dewan, on the service, has been highly meritorious to all on board, and calls for my warmest approbation.

To Mr. Young, the cousul at Palestine, I am much indebted for the assistance he has rendered me by his knowledge of the people and localities of the country.

Captain Boxer speaks in the highest terms of the conduct of Lieutenant Galway, who commanded the boats of the Pique both days, Messrs. Morris and Heath, mates, Messrs. Hawkins, Kealey, and Bridge, midshipmen; and Mr. Partridge, volunteer, first class.

I consider it my duty to recommend to your notice, Lieutenant Patey, senior lieutenant of this ship, as well as Mr. Cockburn, the senior mate, employed on shore, for their officer-like, cool, and steady conduct; indeed, too much praise cannot be given to every officer and man employed on this service, for the manner in which they have conducted themselves through three days of arduous and fatiguing duty.

I have, &c.,

EDWARD COLLIER, *Captain.*

To Admiral Sir R. Stopford, &c.

H.M.S. Castor, off Caiffa, Sept. 29th, 1840.

SIR.—In addition to my letter of this day's date, I have to inform you that the Turkish frigate detained a brig of the Pasha's, and by her I send these letters.

I have put on board her our consulate agents of Acre and Caiffa, with their families, and others, who by remaining here after the cannonading we have given Caiffa, would not be safe. The inhabitants are certainly favourably disposed to the Sultan; but the Emirs and Sheiks will not expose themselves without the appearances of a protecting force.

I am, &c.,

EDWARD COLLIER, *Captain.*

To Admiral Sir R. Stopford, &c.

H.M.S. Castor, Tsour, Sept. 26th, 1840.

SIR.—I have the honor to inform you, that her Majesty's ship Castor, under my command, accompanied by the Pique, anchored here on Thursday evening last, the 24th. We succeeded in driving out the Egyptian troops, said to amount to 500 men, that evening; the following morning we took possession of the town, which we still hold.

A further detail of my proceedings shall be forwarded by the next opportunity. I cannot, however, resist the occasion of informing you that all have nobly performed their duty.

A great quantity of grain has been found in the Government stores, as well as ammunition; part of the former and all the latter have been brought off.

I have the honour, &c.,

EDWARD COLLIER, *Captain.*

To Admiral Sir R. Stopford, &c.

H.M.S. Castor, Tsour, Sept. 27th, 1840.

SIR.—I have the honor to acquaint you, that agreeably with the arrangements I had made, the Castor appeared off Jaffa on the 22nd; the following day, calling again off Caiffa, whence proceeding in the further execution of your orders of the 14th instant, the Pique and Ottoman frigate Dewan in company, I beg to acquaint you that her Majesty's two frigates took up their positions off this town about noon on the 24th instant, (having ordered the Ottoman frigate to take a position in the South Bay, which the badness of the anchorage pre-

vented her doing, and from calms and light winds she did not rejoin until yesterday,) the town was summoned by an officer, bearing a flag of truce, to surrender to the Sultan, to which the civil authorities readily consented; but as 500 Egyptian troops still kept possession, I directed the inhabitants to be warned to quit the town immediately, as it was my intention to dislodge the soldiers, and having given them sufficient time to do so, a fire was opened by both ships, at the distance of about 500 yards, which soon accomplished the object. At daylight the following morning, Captain Boxer, having gallantly landed and reconnoitered, to prevent surprise, the marines of the two frigates, with a few small-arm men, under the command of Lieutenant Patey, senior lieutenant of this ship, landed and took possession of the town, which we still hold. Two guns were found mounted on the works, the trunnions of which were knocked off. Also a vast quantity of grain in the public stores, and some munitions of war. A brig has been loaded with part of the former, and the latter brought off.

The arduous duty of levelling large sandbanks, ten feet high, thrown up by the enemy, to cover the approach to the town from the fire of ships, loading grain, and in gunboats by day and night, all in the full view of 1,500 of the enemy's troops, who are two miles off, will, I hope, sanction my recommending to your notice every individual officer and man of the two ships, for each one has nobly performed his part in like manner as at Caiffa.

To my gallant friend Captain Boxer, I am deeply indebted for the assistance he has afforded me on every occasion in the execution of this service; but particularly for his vigilance each day in preventing surprise on the troops landing. He speaks in the highest terms of Lieutenant Curry, senior lieutenant of the Pique, who had charge of the party employed levelling the approach to the town.

It affords me much pleasure to say we have not lost a man on this service, and I am much gratified in being able to state that none of the inhabitants have been hurt.

I feel myself called upon to recommend especially to your notice Lieutenant Patey, of this ship, as an officer of great merit, who has highly distinguished himself on this service, as well as at Caiffa.

I have, &c.,
EDWARD COLLIER, *Captain.*

To Admiral Sir R. Stopford, &c.

Princess Charlotte, D'journie Bay, October 3rd, 1840.

SIR.—In forwarding you the enclosed copy of a letter from Commodore Napier, I have great satisfaction in drawing their lordships' attention to the rapidity and gallantry displayed by the Turkish troops, under his Excellency Selim Pasha's personal command, and of General Jochmus, the Chief of the Staff, and Lieutenant Bradley, who were at the head of the skirmishers in this brave attack, which was crowned with complete success, between 400 and 500 out of 700 of the enemy, posted on a most advantageous position, on the crest of the mountains, having been killed, wounded, and taken prisoners, and the others dispersed, most of whom have since come over, as deserters, to the standard of the Sultan.

I have, &c.,
ROBERT STOPFORD, *Admiral.*

To R. More O'Ferrall, Esq.

Head-Quarters, Army of Lebanon, D'journie, September 25th, 1840.

SIR—In obedience to your directions to drive the enemy from the position they had been fortifying for some days on the left of Keibson (Dog River,) I

marched out of our cantonments at daylight, of the 24th, with four Turkish battalions under his Excellency Selim Pasha, the 2nd battalion of Royal Marines, under Captain Fegan, and an Austrian rocket detachment under Alfiere di Vasielli Baldisirette.

The ground on either side of Keibson is very high and precipitous, and offers great advantages to the defending, and very considerable danger to the attacking party; to secure against this, a Turkish battalion descended unseen near the entrance of the gorge through which Dog River runs, and gained the heights on the other side; the marines and Austrian rocket detachment, covered by this battalion, crossed higher up, crowned the heights, and advanced on the enemy's position about two leagues off; the Turkish battalion remained in position to cover our right, in the event of Soliman Pasha advancing from Beyrout to disturb our operations.

Three Turkish battalions, who descended into the gorge before the marines, pushed their way up the river, and advanced in a mountain path to turn the enemy's left; this being perceived, they abandoned their intrenchments and occupied a new position on the heights of Ornochojeuen, about a league to the right of their intrenchment.

The Turks arrived with great rapidity and gallantry. General Jochmus, the chief of the staff, accompanied by my aide-de-camp, Lieutenant Bradley, of the Powerful, put himself at the head of the skirmishers, and showed a noble example, which was as nobly followed by his Excellency Selim Pasha, at the head of a battalion; the country people also joined and were not the last advancing. The enemy's skirmishers were speedily driven in, and their main body, consisting of about 700 men, fired two volleys and retired in great confusion, the Turks following them up with so much vigour, that between 400 and 500 prisoners were made, and the rest dispersed.

The enemy moving from their first position on which the marines advanced, threw them out, and the work was done entirely by the Turks; the marines were, however, most anxious to try their strength, and I hope an opportunity may soon offer.

This operation opened the whole district of Kata, and the mountaineers who had been driven from their homes, flocked down in great numbers, and were immediately armed.

I have great reason to be satisfied with the conduct of his Excellency Selim Pasha, and with General Jochmus, who fearlessly exposed himself in front, accompanied by my young friend Lieutenant Bradley.

We have had a Turkish officer wounded, and two men killed.

Enclosed is a list of Turkish officers who particularly distinguished themselves, and who I trust will meet with some mark of favour from the Sultan.

I have, &c.,

CHARLES NAPIER, *Commodore.*

To Admiral Sir R. Stopford.

A List of Turkish Officers, &c., Deserving of Promotion.

Mahmed Aga, 1st Major of the battalion of Cyprus, to be Chef de Bataillon commanding it.

Mustafa Coloya, Sergeant 4th battalion, second regiment, first company, to be Ensign.

Achmed Monashola, private 4th battalion, 2d Regiment, first company, to be corporal.

CHARLES NAPIER, *Commodore.*

To Admiral Sir R. Stopford.

Princess Charlotte, D'journie Bay, Oct. 4, 1840.

SIR.—Considering the possession of Sidon as of great importance to the success of the Sultan's cause, by giving confidence to his faithful subjects, and very

much embarrassing the measures of Ibrahim Pasha, I directed Commodore Napier to proceed thither, and, after summoning the place, to make the attack. I have great satisfaction in communicating, for their Lordships' information, the most complete success of this enterprise, as detailed in the Commodore's letter herewith sent.

Our loss, as their Lordships will perceive by the return herewith transmitted, has been comparatively small, but still much to be regretted; the only officer killed was Lieutenant Hockin, of the Royal Marines, a young man of great promise, who had only arrived in the Stromboli, with a detachment of Royal Marines, in time to take part in the enterprise.

The place is still in our possession, and its capture seems to have been an unexpected blow to Ibrahim Pasha, and has much paralyzed his measures.

It is a very pleasing duty to me to call their Lordships' attention to the excellent and judicious manner in which the plan of the attack upon Sidon was laid by Commodore Napier, and the spirit and gallantry with which it was accomplished.

The ships employed upon this expedition were as follow:—Thunderer, Capt. M. F. F. Berkeley; Guerriere, Austrian frigate, his Royal Highness Prince Frederick of Austria; Gorgon, Capt. Henderson; Cyclops, Capt. Austin; Wasp, Commander Mansel; Hydra, Commander Robinson; Stromboli, Commander Williams; Gul Sefide, Turkish corvette.

The Commodore expresses himself much obliged to Commander Mansel for his intelligent and active services. Amongst several individual acts of bravery, it appears from every account that the most prominent one belongs to Mr. Cummings, mate of the Cyclops.

After the Commodore left Sidon (Capt. Berkeley has been left for its protection, with as many other vessels as can be spared, including the Guerriere Austrian frigate), much skill and judgment have been displayed in putting the place into a good state of defence against an attack by Ibrahim Pasha, who is in that neighbourhood; and Capt. Berkeley mentions the ready assistance he at all times receives from his Royal Highness Prince Charles Frederick of Austria.

I have, &c.

ROBERT STOPFORD, *Admiral.*

To R. More O'Ferrall, Esq.

Head-Quarters, Army of Lebanon, D'journie, September 29th, 1840.

SIR.—I embarked at sunset of the 26th inst. in obedience to your directions, with a Turkish battalion under Commandant of Battalion, Homchild Aga; and the first battalion of Royal Marines under Capt. Morison, of the Princess Charlotte, in the two steam-ships Gorgon and Cyclops, and proceeded off Sidon: at daylight the Thunderer and Austrian frigate Guerriere, Gul Sefide, Turkish corvette, and Wasp joined, as also the Stromboli, from England, with two hundred and eighty-four marines, under Capt. Whylack. The wind being light, the Cyclops towed the Thunderer to her position, previously fixed by Captain Berkeley; the Stromboli towed up the Guerriere, and the Turkish corvette, who were placed by Capt. Berkeley abreast of the town. The Wasp and Stromboli anchored more to the southward, to flank it. The Gorgon, and Cyclops, and Hydra, who joined from Tyre, with Walker Bey, took up their positions both northward, close to the castle. The enclosed summons was sent to the Governor, which he refused to comply with.

The Turkish battalion was now put into the boats, and rendezvoused round the Cyclops; a few shot and shell were fired from the Gorgon at the castle and barracks, and shortly after the whole of the squadron opened their broadsides to drive the troops from the houses and the intrenchments they had thrown up to prevent a landing; in half an hour the firing ceased, and Capt. Austin landed

the Turkish battalion in the castle, which is joined to the town by a narrow causeway; this was effected with some loss: as the enemy still stuck to their intrenchments, the fire of the ships was again opened, and the houses in front battered down.

Commander Mansel, of the Wasp, was directed to seize the first favourable opportunity of throwing the detachment of marines, brought out by the Stromboli, and the Austrian marines, into the castle, abreast of him, which he did with great gallantry and judgment.

Lieut. Hockin, of the Marines, and several men, were killed and wounded. They were directed to work their way to the upper castle, which commanded the town. The 1st battalion of marines were now landed by Capt. Henderson, of the Gorgon, on the beach to the northward of the town, when they formed and advanced to the walls. All being now ready, the Turkish battalion, headed by Walker Bey and Capt. Austin, pushed along the causeway, and entered the town.

I put myself at the head of the British marines, and broke into the barracks. Capt. Henderson and another party lodged themselves in a house above the barracks; this done, I marched the battalion along the wall to the upper gate, broke it open, and seized the castle. All seemed now quiet below, and, leaving a guard in the castle, we descended through several streets arched over, where occasional skirmishing took place with detached parties of Egyptian troops, who were easily driven, and finally took refuge in a vaulted barrack, where we found upwards of 1,000 men lying ready for a sortie, should occasion offer, or to lay down their arms, should they be discovered—the latter was their fate.

I congratulate you, Sir, on the success of this enterprise; the garrison consisted of nearly 3,000 men, and not one escaped: our force was under 1,000.

Our loss, which I enclose, has been trifling; one marine officer and three seamen killed; two mates, a boatswain, and thirty seamen wounded.

I have much reason to be satisfied with the conduct of the captains, officers, and men under my orders; all showed the greatest zeal; English, Austrians, and Turks, vied with other.

Commander Mansel is an old officer, and well deserving of promotion. Messrs. M'Guire and Price, old mates, are both severely wounded, and behaved most gallantly, as did Mr. Cummings, mate of the Cyclops, whose conduct was seen by Capt. Berkeley, who wrote him a strong letter on the occasion, and I trust their Lordships will promote them.

My aide-de-camp, Lieut. Bradley, was also forward on all occasions.

The Archduke Frederick placed his ship well, and kept up an excellent fire; Walker Bey, Turkish Rear-admiral, who was there by accident, was the first who advanced along the causeway.

My thanks are due to the Hon. Capt. Berkeley, who assisted me on all occasions, as well as Captains Henderson and Austin, Commanders Robinson and Williams, and to the Captain of the Turkish corvette, to Captain Morison, who commanded the marine battalion, and to Capt. Whylack, who commanded the marine detachment.

I am much also indebted to Captain Lane, of the Prussian service, who is attached to my staff.

I have, &c.,

CHARLES NAPIER, *Commodore.*

To Admiral Sir R. Stopford.

P.S. Since writing my public letter on the capture of Sidon, it has come to my knowledge that there was a complete race between Mr. James Hunt, midshipman of the Stromboli, and Signor Dominica Chinca, midshipman of the Austrian frigate Guerriere, who should first place the colours in the part of the town they were landed at.

H.M. Steam-ship, Gorgon, Sept. 28, 1840.

SIR.—In the name of the five united Powers, Turkey, England, Austria, Russia, and Prussia, I demand that you immediately declare for the Sultan your master. Pardon for the past offences will be granted, and the arrears of pay to the troops by Mehemet Ali will be paid by the Sultan.

CHARLES NAPIER, *Commodore.*

To the Governor of Sidon.

Return of officers and men killed and wounded in the taking of Sidon, September 26th, 1840.

Bellerophon.—Killed, one seaman. Wounded, one seaman severely; one seaman slightly.

Revenge.—Killed, one seaman. Wounded, Mr. W. K. O. Price, mate, one royal marine.

Thunderer.—Wounded, one royal marine, severely; three seamen, two royal marines, slightly.

Powerful.—Wounded, one royal marine slightly.

Princess Charlotte.—Wounded, one royal marine severely; two royal marines slightly.

Stromboli.—Killed, Lieut. C. T. Hockin, royal marines. Wounded, three royal marines severely; one royal marine slightly.

Cyclops.—Mr. John Thompson, boatswain, slightly.

Wasp.—Mr. R. M'Guire, mate, severely. Total wounded 20. Three killed.

Austrian Frigate Guerriere.—Killed, one seaman. Wounded, one seamen severely.

Turkish troops.—Wounded, two officers and ten soldiers.

Princess Charlotte, D'journie Bay, October 5th, 1840.

SIR.—I transmit herewith, to be laid before their lordships, the copy of a letter which I have received from Captain Houston Stewart, of her Majesty's ship Benbow, with the enclosures therein referred to, detailing his proceedings at Ruad and Tortess, the attack upon which last was not attended with the results fairly anticipated, on account of a reinforcement of Egyptian troops thrown in early the same morning. I lament the casualties attending it, but am gratified with Captain Stewart's representation of the gallant conduct of the captains, officers, and men engaged, most particularly Lieutenants Maitland and Charlewood, who had a prominent part in the attack.

I have, &c.,

ROBERT STOPFORD, *Admiral.*

To R. More O'Ferrall, Esq.

H.M.S. Benbow, off Ruad, Sept. 26th, 1840.

SIR.—I have the honour to acquaint you, that the Benbow, Carysfort, and Zebra, anchored here on Sunday last, the 20th inst.

We found the island without troops or arms of any kind, but an immense population just arrived from Tripoli, Tortosa, and other parts of the coast, at present menaced with military operations.

About 200 cavalry and two field-pieces were encamped at the watering-place on the main land, immediately opposite to the island, and I was informed that two squadrons, (each of 200 men, with two field-pieces,) were stationed about nine miles distant to the north and south, with orders to prevent any persons taking water, and to obstruct all communication between the inhabitants of the country and the ships. We also learned that the whole of these troops de-

pended upon the stores in Tortosa, for subsistence, and that these stores were very considerable, consisting of grain, rice, &c. The island of Ruad is very small, and dependent on tanks and cisterns for water, which are generally quite sufficient for its ordinary population, said to amount to 1,500; but in consequence of the influx of refugees, there cannot be less than 5,000 souls upon it just now, and therefore an extra supply of water became necessary; but the cavalry prevented any boats from the island approaching the watering-place. We therefore, at daylight next morning, dislodged them, by throwing a few shot and shells, and the ships were moved nearer the watering-place, and, every precaution being taken, all her Majesty's ships were completed with water; and ever since the place (being under our guns,) has been quite free to the people of Ruad to water.

My attention was now anxiously turned towards Tortosa; all information concurred in representing its great importance to the enemy's troops, and all agreed in declaring, that could we destroy the provisions, the troops must shift their quarters, and thus leave the communication with the mountains (whose inhabitants were most anxious for arms) comparatively open. We are also informed that the chief storehouses were situated close to the sea, that a breach might be made in the outer wall, and immediate access obtained to them.

I therefore directed some large bags of powder, with bores and fuzes, to be prepared, and ordered the Carysfort and Zebra to anchor close off it, which they did within five hundred yards. Four successive deserters from the enemy's cavalry (each arriving on different days) stated that there were no soldiers quartered in Tortosa, but a party was regularly sent down every night to bring away sufficient provisions for their different detachments, and the last deserter, who left Tortosa so late as the night of the 24th, stated confidently that there was not then a soldier in it—that even had any come in after his departure, they could only be dismounted cavalry, with short carbines,—that a sort of council of war had been held two days before, when it was resolved, that, as they had no infantry, cavalry alone could not protect it, and that they must get camels, &c., to remove the stores from it as speedily as possible: and he offered, if we would give him an axe, to land with a single boat's crew, and break the corn store door open; and the three other deserters likewise offered to go.

This determined me to make an attempt either to take the town, or at least destroy the stores, and the following plan of operations was decided upon:—The boats to rendezvous on board the Carysfort, and she and the Zebra to cannonade the walls, and especially a large built up archway in the centre, until sufficiently opened for entrance, Lieut. Charlewood being prepared with the necessary means for blowing up stores, buildings, &c., and accompanied by Mr. Turner, gunner of this ship, with eight steady men as pioneers to land in the cutter, and be immediately followed by the portion of marines at present on board the Benbow, together with those of the Zebra; and twenty seamen of the Benbow, under Lieutenants Maitland, R.N., and Harrison, R.M.; and that all the boats (after the disembarkation) under the command of Lieut. Stevens, of the Carysfort, should lay off, prepared to cover the landing party with their guns and small arms, and to re-embark them.

The space from the margin of the sea to the breach does not exceed sixteen yards. We could perceive only a few loopholes commanding that spot, and I concluded that even should a fire be opened from them, the advance from the boats would be too rapid to admit of its being effective, and that, being once within the breach, our men would easily make good their way.

Accordingly, yesterday, at 15 minutes past 1 P.M., the Carysfort and Zebra commenced an admirable and well-directed fire, and very soon opened the archway, and showed us a large clear space within, and the boats shoved off. The beach under the town appeared so smooth and deep, and so similar to all the other parts where we had landed, that a doubt of the heavy boats being able to reach it never presented itself until they went in, when a ledge of rocks or ancient building was found to extend itself across at some distance from the

shore, with such deep water inside that no man could land and keep his ammunition dry; only the light boats, of which there were but two, could pass over it. Thus the marines (in the launch, barge, and two pinnaces,) were unable to land; had they done so, I feel confident that we should have completely succeeded in destroying the magazines of provisions, and have driven the enemy out of the vaults, and even from the town, although not without loss, as subsequent intelligence has reached me that 200 infantry (from the northward,) and 100 dismounted cavalry, had entered the town the same morning, three hours before daylight. Lieutenant Charlewood being in the cutters with the pioneers' powder, and the three deserters as guides, landed at once, and proceeded towards the beach, and had nearly reached it before a shot was fired; but the moment the large boats touched the rocks, they became exposed to a destructive fire from every minute loop and crevice, and even from the holes which our cannon-shot had just made. Lieutenant Maitland had succeeded in getting about fourteen of his men, with himself, landed by another turn of the same cutter, and my only reason for not instantly recalling the boats when the fire opened was, that I could not know what these officers were doing inside, and I entertained great hopes that they might be able to find out and blow up the provision stores, and thus effect our principal object. The guides who had landed fled back to the boats at the commencement of the firing, but they are now all on board, and free from any suspicion of treachery. Lieutenant Charlewood, proceeding with his pioneers, broke open several stores, and at length reached one filled with rice, and another with corn, when he immediately ran back to inform Lieut. Maitland, and get more hands forward. Unfortunately, during his momentary absence, his men had hewn open another door, when to their surprise, they found it entered upon a place filled with infantry soldiers, and a struggle ensued. Two soldiers were killed by the three pioneers, but having nothing but axes, they were obliged to give way, but Mr. Charlewood's return checked the enemy's advance, and they never followed him.

Becoming anxious at the delay, and seeing Lieut. Maitland still in the breach, I hastened in my gig, and, hailing that officer, I learned from him there was no longer any prospect of success, his ammunition being expended, and much of that of the marines wet (from the attempt to get out), and I immediately ordered all to retire, and succeeded in getting every man off. Lieut. Charlewood even bringing his exploding apparatus away.

It is now my duty to allude to a more grateful theme—the merits of the officers and men employed. Where *all* did their duty, it is a difficult and somewhat delicate task to particularize, but I should be very unjust did I not bear my cordial testimony to the very gallant conduct of Lieutenants Maitland and Charlewood: the latter officer was the first man on shore, and the very last off, and his quiet, determined resolution, was the theme of praise with every person.

I annex a list of the boats employed, with the names of the officers commanding them, together with a return of casualties in each boat. The first cutter, being a light boat, was extremely serviceable, and much and constantly exposed. Mr. J. C. Dalyrmple Hay, midshipman, and his crew, deserve every credit for their very spirited conduct.

The jollyboat of the Carysfort (the only other light boat,) commanded by Mr. W. H. Stewart, midshipman, was also very useful, and Lieut. Maitland speaks in favourable terms of that young officer's proceeedings.

To Captain Martin and Commander James Stopford my grateful thanks are justly due; all that was done was in perfect concord with them, and from both of these officers I derived the most cordial support and assistance. The precision of the fire from their ships over the boats and men during the attack was quite astonishing, and by rendering the aim of the enemy unsteady, must have saved many lives.

I have, &c.,

HOUSTON STEWART, *Captain.*

To Admiral Sir R. Stopford.

List of Boats employed and Officers commanding them.

BENBOW'S.

Launch Mr. W. K. Hall, mate; Lieut. Harrison, RM.—Killed, three marines and one seaman. Wounded, five marines, (one since dead), two seamen.

Barge—Mr. G. F. Day, mate.—Wounded, four seamen.

First Gig.—Hon. A. Cochrane, volunteer 1st class.

Pinnace.—Mr. A. G. West, midshipman.—Wounded, one seaman.

First Cutter.—Mr. J. C. D. Hay, midshipman.—Killed, one seaman. Wounded, two seamen.

Landing Party.—Mr. F. H. Stanfell, mate; Mr. J. F. Ross, midshipman. Wounded, one seaman.

CARYSFORT'S.

Pinnace.—Lieut. Stephens; Hon. — Douglas, midshipman.

Barge.—Mr. Genneys, mate; Mr. Loney, second master.

Jollyboat.—Mr. W. Houston Stewart, midshipman.

ZEBRA'S.

Pinnace.—Mr. J. Simpson, mate.—Wounded, three marines.

Return of Officers and Men killed and wounded, belonging to Her Majesty's ships and vessels, in an attack by the boats of those ships on the town of Tortosa, the 25th of September, 1840.

Benbow.—Killed, two seamen, three royal marines. Wounded, nine seamen, three royal marines, severely, one seaman, one royal marine slightly.

Zebra.—Wounded, two seamen, one royal marine slightly.

Total—Killed 5; wounded 17.

Gales in the Levant.

The despatches from Acre in our last number conclude the account of the above proceedings in the Levant. That those ships remaining on the exposed coast of Syria, should be likely to feel the effects of winter gales was anticipated, and accordingly we find the Bellerophon, Capt. C. J. Austin, Pique, Capt. Boxer, and Zebra, Com. J. J. Stopford, among the number. It will be seen by the annexed letter from an officer of the former ship, with which we have been obligingly favoured, that the skill and intrepidity of British seamen with the blessing of Providence has saved her from destruction, and her crew from death; while those of the latter have no less Providentially escaped under the cool and seamanlike conduct of her captain. It is at extremities such as these when British seamen, commanded by skilful officers shew what they are made of.

Bellerophon, Marmorice Bay, Dec. 11th, 1840.

I must briefly relate to you the chief circumstances connected with our recent providential escape from shipwreck, on the coast of Syria, not far from Latakia Point. During the nights of the 2nd instant, the Bellerophon, then lying off Beyrout, and the Princess Charlotte, Benbow, Gorgon, Hydra, and Prometheus, two Austrian frigates, and a corvette, a French corvette and brig, and sundry small merchant vessels at anchor in St. Georges Bay, a spot about three miles and a half from the town, deeper in the bight of the bay of Beyrout, where the holding ground was supposed to be better, and the position more sheltered by the land than the anchorage where we unfortunately were, a gale came on from the southward and westward in fierce gusts of long continuance, with

heavy rain, and much lightning. The weather became gradually worse as the night waned, and at 5 A.M. half an hour before daylight, the ship shouldered her two anchors, and carried them into deep water, when it became obvious that our only chance of saving her was to get her to sea, although that was a consideration associated with some "chilling doubts and misgivings," for we were fast drifting down the shore near the place of our old encampment at D'journie, and the extreme point northward of the bay extended along some distance before our lee beam. Nothing daunted, however, the cables were slipt, and such sail as the ship would stagger under was set without delay, and the noble craft behaving admirably as she always does under any circumstances, weathered the danger, and gave us reason to feel thankful for present deliverance, although leaving wide room for apprehension as to our ultimate preservation, for none could be insensible to the dangers which encompassed us, situated as we were with a long line of coast, much of it unknown to us, under our lee.

The fury of the gale seemed to grow with the day, and before the sun had passed the meridian, it was blowing a perfect hurricane, the sea running unusually high for the locality. The ship was then as a matter of necessity, much pressed, having a close reefed main-topsail and foresail set, which, had there been plenty of sea-room would unquestionably have been furled. These however were rent into ribbons, and our lower masts were complaining, when it was deemed expedient to throw overboard five of the lee upper deck guns, the ship then heeling 40°, the forecastle netting fairly buried in the water, and the lee quarter boat also immersed in the deep. How the masts stood this was a matter of wonder to many who witnessed the scene. But the most tragical part of the tale remains to be told.

After the loss of the guns just named, the ship certainly did not give such heavy lee lurches as before, but the fall of our masts was still dreaded, and the weather still wore a most threatening aspect, the gusts being the fiercest that I ever experienced at sea, and of much longer continuance. No sail but a fore-topsail and mizen were set, our leeway was then calculated at four points and our way through the water between three and four knots. This augured ill, and it was apparent to every reflecting mind, that if the wind did not shift more to the southward, (it was then about W.S.W.) and enable us to lay up better on the larboard tack, or come round from some other quarter to eastward of north, to afford us an opportunity of extricating ourselves, that nothing but a miracle could save us from being wrecked during the night on some part of the coast of Syria north of Tripoli. The sun set, and the gale remained unbroken, —8 P.M. arrived, no change,—at 9h. 30m. P.M. our destruction seemed inevitable. Ship not laying better than north,—9h. 40m. P.M. off to N.N.E., when the ship's company were made acquainted with their danger, and preparations made for cutting away masts and letting go sheet and spare anchors, in the event of our not weathering the point which we imagined to be Latakia, then close under our lee; at 9h. 50m. off to N.E. The immediate necessity for wearing the ship and exercising a last effort to clear the land to southward on the other tack became apparent;—up helm,—beautifully she answered it, and ere she was to the wind again, it had suddenly veered in a heavy squall to N.N.W. observing which, the dawning of hope began to diffuse itself among us, and by midnight the gale had broken, and we were doing well.

This you may readily fancy was a very narrow escape! Seeing the land close under your lee in a heavy gale! It only remains for me to add, that a prayer of thanksgiving was offered up to that Omniscient one in our worship of him (the following Sunday) whose interposition was alone able to rescue us from our helpless state of peril and perplexity. On the following morning, we stood to the southward towards Beyrout; on the day succeeding fell in with the flag-ship off that place. From her we learnt that our ships at Beyrout were safe, but that eight merchant vessels had been wrecked, some foundering at their anchors. The Austrian corvette was nearly lost, having drifted into the rollers

a long way from beach, and lost her foremast, she has since been towed to Marmorice Bay, by the Gorgon. Upon our arrival here, we found much to our surprise, the Commodore with all the Alexandrian squadron, except the Carysfort. It appears that they were a respectable distance off that coast in the gale, lying to under a main-trysail without the bonnet. The Commodore declares that he never saw it blow so hard before. The ships felt it a good deal. The sad tidings of the loss of the Zebra, at Acre, have just reached the Admiral; she parted from her anchors and went on shore a complete wreck, all saved but three men.

The Pique also at Acre was forced to cut away her masts, and has since gone to Malta, under jury masts. The Benbow and one Austrian frigate (admiral's), and Hazard, the latter, I believe, from Sidon, where she must have been comparatively snug, have just arrived.

I expect to hear of manifold disasters at sea caused by this gale of unexampled severity. We expect to go to Malta shortly for a thorough refit and caulking preparatory to going home to be paid off. We require two anchors and cables, a topsail yard, and many sails, and stores of all kinds. The oakum has been fairly worked out of her seams in many places. She is a lovely ship though, and I verily believe no liner could have made better weather of it.

Another letter from the same officer dated 14th of December, says

Now for scene No. 2—ship on shore, which we will call Zebra. Since I penned the hasty account of the loss of this little brig, I have heard more particulars regarding her, which may prove interesting to you if received in the absence of other information. It appears that during the day of the gale, in the course of the afternoon she was riding with four anchors down. About 4 or 5 PM. she parted two of her cables and drove. The masts were then cut away, and guns thrown overboard,—she still drove; when the captain and officers feeling assured that she must be inevitably lost on the beach in the night, if not run on shore in some other position before sunset, which was then at hand; it was determined to slip and steer away for the shoal water inside the rocks on the south-east side of the town. Their purpose was effected, and there she lay pretty snug all night, all hands on board save three who took away the gig before the brig had slipped her cables, and were lost. On the following morning the foreyard, the longest spar they had was got over the gunwale, and upon it the men walked to the shore in excellent order. It is said the brig might be got off, but the operation would be too expensive to render its execution desirable. Her stern post is much shaken.

From the Malta Times.—The Pique reached this harbour on the 22nd instant, having sailed under jury masts from the coast of Syria, having occupied eighteen days on her passage.

This frigate had been left in command of the bay of Acre for the winter, in company with the steamer Vesuvius, and had taken up an anchorage off Caiffa, as being the most sheltered part of the bay.

On the 2nd instant it began to blow violent squalls, which lasted with occasional intervals for two days. On the 4th the wind shifted round the point of Carmel, which had hitherto sheltered the anchorage, and coming down with unbroken violence upon the shipping, drove two brigs from their anchors, and compelled the Vesuvius to put to sea, after losing both her anchors; of the two brigs, one her Majesty's ship Zebra, had cut away her masts early in the day, and made a signal of distress. To render her any assistance while the wind and sea raged

so furiously was of course impracticable. The steamer made a fruitless attempt with this view, and herself hardly succeeded in getting clear of the coast and taking the open sea. The brig still held on by her remaining anchors, the seas breaking over her dismasted hull with resistless violence, and at last drove her again from her anchors. She drifted shorewards, and after striking repeatedly on the sandy bottom, was thrown by the violence of the sea high up on the beach, and her crew were thus providentially rescued from their apparently hopeless situation. Three men alone were drowned in an attempt to save their own lives by lowering a boat, which was swamped alongside. No other lives were lost.

The frigate had meanwhile imitated the example of her consort, and cut away her masts, after breaking from two iron and hempen cables. She still held on by her last hempen cable, which was so much chafed by the wrecks of her masts, as to destroy any hopes of its holding the ship much longer under the violence of the tempest. Most providentially at this crisis the wind went down almost instantaneously, and she rode safe for the night. Early next day the steamer re-appeared, and having towed the frigate 140 miles out to sea, left her a mere hulk, to make the best of her way to Malta. She had lost all of her masts and bowsprit, six guns, and her four best anchors; her rudder was seriously damaged, and she was found leaky. In this condition she was jury-rigged, and being favoured by temperate weather, she had reached Malta, eighteen days from the day on which she was towed out.

Another letter from an officer of the Ganges shews that our ships have been keeping the sea tolerably well in the Levant:—

We got into a severe gale in which we knocked about not a little, even heeling 40°, and taking in water over our lee gangway, being light and wanting 300 tons of water. The commodore then decided on bringing us here, (Marmorice Bay,) when we arrived we had been just ten weeks without anchoring.

We muster in full here thirteen line-of-battle ships; Asia and Hastings remain at Malta; the Gorgon, Dido, and Hazard are with us. The main-topmast of the former was struck by lightning the other night. Since our arrival we have had almost uninterrupted rainy weather. This is the most romantic spot in these seas. Fancy a circular harbour, diameter about three miles, indented by several interesting little creeks, and surrounded by high bold well-wooded land having a great diversity of aspect and variety of colouring.

The following extract from the *Malta Times*, throws some further light on these particulars.—When the gale commenced on the 1st inst the following ships were lying in St. Georges bay, Beyrout:—Princess Charlotte and Benbow, of the line, and the Gorgon, Hydra, Stromboli, and Prometheus (since arrived at Malta) steamers; the Bellerophon was off the town of Beyrout; two Austrian frigates (one with the flag of Admiral Bandeira, and the other commanded by his Royal Highness the Archduke Frederick.) The gale commenced on the afternoon of the 1st, and towards noon of the 2nd it became worse. Early on that morning the Bellerophon put to sea, and stood to the northward. She lost two boats, all her sails, and threw her quarter-deck guns overboard. The Powerful was struck on the larboard bow,

which started her fore chains, and it was only by the quick evolution of wearing that her fore-mast was saved. A heavy sea took the Austrian corvette's fore-mast clean by the board. Eleven merchant vessels (names not reported,) went on shore, and a fine brig lost her masts and filled at her anchors; a number of lives must have been lost. The following are the particulars of the providential escape of the Bellerophon from total loss, and shows what courage and discipline can effect under the most difficult and trying circumstances:—

The evening of the 1st of December was quite fine, with little wind, but it freshened up during the night to a gale. At half-past 5 in the morning one anchor came home in an awful squall of rain and wind; a second anchor was let go, but this was of no avail, the ship kept driving broadside on, never looking to the anchors. The only chance now was to slip and make sail; this was done very quickly, leaving the anchors in deep water. We got sail on the ship, carrying a heavy press, to keep her off shore; both the pinnace and barge were swamped while the ship drove. By nine in the morning it blew a hurricane; nothing could resist it,—the sea was running high, and no sign of a lull. The fore and main courses were blown clean away, also the foretopmast staysail, not leaving a dozen yards of canvas in the boltrope. The fore-topsail split soon after noon, and the main-topsail went to ribbons, only saving the part reefed, the main-trysail. The ship was now labouring heavily, and the mainmast complaining. We threw overboard the upper-deck guns and shot, which appeared to ease the ship much; all hands employed shifting sails, as well as the tempest would permit, which, during the storm of rain, hail, and wind, was no easy job. Towards sunset it became evident that nothing less than a miracle could save us. The ship kept dragging along shore—a shore presenting no place of refuge. We bent the cable to the spare anchor, and made every preparation for cutting away our masts, as by 9 o'clock at night every one was satisfied that nothing more could be done, and that our safety was utterly hopeless.

At this time, during a most pelting storm of rain, the Captain sent for the ship's company aft, and told them the position of the ship,—saying, "that much depended on their coolness and conduct; and to the attention paid to orders given." The men went up, with a will to bend fore and main topsails—just at this time the wind lulled for a moment—and the ship broke off two points, now heading right on shore, not more than five miles off it, some say only three. As our sole chance, we put the helm up and the Bellerophon wore where perhaps very few ships would; indeed, this fine ship behaved nobly through the whole way. After coming to on the starboard tack, the wind came aft two points, the ship coming up S.S.W., and sometimes a point higher. We made all sail we could carry,—rain and sleet still continuing, but wind a little abated. By four o'clock in the morning we were some ten miles off the land, and heading south-west. The watch was called, all hands had been on deck twenty-four hours. Upon the whole it was an extraordinary and very narrow escape from most imminent peril. Had the ship grounded, she would have gone to pieces, and all hands must have perished. Nothing was to be found dry on board, the ship leaking from the tremendous straining during the gale, and the previous heavy fire during the campaign on the coast. The coolness of our chief, and the steadiness of the men, during this trying occasion, were beyond all praise. Thank God we are now all safe, refitting and setting to rights in Marmorice harbour.

We are informed that the behaviour of Capt. Austin of the Cyclops in storming and capturing the castle of Sidon alluded to in Commodore Napier's report, was most noble and gallant, and that by his exertions in turning the guns of the castle on the town, the success may be mainly ascribed. (See also p. 878 of our last volume.)

We are also informed that Mr. Hunt alluded to in the Commodore's despatches, as having vied with an Austrian midshipman, in being the first to plant the British colours at Sidon has disclaimed the honor attributed to him, and assigned it entirely to Lieut. Anderson of the Royal Marines.

The condition of her Majesty's ship Pique, in the bay of Acre, during the gale alluded to in the letter from the Bellerophon, and also the Malta Times, is described in the following interesting letter from an officer belonging to her. We understand that under her jury-masts she presented a picture, which was the admiration of all who saw her on her arrival at Malta.

H.M.S. Pique, Malta, Dec. 28th, 1840.

You will be surprised to receive a letter from me, dated Malta—but thank God we are safe here, after a very narrow escape from shipwreck. Our poor unfortunate Pique is smack smooth fore and aft,—not a mast or bowsprit standing, having been obliged to cut all away to save her from going ashore. But I will endeavour to relate all as it happened.

In my last, I mentioned we had shifted our anchorage over to Kaiffa, leaving Lieutenant Fellowes and forty of our men on shore at Acre. On the evening of the 1st of December it came on to blow fresh, but off the point, so there was no danger; but, about two in the morning, it veered round to north-west, and sent in a heavy sea. We then let go the second anchor,—at nine it came on most furiously from the west, sending in a most *tremendous* sea. We then got the lower yards and topmasts down, indeed everything we possibly could from aloft. About eleven the gale was fearful, and the sea such as I never before witnessed. At this time the Zebra brig made the signal of distress, by hoisting her flag union down,—but it was impossible to assist the poor creatures. About twelve she cut away her masts, and threw her guns overboard; at this time we parted our small bower and drove,—we let go the sheet and brought up again, shortly after our best bower went,—we then let go the spare anchor, and the gale continuing to increase, prepared to cut away our masts. At this period the Vesuvius having parted her cables, steamed out, scarcely making any headway, and the sea going clean over her.

We had now drifted down very near the shore, where there was a most awful surf breaking. About two P.M. our spare hemp cable parted:—we now hung by one solitary hemp cable, and the gale not abating in the least, orders were given to cut away the masts,—and such was the fury of the gale, that directly the main stays were cut, the main-mast fell over the quarter, carrying with it the mizen and foremast, and bowsprit, on which there was one poor fellow, but we fortunately saved him. We now lay a perfect wreck, the foremast having fallen over our hempen cable; we expected every minute to see it go, when nothing could have saved us. It was now blowing so hard I could not stand upon deck, so was obliged to kneel down and hold on. At three we saw the poor little brig part and drive into the surf,—I never expected to see her or a soul belonging to her again. We now hove six of our upper deck guns overboard, and prepared to throw the main deck ones over, in case the cable should part. Such was the fury of the gale, that we scarcely heard the crash of our masts going overboard, and those employed below did not know they were gone. At four P.M. it moderated a little, the sea still tremendous, and a dirty night set in,—a miserable prospect for us; however, we secured the cable as well as we could,—as you may suppose no one went to bed, and a wretched night we passed. It appeared to us daylight would never come, when it did arrive it discovered to us the brig almost high and dry on the beach, with her flag up the right way as a signal that all was well; she only lost three men, who

attempted to get on shore in one of her boats. It appears that the surf drove her over the first bank into smooth water, which bank I am sure *we* should never have got over.

The weather now cleared up, and the sea went down, and we turned all hands to clearing the wreck. About noon the Vesuvius hove in sight to our great joy, as we began to fear she was gone. She anchored alongside of us, and we got temporary jury-masts up, but the worst part of it was, that our mizen-mast in falling had injured our rudder head, so that we were obliged to steer by the rudder chains all the way to Malta. The next day the Vesuvius took us in tow 140 miles, and then left us not in the most agreeable situation;—1000 miles from port, no masts, one anchor, and an injured rudder: however, all went to work with good will, and in two days were tolerably comfortable, going six or seven knots, and arrived here in eighteen days, after all not a bad passage. Providence kindly favored us, for next day it blew a gale. Our poor boatswain (Mr. Thomas Scott,) was the only man sacrificed, he, poor fellow, received a severe blow in the back, and died the following day,—a great loss to us.

Marmorice Bay.

Our present number is accompanied by a plan of this bay, which which although it does not equal the more finished survey just completed by Lieut. Graves, commanding the Beacon surveying vessel in the Mediterranean, is highly creditable to the memory of its author, the late Capt. Edmonds of the Navy. It was made at a period in our Naval History of the greatest interest, and the place itself is remarkable as having been the rendezvous of Lord's Keith's squadron previous to the famous battle of Alexandria, in 1801, in which Sir Ralph Abercrombie fell, and died on board Lord Keith's ship. Until that time it was entirely unknown to our ships, and on that occasion was the means of saving them from the effects of a gale on a lee shore.

Mr. W. H. Hall, Master of H.M.S. Alfred, whose valuable remarks on Sidon appear in our present number makes the following observations on the Bay of Marmorice, which as being the winter rendezvous of our Mediterranean squadron will be interesting at the present moment.

"Marmorice Bay is about three leagues in circumference, and may be considered one of the finest for a large fleet in the Mediterranean. The land all round like most parts of Asia Minor, is high and mountainous, and as the entrance is narrow, it is, in consequence, sheltered from all winds. There is deep water, from ten to nineteen fathoms, and good holding ground all over it.

"The entrance, or narrows, is not a mile in length, and in some parts very little more than a quarter of a mile across, which leaves but very little room for a large ship to work in. The Alfred turned in twice, and found the wind very baffling, which must be expected, as well as sudden squalls off such high land.

"Water may be procured here in abundance, likewise fine wood, and stuff for brooms.

"The town, which is small and miserable looking, is situated at the north side, or head of the bay. Poultry, vegetables, and beef may be procured, the latter not good."

Magnetic Equator.

The line of the Magnetic Equator has been hitherto ascertained by the Dipping Needle, which being possessed by few ships, renders observations upon the line very limited. Although less accurate, I conceive a tolerably near approximation to its site may be obtained by means of a soft iron bolt placed upright in the ship, which becoming magnetized by the earth's induction, would consequently denote the particular magnetic hemisphere the ship was in, by approximating one of its poles to the ship's compass, which would of course require to be frequently repeated during the day, when the magnetic power of the bolts' poles was found to be nearly extinct, reversing the bolt each time of trial, and assisting the magnetism by smart blows upon it with a hammer, while held in a perpendicular position. The medium point between which the change of poles took place would of course denote the site of the Magnetic Equator.

Any iron belaying pin might, in case of necessity, be used as a test, a speedy change of poles in all the iron of a ship taking place, after passing from one magnetic hemisphere to another, particularly if some of the cannon be fired in the interim. C.

West India Lighthouses.

Dear Sir.—I have now time to give you my ideas on the importance of a lighthouse on the east end of Barbados. This necessity was first agitated many years ago, but in 1835, Sir Charles Smith of the Engineers, and Sir George Cockburn, commanding on the West India station, agreed upon the spot on which to erect it.

The situation was well chosen, to embrace all the important objects in view; first as a land fall from Europe to a large portion of the West trade, including Columbia, and Venezuela; secondly for a very considerable trade from our North American possessions, and the United States, all of which call at the weathermost island first, to try the market before running to leeward, or call "to the order" of their consignee; and thirdly, for the benefit of the trade from British Guiana, which would probably all pass to windward of Barbados, if they could boldly run for a light to enable them to pass in the night time; for want of this they keep away, and at once run to leeward past St. Thomas, which bringing them so far to the westward obliges them also to pass to the westward of Bermuda, where these heavy laden ships are sure to encounter the worst weather; whereas, if they had passed to windward of Barbados, they could with ease have gone to the eastward of Bermuda; and it is a well known fact the heavy north-west winds from the coast of America, do not extend there in their fullest force, therefore a comparatively fine weather passage is secured. The currents too are very unaccountable, though generally setting *dead* on the Coblers rocks, from the eastward and from the southward; I have been set between forty and fifty to the northward in less than twenty-four hours. This will easily account for the loss since 1835 of sixteen

vessels whose names are known, other numerous pieces of wrecks of vessels names unknown, besides vessels that have grounded, and succeeded in getting off. Why then should Barbados the land-fall of the West Indies be left without that safeguard to navigation a good lighthouse? What is the expense? a mere nothing in comparison to its importance; the estimate given in by Sir Charles Smith for a good solid lighthouse on the plan of the Eddystone, to withstand hurricanes, is 5092*l.* 2*s.* 6*d.*, on a spot 117 feet above the level of the sea, and being 83 feet more in height. The annual expense of maintaining it is 231*l.* a trifling duty on shipping passing by, and on vessels coming into the bay (Carlisle) would be willingly submitted to by the shipowners. At Bermuda the preparations for a lighthouse on Gibbs Hill, are in a state of forwardness, and it probably will be completed before the expiration of 1841, by that talented expounder of hurricanes, Col. Reid, the governor.

At Jamaica also a sum of money has been voted, to place a light on Morant Point, which is also in rapid progress in England. Now, I conceive neither of these places require it half so much as Barbados.

I have said the "unaccountable currents," however I do account for them satisfactorily to my own mind. The amazing quantity of water discharged from those great rivers on the coast of Guiana finding its way into the ocean, meets an obstruction to its natural course on the surface by the trade winds, which constantly throwing fresh supplies of ocean water, succeed in forcing the river discharges under, to such a depth, as being no longer acted upon by the face of the winds, this water re-asserts its right of course, and continues on till obstructed again by the island of Barbados; then, it again rises to the surface, and separating into two bodies, occasions that northerly current setting round both the east and west ends, though by far the strongest round the east end and over the Cobler Rocks. The same effect is likewise produced at Tobago, during the heavy rains. I have been set nearly due north seventy miles in the twenty-four hours, *being once* in the run of it, for probably four or five miles further to the westward, the set of the rivers Orinoco, being rebutted by the island would go off at a rapid rate to the westward, and this I have actually witnessed in a calm with two vessels. In every thing regarding currents in the West Indies, I am quite convinced that the strength of the trade winds would afford a close approximation to the truth; also the dry and wet season to be considered, as well as the direction of the land that may form the opposing power to the course of river discharges.

I have wandered from the lights, and now will resume with my own plan of lighting all the islands in the West Indies. The great object to be obtained by this, is to facilitate steam navigation, now about to be carried into effect on a large scale, and this will be easily shown by explaining that the steam vessels touch at the different islands, at all hours of the night; when, whatever may be the weather, the vessels are obliged to come in close to the shore to receive their passengers, and much valuable property, having from two to three hours only to perform this service, as also to land and take in the mails. In dark nights it is frequently with the utmost difficulty that they can find the land-

ing places, therefore, I propose, that a triangular form of light be placed on a post, in the best situation to shew the anchorage, and act as a guide to the landing places. This form will be least likely to be mistaken for accidental lights. It must be remembered, the purpose for which these lights are proposed is not to make land-falls, or warn from distant dangers, but simply as above, to point out the harbours and landing places. The post may vary in height according to the situation in which it is erected, and the lights may be placed so as to serve as leading marks to approach by; that is, on certain bearings a wrong direction may be indicated, by darkening one light or opening out another. With Barbados, a light placed in Carlisle Bay is more particularly required, to enable vessels to anchor at night. It frequently happens in the strong trade winds, that vessels waiting for daylight, are drifted by the current to leeward, and are unable to work up again without standing to the northward, thereby losing two or three weeks. I enclose a rough sketch of the proposed plan, and the estimate on the other side.

Expense of erection.	£	s.	d.	Annual.	£	s.	d.
Spar . .	5	0	0	Two pints of cocoa-nut oil 4s. per gall. daily	18	5	0
Triangle . .	2	10	0				
Lamps . .	8	11	0	Tow and for cleaning	1	10	0
Ladder . .	1	10	0	Painting . .	1	10	0
Lightning Conductor	1	10	0	Casual expenses .	2	0	0
Iron work .	1	10	0				
Erecting it—labour .	2	10	0		£23	5	0
	£23	1	0				

Add to the above expense a shed, for trimming lamps and for the man attending to sleep in, because in the day time he may have other occupations which will reduce his wages.

I omitted to say in some of the islands, I would have the lights coloured, as frequently vessels mistake one island for another, making them at night, carelessly enough, but it does happen.

I shall shortly see the agent for Jamaica, and will then say exactly the sum they have voted, and what the progress they are making with their lighthouse. I remain, &c.,

W. J. Whish, *Commander, RN.*

23, *Welbeck Street*, 15*th Nov.* 1840.

Lighthouse for Morant Point, Jamaica.

A Meeting of the Commissioners of this Lighthouse took place in Spanish Town, Oct. 28th, 1840.

The clerk of the Commissioners read an extract from the Report of Mr. Alexander Gordon, the civil engineer in London, whereby it appeared that an Iron Tower would be the cheapest that could be chosen, and would cost 820*l.* sterling. The cost of lantern, lamps, reflectors, and apparatus will be about 1,450*l.*, and fixing the same in lighthouse 150*l.*, making in all 2,420*l.* sterling. The Commissioners agreed to report to the House; and to request that the Commissioners of Correspondence do communicate with the Island Agent, and request his assistance in carrying the intentions of the Legislature into effect.

Blake's Bow for Men-of-War.

The pages of a work dedicated to every scientific subject touching on nautical pursuits, cannot be considered to digress, when adverting to the improvements taking place in so important a part of our naval defence, as naval architecture; more particularly in its application to ships-of-war, by contributing to render the battery they carry, more effective under all circumstances, and without any increase of weight of metal, any addition to their crews, or any extra expense of material, labour, or time.

There has recently been brought under our notice, a plan of Mr. Blake's, the master-shipwright of Portsmouth Dock-yard, for giving increased effect to the fortified bows of ships-of-war of all classes. By an alteration in the bow above the water line, double the number of guns can be brought to bear parallel with the keel, right ahead, to what could hitherto have been practicable; and in addition to this (which is an important improvement,) some of the guns from one bow can be so trained as to fire across the stem to an object on the opposite bow, thus giving to a chasing ship the means of crippling the ship she is pursuing, which was never before possessed, and enabling a ship attacked during a calm by steam vessels right ahead, to get a powerful battery to bear on the steamer, and thus rendering the bow, which has always been considered the weakest part of a ship-of-war for attack or defence, comparatively strong.

The advantages of this plan are likely shortly to be tested by practice, as the only ship ever constructed with this improved bow, is the Vindictive, a 50-gun frigate now in dock at Portsmouth, preparing for commission. We cannot anticipate anything but ultimate success upon trial; and shall, therefore, hail with great satisfaction, after its having undergone the test successfully, its general adoption in ships-of-war of all classes.

Any thing adding to our maritime strength, backed by the approbation of old and experienced naval officers, must be considered an acquisition by the whole of the community, but to professional men peculiarly so, and all will be ready to contribute their meed of praise to the originator of a plan so perfectly novel.

Lang's Tube Scuttles.

During the long war, commencing in the year 1793, and ending in 1815, our sailors suffered much from want of light and air in all ships, more particularly in the smaller classes, on their lower decks, for where the crew were berthed in these, it was total darkness, unless lighted by candles; not only this, but it almost amounted to suffocation in hot climates from want of ventilation; and the same was the case on the orlop decks of line-of-battle ships, and even on their lower gun decks when the guns were housed, and the ports shut. Here the crew were much inconvenienced by the muzzles of the guns being secured to the clamp above, thus obstructing the light from the old square scuttles

which were placed in the ports. With a view to afford the accommodation so much needed, and to remedy the evil various methods were tried from time to time, without producing the desired effect.

About eighteen years ago, Mr. Lang, then assistant-surveyor of the Navy, invented a tube scuttle of a conical form, perfectly water tight, to be drawn in, or put out from the inside of the vessel when required for air, and always under all circumstances in the worst weather affording light. This was first fitted in a sloop-of-war on the West India station, as an experiment, and being found to answer the purpose, it was afterwards introduced in several ships and vessels of various descriptions, and in 1831, was placed in the Thunderer, of 84, guns, on her orlop deck, on the Vernon frigate's lower deck, Magicienne razee corvette, and other smaller vessels, by which such great benefit and comfort to the health of ship's companies have been obtained, that, we undertand, an order has been given directing that all ships of the line shall have them fitted on their orlop decks similar to the Thunderer. This ship, in consequence, of having these scuttles, and a more complete arrangement of the orlop deck, than is usually fitted, was enabled, in addition to her crew, without displacing a gun, to accommodate a regiment of soldiers, on the said orlop deck, and convey them to Gibraltar, when, on the contrary, the Revenge, 74 guns, was obliged to take out her lower deck guns, and leave them in England to enable her to effect a similar conveyance of troops, her orlop deck being like those of line-of-battle ships, without ventilation or light, encumbered with store rooms, &c., thus reducing the ship in her armament to that of a frigate, until her return to England, for her lower deck guns. In fact, the advantage that will now be gained by the general adoption of this system of ventilating in the British ships-of-war is incalculable, and these tube scuttles being placed between the lower deck ports of line-of-battle ships, will give the necessary light, and air, over the seamen's mess tables, when the lower deck guns are housed, and the ports closed. Thus the refreshing breeze is introduced between decks, instead of the former humid atmosphere.

Tube scuttles of the same description having been fitted in steamers, and small sailing vessels' sides; and ventilators, also invented by Mr. Lang, in addition on their decks, a current of air is produced when the hatchways are battened down in bad weather, by which, not only the sailors, but the engineers, and stokers have likewise shared in the advantages of this most useful invention.

Magnetism and Electricity.

The following account of an effect produced on a magnetized piece of iron, during the hurricane of September, 1838, at Nassau, was given me by a friend a short time since and will be found interesting to the scientific world.

A bar of iron about six inches long, and one-eighth inch square, having been given polarity by the magnet, was suspended by a piece of thread from a peg driven into the side of a wooden partition, which lying nearly north and south, allowed the bar to swing freely in the mag-

netic meridian. It had for many weeks retained its natural direction, until the hurricane had well established itself over the town, when it was observed by a servant to have changed its position so much, that the south pole previously lying two inches and a half from the partition, had now swerved to the south-westward to such a degree as to touch it, a deviation at least equal to four points, (viz. from south to south-west,) and which probably would have been much greater had it not met with this obstruction.

As no current of air or visible agent could be detected acting on the bar, we may reasonably conclude the electric state of the atmosphere was the principal cause.

The bar still retains its polarity, and was affected slightly a short time since on the approach of a hurricane, but the deviation was the contrary way, viz. the *south* pole swerving to the *south-east*.

G. B. LAWRANCE, *Mate*.

Her Majesty's Ship, Thunder.

REMARKS ON A WATER-SPOUT.

Copy of a Meteorological Journal, kept by J. Lees, esq. Chief Justice, Nassau, N.P., from the 9th to the 11th of August, 1839.

Day of month	Moon's age.	Thermometer. 7am	Max. day.	9pm	Min. night.	Barometer. 7 am	9 pm	Wind. 7 am	Noon.	9pm	Weather. 7am	Noon	9pm	Night	Rain in inches	Remarks.
9	1	83	85	82	79	29·98	30·06	N (m.	N. (m.	clm	cldy	cldy.	clr	clear		10th—Wind NW. at noon, changing to N. NW. and N., in the evening South. *
10	2	80	86	83	77	30·00	30·08	SSW (vl	vbl (vl	clm	clr	clear	clr	rain	0·07	
11	3	79	87	84	80	30·05	30·10	SSE (l	SSE (vl	S vl	cldy	cldy	cldy	rain	0·03	

* A water-spout in the harbour about 4 pm.

This phenomenon was observed crossing the harbour by Captain Barnett, who having carefully watched it for the purpose of detecting the decided movement of its gyrations, observed that they were in *accordance with the hands of a watch*.* As a proof of the fact on its coming in contact with a boat moored to the shore, it immediately turned her round agreeable to such revolutions.

His eye at the time being elevated about forty feet above the base of the water-spout, when it was not more than 100 or 150 fathoms from him, enabled him to distinguish immediately the action it produced on the water, and consequently its gyratory motion, an advantage gained over an observer viewing it from a boat or low elevation, who as (Col. Reid observes in his chapter on these phenomena,) "is unable to decide which way they turn round, on account of the spiral form in which they are said to revolve: for it is very difficult to pronounce which way a screw revolves when turning rapidly."

Centre of the harbour in latitude 25° 5′ north, longitude 77° 20′ west.

* We are informed that the same has been observed by Captain Hewett, while in command of her Majesty's ship Fairy, at the back of the Goodwin Sands.—ED.

On Lightning Conductors.

Dear Sir.—The abstract of the report of the Commission on shipwreck by lightning, which appeared in the Nautical Magazine for June and July last, rendered it quite unnecessary for me to adduce, and repeat the account of the numerous instances of damage by lightning to ships, which I purposed to collect in evidence against the unsoundness of the conclusion advanced by Mr. Sturgeon, referred to in former communications on this important subject. Observing that this was virtually done by the writer of the abstract, and considering that many of the instances had already appeared in the Nautical Magazine, I thought it advisable to defer any further communication, until I had leisure to comment on the one or two points urged in the way of further objection by Mr. Sturgeon, and which he appears to lay much stress on.

Mr. Sturgeon's oppposition to my plan, considered as an affair of science having nothing to rest on, I should not have thought it necessary to say anything further on the subject,—but my method of lightning conductors being now carrying out in many of her Majesty's ships, I feel it right, for the satisfaction of others, to show my readiness to meet and consider any exception taken to it.

One of the ill effects which Mr. Sturgeon in the face of all experience attributes to my lightning conductors is, their assumed electro-magnetic action, by which he says all the compasses and chronometers in the ship would, if the vessel were really struck by lightning, be rendered useless,—and being unwilling at the same time to lose any opportunity of detracting from the scientific character of those eminent men, whose opinions were deemed of importance in the late inquiry on this subject, he further observes:—that the omission of all notice of this assumed result in the report, is an "event in British science," which leaves me and "the scientific councillors in no very enviable position."

A very little consideration will suffice, to shew the fallacy of this pretended objection.

In the first place supposing the objection a valid one, it is equally applicable to every other form of lightning conductor in a ship as to mine. Since, it is evident, that whether a shock of lightning traverses a conductor on the mast or rigging, or otherwise copper rods in the direction of the rigging, or chains in the same or similar directions, the electro-magnetic action would be about the same in either case, the difference of distance from the compasses being not worth mentioning. Indeed, it is highly probable, that the chronometers and compasses may be so placed in respect of a conductor along the after rigging, and its continued portion over the side, as to be much nearer such a conductor than to the mast, and be more advantageously placed in respect of it for the exercise of electro-magnetic influence.

A point, however, far more vital to Mr. Sturgeon's assumption is this:—

Is there *a single instance* on record of lightning falling on a conductor any how attached to a ship, in which the compasses have been disturbed?

This is the question to be determined after all. Almost every tyro is acquainted with the fact, that needles placed transversely to small wires

carrying a heavy electrical charge will become magnetized; that Sir H. Davy *thought* "circular pieces of steel placed *directly across or around* lightning conductors for buildings, might become magnets." But what then? Does it necessarily follow that all the chronometers and compasses will be destroyed in a ship, whenever a discharge of lightning passes in the direction of the mast, or along conductors attached to them?

There is a large gap here to be filled up by experience.

Mr. Sturgeon however by a reasoning per saltum, leaps boldly across this, and says it does so follow, and in no very measured terms denounces every one as profoundly ignorant who happens to hold a different opinion. One fact, however, is worth a thousand theories. We will therefore come at once to this point.

We are in possession of between two and three hundred cases of damage by lightning in the Navy, and a vast many more in the Merchant Service.

Let us however take one hundred cases, all the facts of which are more especially known. In all these cases, heavy shocks of lightning have descended through the vessel, and have traversed the mast and hull, and metallic bodies attached to them, such as chain, topsail tyes, and sheets, copper pumps and pipes, metallic bolts, &c., and also continuous lines of metal, under various forms of lightning conductors.

1.—Now in these one hundred cases, we do not find any one instance of destructive electro-magnetic action on the compasses or chronometers, from discharges of lightning passing down lightning conductors, attached in various ways to the masts or rigging, although in some instances of sufficient force to fuse portions of such conductors.

2.—We do not find any one instance of this action, where heavy discharges have descended the masts or other metallic bodies connected with them, and passed *through the hull by metallic bolts to the sea.*

3.—We find only one instance in these one hundred cases in which the compasses and chronometers became damaged, and in this case, the electric discharge invaded the places in which these instruments were, demolished all the bulk heads and fittings of the cabins, and passed directly through them or near them in its course to the sea.

4.—There is no instance on record in which the compasses, &c. have been affected by lightning, except under circumstances similar to those just mentioned, viz. where the electrical discharge has fallen under an explosive form in the vicinity of the compasses, &c., scattering and demolishing everything about them.

If then, we have *no instance* on record of electro-magnetic action destructive to the chronometers and compasses of ships, in consequence of lightning having descended by the masts or metallic bodies attached to them, passing in a variety of cases through the hull into the sea, or only one in a hundred cases in which this effect has occurred at all, and then when *lightning conductors were not present*,* what reason

* Every one will immediately perceive in what sense I employ this expression, or the similar expression, "that it is only in the absence of continuous conductors we find such magnetic effects," *i. e.* the destructive effect on ships' compasses, &c. Mr. Sturgeon, however, with his usual perversion of the truth, employs it as a peg, on which to hang the following coarse verbiage, &c.

could exist for entertaining such an assumption. When Mr. Sturgeon shall have adduced some instances of the effect in question, any one accredited fact, I may then perhaps be led "to make known to the Admiralty that such is the case;" until this however be done, he must excuse me, if I shall not deem it necessary to trouble their lordships.

The following table, containing some remarkable instances in which discharges of lightning traversed lightning conductors, in ships of her Majesty's Navy, *without* producing any effect whatever on the compasses, is quite sufficient to shew the fallacy of Mr. Sturgeon's vaunted objection.

Ships Name	Guns	Place of Condctr.	Estimated distance in ft. from Com.	Chro.	Remarks.
Adventure	10	mainmast	20	20	Struck several times by electric discharges in the Mediterranean.
Warrior	74	do.	40	80	Lightning descended the conductor in streams.
Ætna	10	do.	20	30	Several violent explosions, conductor partly fused.
Plato	10	do.	20	30	Struck by a moderate discharge.
Winchester	50	do.	40	70	Lightning descended in streams.
Dublin	60	do.	40	80 to 90	Heavy shock,—conductor melted.
Waterwitch	10	do.	20	20	Moderate discharges.
Thunderer	90	do.	50	100	Dense shock of lightning.
Dryad	40	all masts	6	30	Severe discharges.
Druid	10	do.	6	30	Awful lightning and discharges.
Beagle	10	do.	5	20	Heavy stroke of lightning, which shook the ship.
Andromache	28	mainmast	30	55	Passing shock of lightning of a moderate kind.

"Permit me," he says, "to ask you a few questions on this subject. Do you wish me to understand that you, a Fellow of the Royal Society, are totally ignorant of Sir H. Davy's experiments, by which that philosopher first magnetized steel needles, by transmitting electric discharges from a battery of jars through a vicinal conducting wire? Do you wish me to understand that you, a Fellow of the Royal Society, with the pretensions of an electro-magnetist, never repeated those beautiful experiments? Do you wish me to understand that you, a Fellow of the Royal Society, who as an inventor of a marine lightning conductor, ought to be a profound electrician, and electro-magnetist, that you who are pretending to protect the British Navy, and our brave tars from the effects of lightning,—that you, on whose judgment such mighty interests are to be at stake, are entirely ignorant of the laws of electro-magnetism? If you are not entirely ignorant of the magnetic action of electric currents traversing good conductors, how dared you venture to say 'that it is only in the absence of continuous conductors we find such magnetic effects.' If you are not entirely ignorant of such magnetic action, how dared you venture to stain the pages of British science, to insult the dignity of the Royal Society, and above all to deceive the Lords Commissioners of the Admiralty, and the whole British Navy, by propagating such a palpable falsehood? Will you acknowledge that you are ignorant of the magnetic action of lightning whilst traversing good conductors, or will you have to submit to the degrading position of having *wilfully* concealed that most important fact, to guard against which, is one of the most essential considerations in the erection of marine lightning conductors?"

Now the charlatanism of this rare ebullition of Mr. Sturgeon's small mind, is "too definite to be easily mis-understood." If it is in fact as applicable to Dr. Wol-

The cases of the Druid, Beagle, and Dryad, fitted with my conductors, are conclusive on the point in question, and Mr. Sturgeon has no means of getting out of the difficulty except *by denying the facts;* this he accordingly does without any scruple, and says in plain terms, that the officers who witnessed these shocks of lightning were not judges of what they saw, notwithstanding they were well acquainted with the effects of lightning on ships.

Thus Lieutenant Sullivan informs us, he was in her Majesty's ship Thetis, when her foremast was *struck* in *pieces by lightning*, that he was the officer of the watch, and on deck, when the Beagle having my conductors *was struck by lightning*, that the shock was still more severe than he experienced in the Thetis, that the mast appeared enveloped in a blaze of fire, and the ship fairly shook under the stroke. Capt. Turner says he was on deck, and saw the lightning fall with a terrible crash, first on the foremast and then on the mizen-mast of the Dryad, at the time of a tornado on the Coast of Africa.

Captain Norcott says, at Rio Janeiro one night, there was awful lightning, which was conducted down the fore and main masts of the Druid,—it was visible, &c.

All this testimony, however, Mr. Sturgeon endeavours to get rid of by a well-known figure of speech, called nonsense. The phenomena he says, did not arise from a dense shock of lightning, but from an electrical wave produced by a near discharge. His ideas of this wavy discharge seem to be sufficiently vague and indeterminate. He says, it is produced by the expansive force of the discharge, and "this I ought to have known, that it would effect a gold-leaf electrometer, &c."

This is something quite new,—I was certainly not aware that a gold-leaf electrometer would be affected by expansion of the air before; if so, then every time a cannon is fired, the leaves of an electrometer at a short distance from it should diverge. The only effect of an electrical kind, which could be imagined during a discharge of lightning, is a sort of propagation of electrical action through contiguous particles of the air by induction, but which evidently does not arise in consequence of the expansive effect of the explosion.

"I even found," says Priestly, "that the explosion of a battery made *ever so near a brass rod*, did not so much as disturb its electric fluid, for when I had insulated the rod, and hung a pair of pith balls on the end opposite to that near which the explosion passed, I found the balls were not in the least moved."

This is quite conclusive of the fallacy of Mr. Sturgeon's wavy discharge, on the supposition of its being produced by the expansive force of an explosion, and directly contradicts his assertion, "that an electrical wave is produced by artificial discharges."*

It is certainly highly probable that a gold-leaf electrometer involved in an electrified atmosphere, would be affected by electrical changes in

laston who gave my plan his approval, and for whom Mr. Sturgeon professes to have a "great veneration," as to me it is certainly a very novel form of philosophical reasoning.

* It is quite clear that either Dr. Priestly or Mr. Sturgeon must be wrong, I feel quite assured it is not Dr. Priestly.

that atmosphere induced by discharges of lightning; but we cannot suppose the existence of a discharge under the form of a wave, bearing all the characters of a direct stroke of lightning.

How is it that the evidence of any naval officer is not called in question by Mr. Sturgeon, in any case except in these three cases relating to my conductors?

Plainly because these cases overturn all he has advanced on the subject.

His conclusion, sec. 207, that because the chronometers did not suffer from electro-magnetic action, therefore, the ship *could not* be struck by lightning, is clearly taking that for granted, which requires to be proved,—a sort of begging of the question of which the meanest reasoner would be ashamed;—he had only to push this fallacy a little further, and then he would just as clearly have shewn that in no case has any ship really been struck by lightning, in which the compasses and chronometers were not affected, notwithstanding that the masts had been shivered to the keelson, or conductors melted by the shock.*

What sort of philosophy is this?

The severe philosophical scrutiny which the late Dr. Wollaston bestowed on every question submitted for his consideration, would lead any one to infer that the probable electro-magnetic action of lightning conductors had not escaped him, more especially as Sir H. Davy in his account of the electro-magnetic action, actually gives it under the form of a letter, addressed to Dr. Wollaston himself; he states in this letter, that one of the experiments arose out of a conversation they had previously held together on the subject.

Now, it happens most unfortunately for Mr. Sturgeon that this occurred, at the very time my system began to be entertained by the Navy Board, and only a short time before, Dr. Wollaston wrote a letter to the Comptroller of the Navy, expressing his full approbation of it.

Mr. Sturgeon will therefore permit me to ask *him* a few questions on this subject, and which as a *reductio ad absurdum*, I will proceed to do after his own very refined style, and as nearly as possible in his own words above given. Does he wish us to understand that Dr. Wollaston, a Fellow of the Royal Society, was totally ignorant of Sir H. Davy's experiments, by which that philosopher first magnetized steel needles by the electric discharge? Does he wish us to understand that Dr.

* The presence of a continuous conductor is not essential to the electro-magnetic effect of an electrical discharge.

Davy found that needles became magnetic, when exposed to an electrical explosion passing through the air.

It would be quite impossible to analyze the many unwarrantable assumptions found in Mr. Sturgeon's various publications on this subject.

Thus he supposes that the complicated distribution of copper rods he has proposed as conductors, would neutralize each others action on the compasses, because the discharge would pass equally on both sides; but it is evident, that in no case would the compasses or chronometers be found placed in a spot perfectly neutral to all the surrounding forces, nor does it follow that the passing electricity would be equal on each side of it. The compasses and chronometers are placed a long way behind the mast and rigging, and frequently much nearer on one side of the ship than the other, besides, a compass needle might be right across, or in a transverse position to the rigging on one side, and not on the other, which would make all the difference.

Wollaston, a Fellow of the Royal Society, with the pretensions of an electro-magnetist, never repeated these beautiful experiments? Does he wish us to understand that Dr. Wollaston, a Fellow of the Royal Society, who as an investigator of a marine lightning conductor, ought to be a profound electrician and electro-magnetist, was entirely ignorant of the laws of electro-magnetism? If he was not ignorant of electro-magnetic action, how dared he to stain the pages of British science? insult the Royal Society, and above all deceive the Lords Commissioners of the Admiralty, and the whole British Navy, by telling the Comptroller of the Navy that "he saw no danger, or insecurity or liability to objection in Mr. Harris's method? That Mr. Harris appeared to be well acquainted with his subject, and to fairly estimate the powers of the element with which we have to contend."

Will, then, Mr. Sturgeon assert, that Dr. Wollaston was ignorant of electro-magnetic action, or will he put himself in the degrading position of a detractor, (an amiable character he has lately assumed in his remarks on one of the best of men, as well as one of the most powerful philosophers of the present day, Dr. Faraday,*) and tell his readers that Dr. Wollaston wilfully concealed a most important fact.—to guard against which, is one of the most essential considerations in the erection of marine lightning conductors?

Why Mr. Sturgeon should have made his attack on me a channel for the further publication of his scurrilous remarks on Faraday it would be difficult to say. His assertions that this celebrated philosopher had transplanted his (Mr. Sturgeon's,) discoveries into the philosophical transactions, and made them his own,† have not clearly any bearing on the question now under consideration. His various misrepresentations of Dr. Faraday have not escaped the indignant attention of our continental neighbours.

In a work, entitled, Theorie de la Telegraphe Electrique, par P. O. C. Vorsselman de Heer, December 1839, p. 18, we find the following remark:—

"Les objections de Sturgeon et la maniere, dont il s'exprime trop souvent envers un de ses plus illustres compatriots, sont au moins *ridicules*—pour ne pas dire *d'avantage*."

I shall conclude what I have further to say on the remaining parts of Mr. Sturgeon's memoir in my next communication.

Yours, &c.

W. Snow Harris.

To the Editor of the Nautical Magazine.

On the Longitudes of the principal Maritime Points of the Globe.—*By Lieut. Raper, R.N., Sec. R.A.S.*

Sect. V. continued from vol. for 1839, p. 758.

Since the publication of the preceding paper of this series a communication has been received from Commander Barnett, containing some positions on the lake of Nicaragua, and some chronometric differences between important points which have already been under consideration.

* Doubtless Mr. Sturgeon's remarks on Dr. Faraday are quite uncalled for.—Ed.

† Annals of Electricity, vol. 5, p. 499.

As the arrival of new *data* during the progress of this discussion, may be expected to occur more or less frequently, it is proper to state here that we shall, on such occasions proceed at once to the consideration of fresh matter, in order to avoid the postponement of necessary corrections. The only evidence of this disturbing the order originally intended, by the introduction of matter of a more recent date than that of the commencement of the discussion itself, will be that some places will have two or more numbers; this however can lead to no inconvenience because the numbers are used merely for reference, and do not necessarily indicate geographical connection.

We have remarked (No. 34) that the diff. long. between Havana and Port Royal was not, as far as our information went, satisfactorily established. Commander Barnett has obtained further measures of the meridian distance between these places.

130. *Orange Cay*, Beacon.

Barn. 1838, D.L. *Havana*, sheers, 6ch. 5d. 3° 12′ 12″
the Sheers being about 6″ E. of the Morro, 79° 9′ 29″
Which we shall adopt.

131. *Nassau* Lighthouse, (see also No. 56.)

Barn. 1838, D.L. *Orange Cay*, 6ch. 7ᵐ 9·5ˢ } he adopts 7ᵐ 10·4ˢ
——— D.L. *Do.* 6ch. 7 10·8 } or 1° 47′ 36″ 77 21 53
—— 1839, D.L. *Havana*, Sheers. 4ch. 7d. [1ˢ] 19ᵐ 59·9ˢ } he adopts 20ᵐ 0·1ˢ
—— 1840 D.L. *Do.* 8ch. 6d. 20ᵐ 0 4ˢ } or 5° 0′ 1″ 77 21 50

The very close agreement between these two connections with the Havana direct, supported by that through Orange Cay gives great weight to this meridian distance, which differs however from that obtained by Capt. Owen with 5ch. in 8d. (reduced to the sheers) by 37″. Our former long. 77° 21′ 15″ would therefore appear to be 35″ or 2ˢ, too small. We shall not, at present, attempt any alteration in this, and all the other points connected with it, as Commander Barnett is still employed in those seas.

132. *Great Cayman*, Fort George, (see also No. 37.)

Barnet. D.L. *Havana*, Sheers, 5ch. 9d. [2ˢ] 0° 58′ 0″
D.L. *Do.* 7ch. 12d. 0 57 37
Supposing these quantities of equal value, their mean 57′ 48″ applied to 82° 21′ 51″ gives 81° 24′ 3″
We had adopted 81° 23′ 30″ or 33″ less.

133. *Port Royal*, Fort Charles, (see also No. 34.)

By No. 37, Captain Owen appears to have made the D.L. *Great Cayman*, 81° 23′ 30″—76° 50′ 54″ or 4 32 36
Commander Barnett quotes this D.L. as obtained by Captain Owen, with 6ch. in 12d. (?) 18ᵐ 11ˢ or 4 32 45
Barn. D.L. *Do.* 3ch. 10d. 4 32 45
—— D.L. *Nassau Light*, 2ch. 10d. 2ᵐ 0·5ˢ } he adopts 2ᵐ 0·2ˢ
—— D.L. *Do.* 5ch. 8d 1 59·8 } or 30′ 3″
—— D.L. *Do.* 5ch. 10d. 1 59·9 }
Subtracting therefore 4° 32′ 45″ from 81° 24′ 3″ gives 76 51 18
and 30 3 from 77 21 50 76 51 47
We had adopted 76 50 54 while Sir E. Home's eclipse gave 76 50 12

From these chronometric differences it appears that the mer. dist. between Port Royal and the Havana Sheers, through the Grand Cayman is 4° 32′ 45″ + 58′ or 57′ 37″, that is, 5° 30′ 45″, or 5° 30′ 22″; while the same mer. dist. through Nassau is 5° 0′ 1″, + 30′ 3″ or 5° 30′ 4″. The latter seems the best of the two, as the variations are very small. The extreme difference of the two is 41″. If, therefore, we apply 5° 30′ 4″ to 82° 21′ 51″, we obtain as above for Port Royal 76° 51′ 47″. We shall not, however, for the reasons given above, make any alterations at present.

134. *Chagres.* (see also No. 78.)
Barn. D.L. *Port Royal*, 6d. 3° 9′ 22″
—— D.L. *Great Cayman*, Fort G. 8ch. 19d 1° 22′ 10″

Commander Barnett's station was a hut on Pt. Arenas at the entrance of Chagres river, which appears by the chart to be very nearly in the meridian of fort Lorenzo.

Applying 3° 9′ 22″ to 76° 50′ 54″ gives 80° 0′ 16″ or 1′ more than we had adopted; and, applied to 76° 51′ 47″ gives 80° 1′ 9″, or 1′ 54″ W. of our adopted position. Again, applying 1° 23′ 10″ to our adopted long. of fort George 81° 23′ 30′; gives 80° 1′ 20″; and, applied to 81° 24′ 3″ gives 1′ 53″ W. of our adopted position.

This would carry Panama, and other places connected with it, upwards of 1′ west of our adopted positions; but we shall not make these corrections while surveys are still in progress on both sides of this part of the continent.

We now proceed to the continuation of the series.

In considering the longitude of Panama, (No. 128), I had overlooked the circumstance that Espinosa in his first volume has given the details of the observations made here by Malaspina's expedition. He gives the diff. long. between the tower at Callao and the place of observation at Guayaquil by the six chronometers of the two corvettes, as 2° 39′ 25″. Now the latter point was 6″ N., and 12″ W. of the Iglesa Matriz, or within a very small distance of the arsenal, and the diff. long. agrees within 30″ of Capt. Fitzroy's.

Again he gives the diff. long. of Panama and Guayaquil, after a few days' passage, 19′ 14″. Now as his observatory at Panama was within 13″ of the cathedral, or of the north-west bastion, this diff. long. confirms Lieut. Kellett's. Thus the connection between Callao and Guayaquil, which was doubtful from the conflicting nature of the portion of the evidence adduced, appears satisfactorily established. A confirmation of the positions we have adopted has appeared. M. Humboldt has transmitted to the Geographical Society an account of observations of the transit of Mercury made at Lima in 1832, by M. Scholz. These compared with others by M. Bogulawski at Breslau, and computed by M. Galle, assistant-astronomer at Berlin, give

Internal contact,	$5^h\ 17^m\ 41{\cdot}4^s$	or 77° 4′ 59″ Gr.
External,	5 17 48·5	or 77 6 45 do.

M. Humboldt found the diff. long. between Callao and Lima, by a

chronometer in four passages, between Nov. 9th and Dec. 27th, 1802, agreeing within 4', to be 7° 10'·5.

The internal contact places Callao in	77° 12′ 9″
The external,	77 13 55

Our supposed long. or 77° 11′ 53″ thus agrees nearly with the former which will naturally be considered the better observation of the two.

In adopting, therefore, for convenience, Guayaquil in 79° 52′ 40″, we make the diff. long. between Guayaquil and Panama, (in 79° 31′ 9″) to be 21′ 31″ instead of 19′ 36″; we must, therefore, distribute the difference, or 2′ among the intermediate places. And since we cannot displace Panama, (which from the foregoing seems the best determined place on these coasts, being referred to the same position both from the eastward and westward,) and since the small discrepancy in question had (as we think) its origin somewhere below Valparaiso, the admission of an error between Panama and Guayaquil is unavoidable in the present state of the question.

In the following, therefore, we consider the supposed or presumed positions to be the *true positions*, and the adopted positions as arbitrarily assumed merely to accommodate the coast line.

The *corrections* we shall add are as follows; Salango 1′ 54″; Atacames 1′ 27″; Morro Id. 1′ 16″; C. Corrientes 44″.

135. *Santa Clara*, Id. Head.

Captain B. Hall, D.L. *Callao*, 1ch. 8d. 3° 12′ 3″ W.	80° 25′ 48″
——— Belcher, 1836, D.L. *Puna*, 12ch. 0 29 15 W. Puna 3′ 24″ W. of Arsenal	80 25 19

We adopt 80° 25′ 19″

136. *Pt. St. Helena*, Extreme.

Espin. I. p. 151, 74° 38′ Cadiz, or 1° 6′ W. of Guay.	80 59 0
Belch. D.L. *Puna*, 9ch. 14d. 1° 4′ 34″ / 12ch. 5d. 1 3 57 } 1° 4′ 6″	81 0 10

(By our presumed position of Puna, 80° 58′ 18″.)

We adopt 81° 0′, because this place being W. of Guayaquil, and not distant, no correction is necessary.

STORM OF NOVEMBER 13th, 1840, *as observed near Bristol.*

Thursday, 12th Nov.—Morning calm and foggy; in the course of the day a breeze arose from the east accompanied with rain.

Friday, 13th.—Four days after the full moon; foggy showers during the early morn; fresh breeze from the east. On going into the garden at 7 AM. I was greatly surprised to find the air quite warm. Forenoon, wind increased to a strong gale, veering to the south-eastward, with heavy rain; by 11h. 15m. the wind had rapidly increased in violence, and veered round to south, the squalls powerful. Dense clouds darkening all below, had spread over every part of the concave, and the scud was rapidly fleeting towards the north; at this time the centre of the storm bore west from a position, south-west one mile from the city of Bristol.

At 1h. 15m. P.M. the squalls were tremendously heavy, accompanied with a deluge of rain: I expected the windows would be forced in, so powerful were the gusts; the direction of the current of air was oblique, which, probably, saved the glass: the wind was S.S.W. These tremendous squalls lasted about half an hour, and showed that the storm's meridian had arrived; at the same time informing us of the line the meteor was pursuing.

By 2h. 30m. the wind had drawn round to S.W., the squalls still heavy, but the general force of the wind not so great as between one and two o'clock: the rain held up for about twenty minutes a little after two. Up to 3h. 30m. the squalls less severe, still showery, wind veering round to the westward.

At 6h. P.M. wind west, accompanied with rain and hail showers. At this time the centre of rotation bore north of our position, proving that the nucleus had passed to the left of our station, with an inclination to the eastward of north.

At 8h. the wind had greatly lessened; at intervals light. At 10h. the wind was W.N.W., still squally at times, but the intermediate breeze light: in half an hour after, the storm had entirely passed away.

It seems evident that the high wind which had blown all the early part of the morning from east to E.S.E. was the *precursor* gale; the first pertaining to the circle having been from about S.E.b.E., and the last W.N.W.,—fifteen points of change. Taking the crisis point as a guide to direct us to the path the meteor was pursuing at the time of its meridian over the locality, S.S.W., we find it to have been to the N.N.E., which is rather more northerly than those preceding it, the courses of which have been determined.

The following morning was very fine with a light air from the west.

It is stated, that at Liverpool, at 3h. P.M. (13th,) the barometer reached its lowest depression 28·39, which was 1·11 lower than at the same hour the day before.

It appears to me, that during the thirteen hours (9 A.M. to 10 P.M.) this storm continued, with the exception of the half hour of the *crisis*, the general severity of the wind never exceeded eleven, and was often lulled to ten, and at times even to nine. Upon the whole, I should say that it was not so severe throughout as the storm of November, 1836, or that of October, 1838, although the gusts at the crisis were equal to twelve, and to any which pertained to those hurricanes. It is probable, however, that on sea coasts where the wind happened to blow directly upon the open lines, the effects would be found nothing short of those preceding storms.

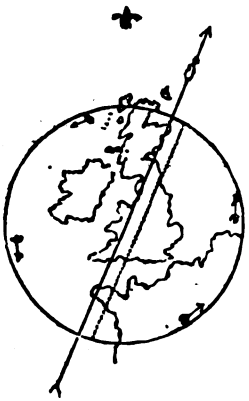
The gale is spoken of at Southampton as having been the *severest ever felt there*, and "reached its climax" from the S.S.W. at 2h. P.M. at the time of high water.

At Cowes, they speak of the storm as a "tremendous gale," and the tide as being the highest known for the last eighteen years; and no wonder, as the winds were principally from westward, and the flood coincident with their direction and period.

At Portsmouth, the statement commences thus: "an awfully grand expression of Divine might was manifested here yesterday, (13th Nov.)

by a severe gale of wind, accompanied by a rise of tide higher than has been known for thirty-eight years, by at least one inch and a half, as recorded by an inhabitant of Point."

It is remarkable, that, (with the exception of Plymouth where Mr. Snow Harris exerts his useful abilities,) there is never any regular account given at the sea-ports, of the veering of the wind in these circular storms. Is there not one solitary officer of the navy on shipboard who takes an interest in the subject?—Surely it concerns them all.



Transit of the storm of the 13th Nov. 1840.

Time 6 P.M. at Bristol, wind west, accordingly we should expect the wind to have been at the same period at the Wash in Norfolk, from the south. About the Tees mouth at south-east. At Kintire and the north-west face of Scotland from the east. On the north-west coast of Ireland from the north-east, and the west coast from the northward, unless the *curl* interfered so as to alter the direction.

The Second Hurricane of November, 1840.

Monday 16*th*.—Squally with heavy rain, wind W.S.W.,—foggy. In the afternoon the rain ceased: evening and night squally. Last quarter of the moon the morning of this day.

Tuesday 17*th*.—Calm, dense fog: forenoon, a light breeze sprang up from the east: afternoon showery, wind increasing. At 3h. P.M. it shifted to south in a squall of great force, accompanied with heavy rain, blowing a storm; the changes to south-west were in quick succession, and at 5h. the wind was S.W.b.W. increasing in violence. At 5h. 30m. very heavy gale; at 7h. 15m. tremendously heavy squalls from the W.S.W., which lasted until near 8h., and proved the presence of the *crisis*. After 8h. P.M. the wind moderated a little, but at intervals the squalls were still powerful, wind veering to the northward of west. At 8h. 30m. the gale had lessened to a moderate breeze, with occasional squalls from W.N.W., northerly. Again, as in other instances, I found the air *quite warm*. At 9h. P.M. calm, the storm having entirely passed away to the eastward, after a short but brisk career. At 9h. 30m. a light air sprung up from the west.

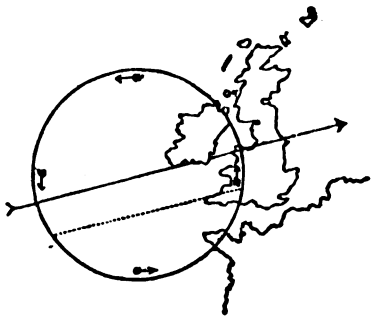
On the following day, 18th, a light air east,—fog, rain, and sleet: night nearly calm.

The rotary character of this storm like that of the 13th, seems sufficiently apparent, the changes being from south to about N.W.b.W. ten or eleven points, and its duration only four and a half hours. The course indicated by the *crisis* appears to have been about E.N.E.

In London this storm came on as suddenly as it did with us, about two hours after *i. e.* at 5h. P.M., and is stated to have exceeded in vio-

lence that of the 13th: at 7h. P.M. it was at its height, and had ceased before midnight. The changes of wind are not given,—they were probably from S.S.W. to W.N.W.

S. J.



Storm of the 17th Nov. 1840.

Time 3 P.M. commencement, wind south. In the north of Ireland the wind should have been from the south-east; at Liverpool from the S.S.E,; and the same on the south-east face of Ireland at the above hour.

In both cases the extent of the circle is only assumed for the sake of convenience.

Loss of the Fairy.

If there be any duty which falls to the lot of public journalists to perform, more painful, and yet no less necessary, than most others, it is that of recording the loss of officers who were an ornament to their profession, along with their unfortunate companions; but painful as that duty must always be, it is alleviated in no small degree by the reflection, that although cut off in the midst of their career, they have fallen at their post, while forwarding the public service. Such has been the fate of the captain, officers, and crew of H.M. late surveying vessel Fairy. It was not long ago that in endeavouring to place the services of our naval officers employed in the laborious and trying duty of surveying before our readers in their proper light, we had to allude to Capt. Hewett, and his proceedings in the Fairy, in his survey of the North Sea; and we repeat the assertion we then made, that such a survey as he was charged with was altogether unprecedented, and unequalled, not only in its vast detail, and its vast importance; but the great degree of perseverance and labour required for its performance.

Having enjoyed the benefits of an excellent education at Christchurch, Capt. Hewett first went to sea with the late Admiral Rodd, when he commanded the Indefatigable in Nov. 1805; and remained in the same ship under her successive Captains Baker and Broughton during her service on the coast of France, in the Bay of Biscay. With the latter officer he went in her to China in 1811; and on his return home on being appointed to the Cornwall, Mr. Hewett accompanied him as midshipman. In 1813 he joined the Inconstant under the command of Capt. Sir Edward Tucker, and was present in her on the coast of Brazil. It was in this ship that he made several surveys, which so much pleased his captain, that he was presented by him with an acting order as lieutenant, dated in June 1814; and confirmed in the Sept. following in preference to several other passed midshipmen on board,

senior to himself. His care and attention to the scientific duties of his profession had procured him the charge of the chronometers on board the Indefatigable, but his survey of the harbour of Rio made at a time when the knowledge of it was rendered important by being kept from us by the Portuguese, obtained him considerable credit, and its accuracy, and the means by which he made it, (so closely were the ship's proceedings watched,) were a matter of astonishment to the jealous Portuguese government. The other surveys made on the coasts of Brazil were those of Pernambuco, now used by Her Majesty's ships; also St. Marcos Bay, Maranham, and the coast from Siara to Maranham.

These services recommended the subject of our memoir to the attention of the Admiralty, and he was named by Capt. Hurd for the command of Her Majesty surveying vessel Protector, to which he was appointed, on the 7th of March, 1818. He then commenced that series of valuable surveys which have left his name imperishably enrolled among those who stand prominently forward as the scientific ornaments of their profession.

One of the first duties of the Protector was to accompany Captain Kater to the Orkneys, when he was sent by the Royal Society of London, in conjunction with M. Biot, who had been previously sent by the Royal Institute of Paris, to make observations and experiments to determine the figure of the earth. The opportunity thus afforded of making some small plans of harbours in the Orkneys, was not lost by Lieut. Hewett.

From this period until the year 1830, in which interval Lieut. Hewett was made a Commander, the Protector was constantly employed in surveying the coasts of Norfolk, Lincoln, and Yorkshire, with their numerous outlying dangers, including the Humber, and the extensive and dangerous tract, called the Lynn and Boston Deeps, besides various shoals, among which were the Gabbards, the Dudgeon, and the Leman and Ower, detached at a considerable distance from the shore, in addition to those lying contiguous to it, all of which have long since been published by the Admiralty. In addition to the responsible work of surveying, it will be seen by the following letter which we happen to have at hand, that another arising out of the experience which an officer so employed would necessarily obtain, was required from Lieut. Hewett. The letter is addressed to the Secretary of the Admiralty, and will afford an idea of that zeal for the benefit of navigation which characterized the late Capt. Hewett.

H.M. Surveying Vessel, Protector,
Deptford, Jan. 16th, 1826.

Sir.—The Right Honorable the Lords Commissioners of the Admiralty having been pleased in their general orders for my guidance, while employed in the survey of the North Sea, to instruct me to the following effect, "and you will particularly direct your attention to the situation of the different lighthouses along the coast, with the view of ascertaining whether they are sufficiently distinct from each other, or could be placed in any more eligible situations." In obedience thereto, I beg leave respectfully to advert to the northern entrance into Yarmouth roads, commonly called the Cockle Gatway; and which, whether regarded as a difficult navigation in the night time, and the consequent great

annual loss both of lives and property in its vicinity, or as the principal entrance into the only practicable anchorage for His Majesty's fleet between the River Humber and the Downs, is peculiarly worthy of their lordships best attention.

It is well known amongst those accustomed to navigate the eastern coast of England, that the Cockle Gatway is a constant barrier to vessels desirous of passing through Yarmouth Roads, should night overtake them before it is passed. Vessels from the southward have no difficulty in steering a course for, and passing over the Bar of the Stamford into Yarmouth Roads, from the assistance afforded by the Lowestoft Ness lights, and the Stamford light vessel, but after running through the Roads as far as the master's personal acquaintance may dictate, they *must* anchor until daylight enables them to pass further northward through the Cockle Gatway. To vessels thus bound, no further inconvenience is experienced than delay in their voyage, as Yarmouth Roads when once obtained, may (except in strong gales between east and south-east), be considered as affording a moderately safe anchorage.

Vessels from the northward are however differently circumstanced, they pass the Flamborough Head Light, and successively the Dudgeon Light Vessel, the Cromer Light, the Hasborough Lights, and thence to abreast of the Winterton Light, and somewhere in the neighbourhood of the latter they must either anchor or lie to, as occasion may require, until daylight enables them to pass through the Cockle into Yarmouth Roads! for this Gatway cannot be taken in the night time without imminent risk, for the reasons I shall presently submit in describing it more particularly. But should these vessels be desirous of avoiding Yarmouth Roads, when abreast of the Hasborough lights, they steer for the Newarp light vessel, situated at the northern extremity of the Newarp shoal, and so pass on the exterior of the Yarmouth dangers, or what is locally termed "at the back of the sands," and by which means they are enabled to prosecute their voyage without that loss of time inseparable from the beforementioned route through Yarmouth Roads.

Having thus described the usual tracks of vessels passing along this portion of the eastern coast, and under the supposition that they have favourable winds and moderate weather, I must now bring them under those circumstances that so often prove fatal to them, in the disastrous space between Winterton Ness and Caistor Point; and this has particular reference to vessels coming from the northward, among which the accidents generally occur.

Such may find themselves in the exposed situation off the Winterton light in the night time, generally from one of the following causes, viz. 1st. Anchoring or lying to, with the favorable wind and moderate weather mentioned above, waiting for daylight. 2nd. Having attempted to pass out in the exterior of the Yarmouth dangers, and finding it impracticable, are obliged to return. 3rd. Foul winds.

The first case needing no particular explanation, I pass on to the second. It happens that in running through the *Would*, (which is the space comprehended between the Hasborough sand and the Norfolk shore, but which the sand itself affords no shelter whatever to,) and with the wind between north and north-east, in getting to the southward, the wind is found to draw more round to the eastward, or upon the land. Should night be advancing, most vessels try hard to weather the Yarmouth Sands, before it closes upon them; but should the wind so veer round to the eastward, and a flood tide be unfortunately making up at the same time, the attempt is often frustrated, when no other alternative presents itself, but to tack and stand back into the *Would*, and wait for the daylight to take the Cockle, abiding the event of, perhaps, a long winter's night, which with the wind from this quarter, particularly after a long duration of westerly winds, frequently produces a heavy gale.

With respect to the third case; viz. foul winds, preference is generally given by most vessels to beating through the Cockle Gatway, and passing out of the St. Nicholas Gatway, rather than encounter a heavy sea without the Newarp and Cross Sand, with the chances of being driven off the land, or of anchoring in deep water when the tide turns leewardly; if night overtakes them, they

also must rendezvous in the exposed situation off Winterton, until daylight and a favorable tide facilitate their passage through the Cockle.

The North Sea is notorious for its winter gales, and these as regards both their suddenness and shifting, are occasionally of the most extraordinary description, and generally prove the leading causes of the destruction of vessels under Winterton. I beg leave to illustrate this by a very strong case in point.—On Sunday, October 13th, 1823, I was surveying the coast bank between Hasborough and Cromer, with a south-westerly wind, and which had prevailed for several weeks before. Towards evening I beat up to Winterton with the view of taking up a position for the operations of the ensuing day, when it suddenly fell calm, and compelled me to anchor within pistol shot of the beach, to prevent going on shore, it being also quite dark.

Nine merchant vessels had anchored from the same cause. Apprehensive of an easterly wind, everything was kept ready in this vessel for taking advantage of the first light air, and which was felt from the north-east, two hours after the south-westerly wind had subsided. The anchor was immediately weighed, and the vessel got on the larboard tack, which was no sooner done than from the sudden violence of the wind everything was 'let fly,' save the topsail sheets. To take the Cockle was quite impossible, although it was under the lee, and I was compelled to run over the Sea Heads, and the Newarp, and which from the precise knowledge I had of the best parts of those banks, and it being fortunately near high water at the time, was effected (under Providence,) with safety to his Majesty's vessel. Eight of the nine vessels were driven on shore, and part of the crew of one of them only were saved by Capt. Manby's apparatus; the ninth rode out till daylight, when she slipped, and ran through Yarmouth Roads.

On this occasion had the means existed of running through the Cockle Gatway in the night time, not one of the vessels alluded to need have suffered, the the wind being perfectly fair; as it was, they preferred the chance of saving their lives on the beach, to the certainty of losing them on the detached banks, in the event of striking upon either of them in attempting the Cockle under existing circumstances.

The Ranger revenue cutter, was also lost, with all her crew in the same gale under Hasborough, as well as many other vessels, waiting to take the Cockle. The Protector was also reported as having swamped at her anchors, it being the opinion of the pilots and fishermen of the neighbourhood, upon finding her gone the following morning, that she could not have effected her escape from the position she was seen in under the circumstances, from which their lordships' will perceive that the pilots themselves are unable to take the Cockle in the night time.

The Cockle Gatway is difficult to navigate in the night time, for the following reasons.—The Cockle and Barber banks (which are connected with each other,) form the starboard side of the channel, and both of which are steep to, having from eight to twelve fathoms alongside them, the lead therefore does not give sufficient warning of approach.

There is beside a very awkward elbow projecting out from the middle of these banks, and which it would be very difficult to round, particularly with a tide running.

The larboard side of the Cockle Gatway is formed by the "Sea Heads," and the "Tongue of the Scroby," which, unlike the opposite side, can be approached by the lead, but must not be traced along on account of a deep bight called the "Barley Pightle," being formed between those two banks, and at the head of which there is no practicable outlet.

Many vessels are lost in this bight, the soundings in which are nearly the same as those in the fair-way of the Cockle, consequently calculated to mislead. They heedlessly run along the edge of the sea heads by the lead, under the impression that they are going into Yarmouth Roads and leaving the tongue of the Scroby on the larboard hand, instead of which they are actually in the in the Barley Pightle, and do not discover their mistake until they suddenly strike the ground.

An attempt to steer a mid-channel course would be attended with danger from the uncertain effect of the stream of tide upon the ship's course, the flood setting strong upon the Scroby, and the ebb stronger and more directly upon the Barber.

Having thus described the leading causes of the many dreadful shipwrecks on the Winterton shore, and adjacent banks, viz. the impracticability of taking the Cockle Gatway in the night, and the consequent necessity of hovering about Winterton until daylight, then caught with violent and sudden gales in that position, I now beg leave to submit to their lordships, the means by which such disasters may be obviated in future, with reference to that portion of their lordships instructions, quoted in the early part of this letter.

About one mile and a half to the northward of Winterton lighthouse, there is a slight projection of the land, called Winterton Ness, on which are two small lighthouses nearly east and west of each other, or in a direction nearly perpendicular to the coast line. *When* they were erected, or for *what* purpose, I have never been enabled to inform myself of on the coast, nor from my many years' experience in navigating it to discover their use.

When brought in one with each other, they lead to no channel, nor to clear any banks, but are lighted up as useless beacons upon the coast, and answer so far, as I can discover no other purpose, than facilitating the loss of vessels, for it is become quite a rule to run down abreast of these lanterns, in order to heave to for daylight, whereas, did they not exist, it is more than probable that vessels would heave to much more to the northward, and consequently would be so much more to windward in the event of a gale springing up.

But, should it be deemed necessary to run so far as Winterton, the bearings of that light, as also of the Newarp light vessel answer equally as well to shew the proximity to the Yarmouth Banks.

If I may be permitted to hazard a conjecture, I should suppose the two small lighthouses to have been erected previously to any others in the neighbourhood, and that they formerly served to shew the approach to the Yarmouth sands, now rendered useless by the existence of the Winterton lighthouse and the Newarp light vessel.

Their transit bearings also may have served to direct vessels partially through the Hasborough Gatway, now totally eclipsed by the admirable lights at Hasborough, and which are more appropriately placed for leading through that passage. I have learnt that they are the property of Lord Braybroke, and that his lordship receives £500 per annum for keeping them up.

Were these lights extinguished in their present position, and two others exhibited in lieu thereof upon the North Danes of Yarmouth, where many appropriate sites exist; not only would the present annual destruction of lives and property in the fatal neighbourhood of Winterton be obviated, but vessels would also be able to prosecute their voyages in the night time, as well as by daylight, by passing through the roads, and over the Stamford Bar, except such as draw too much water for the latter, and they would at least obtain comparative safety.

Lighthouses built upon a very moderate scale would answer every purpose required: the lights also need not be exhibited to more than four points of the compass, viz., two on either side of the fair-way line of the Cockle, nor of a brilliancy to render them visible at a greater distance than five or six miles, so that, beyond the original expense of erection, none other would be incurred, as the annual one would be covered, (if I am rightly informed) by the sum at present appropriated to the Winterton Ness lights.

The number of wrecks that at low water exhibit their remains, are melancholy proofs of the necessity of the navigation of the Cockle being facilitated by the means I have now humbly submitted for their lordships consideration; and I feel assured that Lloyd's books could fully shew losses of one year only, which would cover the expenses of the necessary lighthouses.

On 13th October, 1823, as referred to in the body of this letter, the property lost on that one occasion was probably many times greater than the means of prevention would have cost.

Having concluded, Sir, my observations on this important point, I trust their lordships will pardon any apparent digression from the subject I have professed to address you (for their information) upon; being anxious to convey to them a just idea of the present state of this navigation, and of things connected with it, as they exist, in order to further their lordships benevolent designs of improving its condition, and for which purpose the vessel I have the honor to command is fitted out.

I have the honor to be,

Your obedient servant,

WILLIAM HEWETT.

The lights off Winterton, remain we believe still, and whether Lieut. Hewett was right or not in his opinion of them, we believe it will be admitted that his suggestions in lighting the Cockle Gatway were followed by the Trinity House.

Most assuredly duties such as these are legitimately demanded from our surveyers, whose experience on the very places under consideration, especially enable them to form correct opinions on buoying those dangers which fall under examination, and on the most eligible positions for lighthouses to guide the seaman clear of them. But from being nearly always in immediate communication with the Admiralty, as well as holding so responsible a position as that of surveying the north sea, Captain Hewett in the course of his service was referred to to decide on the merits of various nautical inventions, among the first of which was an attempt at a Marine Artificial Horizon, by the late Capt. Phillips, the inventor of the capstan so highly prized in our men-of-war. The horizon like many others before and after it, proved a complete failure, but the experiments which Capt. Hewett made with it, were the occasion of a very serious fit of illness, produced by the effects of the great quantity of mercury, which Capt. Phillips employed. Indeed, the inventor himself suffered considerably, and the death of the master of the Protector whose constitution was already weakened by service, it has been stated, was accelerated by it. Among the instruments of this nature which successively fell under Capt. Hewett's trial, were those of Capt. Rickett's, Mr. David Rowland's, and Lieut. Becher's; all of which were reported on to the Admiralty; and we may take this opportunity of bearing testimony to the general impartiality and ability, with which those reports were drawn up. Another invention reported on by Capt. Hewett was, that of Dr. Smyth of New York, a few years ago, who affirmed with the most tenacious perseverance that he possessed a remedy for preserving the compasses of ships from that annoyance to seamen called "local attraction." It is true that a correction for the disturbing influence of the ships iron, is now found amongst the rationale of our careful seamen, to whom this is no longer a danger; but it still remains unheeded by the many, and throws its baneful effects into the balance of evils which lead them from their course. However, the doctor's recipe was declared null and void by Capt. Hewett, even before embarking, and experience proved it so, shewing that the best of all ways to cure an evil of this incurable order is, to let it alone, but after finding it out, to make due allowance for it.

Perhaps, we are not far wrong in saying, that Captain Hewett rendered an essential service to the Compass Committee, whose opera-

tions we have recently noticed in this journal, by his experiments and suggestions on the several trial compasses submitted to his care. His report on them, after the various alterations and trials which they underwent on board the Fairy, confirmed the views of the committee, and established the form of the different component parts, as well as the ultimate construction of that, which, we believe, will hereafter be supplied to the British Navy.

But, we have departed from the thread of Captain Hewett's surveying services, having left him as commander in the Protector. It was in 1832, that the coasts of England which more immediately fell in his way, being sufficiently examined and published, that his grand work of the North Sea survey was commenced. It would be difficult to give our readers a clear view of the immense labour which this work required. The breadth of the North Sea from the coast of Suffolk, to that of Holland, in a direction due east, which is the most important part of it, is about a hundred miles. Let our readers imagine as many circles of about seven miles in diameter as would reach across, (amounting to fourteen,) to be all filled up with soundings, at about half a cable's length from each other. These circles would represent the horizon of a small vessel the Fairy's tender anchored in the centre, around which it was the business of the Fairy to sail, sounding in every possible direction, so as to leave no space unexplored by the lead. Now the part already so explored, consisted of about eighty-five miles of latitude, and about 190 minutes of longitude, or about 118 miles of actual distance, being about 10,030 square miles of space. Taking off about one-fourth of this for the land, we shall have 7,423 square miles to be sounded over, so that to cover this area would require about one thousand circles, and as each of these circles contained a track on an average of about 150 miles, or three good days works, the distance sailed over would amount to 150,000 miles. The rate of sailing was about four knots, and a sounding obtained at intervals, varying from three to five minutes. Assuming them at five, there would be about three sounding in a mile, and, therefore, 150 soundings in a day, or 450 soundings in a circle, and the whole amount for the circles would be 450,000, the results of which were all noted, and the arming of the lead each time preserved and numbered for immediate reference. This is of course a rough calculation, but it will serve to convey an idea of the nature of that work, which is left by Captain Hewett as an imperishable memorial of his labours for the interests of navigation, in a part of the world, which is continually traversed by many thousands of tons of the shipping of all nations.

The Protector was soon found unequal to the task of keeping the sea for this work, and her place was taken by the Fairy, which vessel was commissioned by Commander Hewett, in the month of December, 1831. The northern limits of the chart selected for publication is, lat. 52° 10′. It would take us far beyond our limits to go into the question of the foundation of this chart, in point of its general scientific principles, but we may briefly observe, that so rigorously exact were the observations of Capt. Hewett, made even afloat in his vessel, that they enabled him to point out an error in the length of one of the sides of a triangle, in the survey of Holland by General Krayenhoff. The flat nature of that country

leaving the different steeples of the churches visible to a considerable distance at sea, so facilitated his observations, that he pointed out the exact number of feet to which this error amounted, and which on a formal investigation were found to be quite true.

In January, 1837, Commander Hewett obtained his rank as Post Captain, continuing to pursue with his wonted zeal his valuable researches. In the course of the last summer an opportunity presented itself of determining an important question in the theory of the tides of the North Sea.

Professor Whewell, with whose researches in the subject of the tides our readers are no doubt acquainted, with that profundity of reasoning which his knowledge of the subject enabled him to exercise, came to the conclusion, with respect to the tides of the North Sea, that there must be a certain place in this sea at which there would be no rise and fall, but a gradual gyration of the water. It was not until last summer, that in carrying her sounding operations across the North Sea, the Fairy was near this place under circumstances of weather and time, (that of the equinox,) that enabled her captain to make the necessary observations to confirm, or refute this theory. To make observations on the rise and fall of the tide at sea, with so much delicacy as to set this question at rest, was a matter which required the tact of the man of science, with the experience of the seaman. But the difficulties of making them were overcome, and although not in the precise position pointed out by Mr. Whewell, the observations were made, and amply confirmed the opinion of the learned professor. In another number, we shall take an opportunity of laying before our readers the method adopted by Captain Hewett, to determine this question, as it may be a useful hint to others hereafter.

The eighth year's produce of North Sea operations had been just obtained, and the Fairy was on the point of returning to her usual winter quarters at Woolwich, when her presence was called to Yarmouth, to enable her captain to inspect an invention of Captain Manby, for clearing away the bars of harbours and rivers, and report his opinion on its efficiency to the Admiralty, Indeed, the time for the Fairy to leave her surveying ground was already come, and the time necessary for visiting Yarmouth being so short, every thing had been embarked for the voyage to Woolwich, which it was expected would take place within two days from her departure. The sequel, involves an event already known to most of our readers, and which, unhappily leaves many widowed mothers and orphan children to deplore their loss, and to encounter unprotected the vicissitudes of the world.

Capt. Hall, ever active in doing good, has employed his able pen in an address to the public, through the *Hampshire Telegraph*, on the part of Mrs. Hewett, and with the view of seconding him in his good design we transfer it as it stands to our pages.

Portsmouth, 8th of Jan. 1841.

SIR.—I have been requested to solicit the advantage of your columns, to circulate a knowledge of the distressing case of the widow of the late Capt. Hewett, who was lost in the Fairy, surveying vessel, in the great gale of the 13th of November last: and I feel confident, that the

friendly feeling you bear to the service, will prompt you to render your powerful aid in so good a cause.

Were the case an ordinary one, I might have hesitated to intrude it upon public attention, however deeply I might have been interested in the parties; for I hold that appeals of this nature should never be made on light grounds. Unhappily, there is nothing uncommon in the widow of a gallant and highly meritorious naval officer being left with eight children, almost entirely unprovided for; but it is seldom that an instance occurs which has such strong claims on the public favour as the present.

That an officer who has devoted his whole life to the execution of his professional duties, and has at last perished in their actual performance, is well entitled to our respect no one will deny, nor that his destitute widow and orphans are objects of our compassion. Still, unless he shall have performed either some brilliant, or some useful public service, his family can claim little more than our sympathy, and must be left to the care of those to whom they are nearest and dearest, aided by the casual assistance of others, whose generous natures judge of such matters by their own intrinsic distress.

The case of Mrs. Hewett, however, and her eight delicate children, (three of whom are at this trying moment very ill), stands on such very different grounds, that I cannot doubt, when the services of her late husband become generally known, she will be promptly and effectually relieved by the public.

When an officer distinguishes himself in battle, the country are never slow to acknowledge their sense of obligation to him, and to reward him for augmenting the national renown. Or, if he should fall in action, sound policy inclines them to provide for his family. But there are other services fully as beneficial to the country, and as essential to the advancement of its true glory, as those which figure in the gazette; and which, therefore, are no less justly entitled to the public favor. Of these, the silent, unseen, protracted, often perilous, and always arduous labours, of the maritime surveyor are entitled, on many grounds, to a high place in our esteem. There are perhaps no exertions of any of her Majesty's servants, which produce more decidedly practical benefits to the community—none, of which the good is more substantial at the moment, or more permanently useful in its character—none of which the results are more readily available in practice—nor any labours which require, at every stage of their progress, more skill, knowledge, patience, perseverance, and, above all, good faith and genuine public spirit, than the works of the hydrographer. This will be understood, when it is recollected that in the course of almost every other branch of public service, occasional inaccuracies or neglects may occur, without essentially vitiating the result. "Success," said Lord Nelson speaking of war, "hides a multitude of blunders." But this will not apply to surveying—for no eventual gloss or pretension, no elegance of execution of the maps, will make up for the smallest antecedent blunder in the details. Accordingly, a conscientious surveyor, like Hewett, makes it a sacred duty to superintend every cast of the lead, to verify every compass bearing by his own eye, to regulate, and employ his chronometers with his own hands, and to observe the celes-

tial bodies with instruments, the merits of which he has himself proved. Finally—out of an immense mass of carefully accumulated materials, scientifically reduced, he has to lay down his charts, that is, to adapt his work to the common use, not only of his own trading countrymen, but of the maritime world at large.

It will scarcely be asked, what is the use of all this minute care? or in what way are the public concerned in it? or why should they owe so large a measure of gratitude to this particular officer, as to be called upon to assist his widow and orphans? I shall, however, now show what have been the extent and the nature of his public services, of which their very great utility depends entirely upon the zeal and fidelity with which they were carried on. The character of the surveyor, indeed, is the only guarantee we can have for the correctness of such a work, and it is upon this well established reputation that any claims of his family can rest.

I pass over Captain Hewett's surveys of Rio de Janeiro, Pernambuco, and other distant places, because, though admirable in their way, and very useful to those who trade with those nations, they are less calculated to make an impression on your readers, and in point of fact, are less extensively useful than his labours nearer home. In all the wide circuit of waters navigated by British ships, there is, I believe, no region more sailed over than what is called the North Sea, lying between the East Coasts of Great Britain, and the continent, nor any with which it is of more importance to the mariner to be well acquainted. It is thickly strewed over with dangerous shoals, many of them out of sight of land; some lying directly in the fair-way of navigation, and others far to the right and left of it, but not the less dangerous on that account to vessels driven out of their course by stress of weather.

In 1818, Captain Hewett* commenced the gigantic task of surveying this immense net-work of shoals, and he followed it up with a minuteness and exactness heretofore unequalled in this or any other country. In the process of this most useful undertaking, numerous dangerous banks were for the first time examined, and their places correctly ascertained; others, which had no existence but in the fears of fishermen and traders, were swept off our charts. All the passages among the shoals were carefully sounded, and rendered available by means of intelligible sailing directions,—innumerable buoys were laid down, and lighthouses erected along the coast, to guide the mariner by day and by night; and I have just learned that the Trinity-house have borne honourable and substantial testimony to the value of Captain Hewett's suggestions on these points, and to the singular clearness and seaman-like precision of all his operations, by awarding 200*l.* to his widow.

In the midst of this career of public usefulness, Capt. Hewett was suddenly cut off, and the great work which he had almost completed, most unfortunately interrupted. And here it may be interesting to

* Captain Hall is here alluding to the commencement of Captain Hewett's survey of the *shores* of the North Sea, that of the sea itself having been undertaken as we have stated afterwards, and for which, unhappily, no sailing directions were ever compiled by him.—Ed.

pause a moment, to consider how different the positions are in which an officer in command of a ship may be placed. There is not in the world a more glorious situation, or one upon which the country at large looks with greater admiration than that of a captain leading his ship into action—it may be to death—it must be to honor! On the other hand, what stretch of imagination can reach, or sympathy embrace the anguish and horror of a commanding officer in the situation of Capt. Hewett in the gale when the poor Fairy foundered! All the skill and fortitude which had availed him so often in rescuing his crew from perils, he now sees to be utterly useless: wave after wave beats over the devoted ship, tearing the masts away, and washing all his gallant companions overboard: finally, the swamped vessel, completely overwhelmed, sinks under his feet!

May we not well suppose that along with his last mortal agonies, and the deep sorrow at being thus wrenched away from the world, in the prime of life, he might yet feel supported by the reflection—that, as he had always done his duty by his country, and contributed materially, by his individual exertion, to its interests,—his country would not now desert those whom he could no longer assist—and that, though no human hand could dry his widow's tears, it might still make "her heart to sing for joy," by rendering the office of "a father to the fatherless."

As, however, it forms, comparatively, an inconsiderable part of my present object to work on the feelings of your readers, I shall not pursue this subject further, nor intrude unnecessarily on the sacred privacy of the desolate widow's grief, except to state, that her eldest son, a midshipman, and her brother, the master of the ship, perished along with her husband in the Fairy.

It is enough, I hope, for me to state in conclusion, which I do upon the best authority, that her means, even with the highest pension which the rules of the state allow, must prove totally inadequate to maintain her in the position which, as an officer's wife, she has hitherto been accustomed to enjoy. Neither can Mrs. Hewett, unless assisted by the public, hope to bring up her children as they would have been brought up had their father's life been preserved to them and to his country. Let it be recollected also, that although this appeal is made in part to the generous sympathies of the public, it is not less directed to their sense of justice. For, if it be true, as I pledge myself it is, that Capt. Hewett has rendered very important and permanently useful professional services to the nation, without his ever having had either time or the means of laying up any provision for his family, they are certainly well entitled to protection, and to the heartiest assistance we can render them. It is gratifying to be able to communicate, that two gentlemen have already come forward to assist Mrs. Hewett, one with the offer of a cadetship, and the other with a presentation to Christ's Hospital, for her sons.

Subscriptions for Mrs. Hewett will be received by Captain Beaufort, Hydrographer's Office, Admiralty; by Captain Drew, of the Trinity House; Thomas Lawrence, Esq., Post Office; and the London and Westminster Bank, Waterloo-place, and Lothbury, London.—Also, by

Lieutenant Cook, R.N., Addiscombe; and I shall be happy to receive and transmit to the Committee of Gentlemen acting on behalf of the widow, any subscription which may be forwarded to me at Portsmouth.

I have the honor to be,

BASIL HALL, *Captain, R.N.*

P.S.—9th Jan. I copy the following paragraph from a Circular which has not been published:—Subscriptions will be thankfully received at the bank of Messrs. Drummond, Charing Cross; of Messrs. Williams, Deacon, and Labouchere, Birchin Lane; of Messrs. Martin, Stone, and Stone, 68, Lombard Street; also by Robert Miller, Esq. Blackheath Park; Thomas Lawrence, Esq., General Post Office; Captain Drew, Trinity House; John Walker, Esq., Hydrographer, India House; Major Robe, R.E., Tower: Thomas Chapman, Esq., Lloyd's; George Babb, Esq., Great Grimsby, Lincolnshire; Captain Basil Hall, R.N., Portsmouth; and Lieutenant Cook, R.N. of Addiscombe College, or at 32, Sackville Street; from whom any further information may be obtained.

The Earl of Galloway, Colonel Connelly, Commander R.M., Woolwich, and Charles Brodrick, Esq., have very kindly consented to their names being given as trustees, for payment into the Bank of England, on account of Messrs. Hewett, of such sums as shall be reported to them by the above Bankers, on or before the 1st of May next, to be payable on her account. Remittances before the 1st of May, to the said Bankers, should be made "To the Trustees, in behalf of the Widow of the late Capt. Hewett, R.N."

At Woolwich the following Memorial was circulated by Captain Hornby, the naval commander-in-chief.

IT being ascertained beyond a doubt that Her Majesty's ship Fairy, was lost off the coast of Suffolk, on the morning of the 13th of November last, and that every person on board perished.

This Memorial is presented to a generous public, to draw their attention to the unfortunate circumstances in which this awful calamity has placed the poor widows and orphans of the seamen and marines composing her crew.

It appears from the Ship's Books, that out of a crew of forty-five then on board, eighteen have left wives and children, who being now deprived of their natural support, this appeal is made in their behalf.

Any contribution, however small, will be of importance, when there are so many who need relief, and will be received by Mr. Breaks, at the Senior Officer's Office, in the Dock-yard, who has kindly consented to take the office of Treasurer, on this occasion.

The following are the names of persons lost in the Fairy, in behalf of whose widows and orphans the above was circulated.

William Hewett, captain, widow and eight children*

* All have been placed on the Compassionate Fund with an allowance of 16*l.* per annum, and Mrs. Hewett has been awarded a pension of 100*l.*

Richard Stevens, acting-master, single.
Frederick Chapple, assistant-surgeon, single.
Henry Johnson, clerk, (purser on half-pay,) leaves a widow and nine children.*
C. B. Adam, midshipman.
William Hewett, vol. 1st class, son of Captain Hewett.
George T. Gregory, clerk's-assistant and assistant-surveyor, leaves a widow and one child.†
Alexander Kennedy, boatswain, leaves a widow and five children.
John Dodridge, act.-carpenter, leaves a widow and one child.
Thomas Hornby, sergeant of marines, leaves a widow and two children.
Richard Morris, corporal of marines, leaves a widow and one child.
James Davey, ship's cook, leaves a widow and eight children.
Thomas Potts, S.M.M. leaves a widow and two children.
Richard Middlemiss, leaves a widow and one child.
John Bowen, leaves a widow and two children.
Edward Morris, C.M., wife on board.
Leave widows,—William Reile, Stephen McWicker, Henry Clarke, Henry Johnson, William Lambert, and William Ekins.
Single,—Thomas Westwood, Q.M., George Harwood, C.M.T., Thomas Fleming, C.F.T., William Johnson, A.B., Henry Davies, David Bowen, John Thomas. James Partington, private marines, Thomas Gottes, and Samuel Rich.
William Nixon, Edmund Whitehead, R. I. Arnold, Joseph Hartley, John Westwood, John Worthy, Matthew Muir, George Granger, Isaac Britt, George Bloomfield, Edward Munday, and John Davy, boy.

Names of the Tender's crew, in company with the Fairy the evening before she was lost.

Frederick A. Cudlip, lieutenant.
Moses Hunt, gunner's-mate.
George Sladden, Henry J. Connelly, George Cochrane, Edward Webb, William Crone, Amos Cole, and James Greenwood.

[We must now exert our humble efforts, in an appeal to our own readers in behalf of the widows with their orphan children, enumerated in the foregoing list. It has been the lot of the Editor of this Journal to serve very lately on board the Fairy, and he can testify from personal knowledge, as to the many well-behaved, deserving, and excellent men, who have unhappily perished with their worthy leader, and have left their wives and children to the care of the nation at large. Those who know any thing of the Naval service, are fully

* Five have been placed on the Compassionate Fund with an allowance of 10*l.* per annum, leaving *four unprovided for* in any way; the widow has been granted a pension of 45*l.*—it is a case of great distress.

† This is a case of peculiar hardship. Mr. Gregory was following the business of an artist, and residing with his wife and only son at Plymouth, realizing about 200*l.* a year, which he left to join the Fairy. Having the rating of Clerk's-assistant only in that vessel, his widow is not only not entitled to a pension, but is excluded from the benefit of the Compassionate Fund, which is applicable to the children of commissioned and warrant gunroom officers. Thus she is left *entirely unprovided for!* Admiral Sir Charles Adam has most kindly given her a presentation to Greenwich for her son, and she would gladly take any situation adapted to her condition in life.

aware that, the allotment out of a seaman's pay is at best but a small pittance, in his absence to support a wife and family,—but when that is suspended, when the husband returns no more as usual to those who are looking anxiously for him; when his presence, which sweetened their portion in life, which gladdened their hearts, and which brought with it contentment with their lot,—when this sacred charm is suddenly cut off, then hard indeed, is the fate of those bereft of such a blessing. They mourn over their loss, they mourn, for what this world cannot restore; but in the midst even of their grief, they are awakened to a sense of their real condition, by the bitter pangs of want,—destitute and forlorn they find themselves cast as strangers among us. Happily for them their case has been already taken up, and a partial attention to their condition, has served to avert immediate want; but, we would ask, and we hope that we shall not in vain ask for the assistance of our own subscribers, in finishing the good work of charity.

As there were grounds for believing that the Fairy might possibly have run for refuge to a port of Norway, the Salamander, Commander Henry, was directed to proceed to Flekkeroe, Stavanger, and Bergen, as noticed in our last, but returned without any tidings of her.

Before concluding, we may yet add, that the following is the last intelligence of the unfortunate vessel.

The Fairy is stated to have been seen by a fisherman,* before one A.M., on the morning of the 13th of November, under her topsails, courses, jib, foretopmast staysail and driver, her courses hauled up, but not furled, off Thorpness, just outside the Sizewell Bank, a moderate breeze and moonlight night.

The Fairy is also reported to have been seen between Lowestoft and Southwold, on the morning of the 13th, standing to the eastward on the starboard tack, under close reefed topsails,—and it is stated that a North Country brig saw her upset and go down, about four miles from land.

A fisherman named Benjamin Butcher, states, that at eleven A.M. on the morning of the 13th, being in his boat, about about five miles from Kessingland Church, this bearing about W.N.W., he passed close to a great number of papers, also a lug sail belonging to a gig, which appeared to have been but a short time in the water, but was unable to pick it up from the state of the sea.

A small box of papers, a triangular piece of board, the stand of an instrument, and the lid of a chart box, with the Fairy's name on it, the other things identified as her's also were picked up on the beach, on the coast of Suffolk, in the month of December.

A grating asserted to have belonged to the Fairy, and a spare oar were picked up on the 14th at 3 P.M., on the edge of the Brown Bank, by the Ebenezer fishing smack, south-east about thirty miles from Lowestoft.

At the time the Fairy might be supposed to have got underway, about midnight off Orford, the weather becoming threatening with a heavy sea from the south-east, it would have been the last quarter flood, and she would probably be set to the northward with the first of the ebb. The weather being so bad as to preclude all possibility of doing anything

* William Major, of Southwold.

at Yarmouth, or even of obtaining shelter there, it seems likely that the Fairy would be keeping her wind for Harwich when the event occurred, and the articles picked up, as also the rest of the evidence concerning her, afford strong presumption that her wreck is not far from the coast about Southwold. The grating and oar picked up on 14th, might have been drifted out to the offing, as it appears the wind shifted to the south-west, and remained so all that day.

The following advertisement we perceive has been published by the Admiralty, and distributed along the coast.

£50 REWARD.—Whereas, her Majesty's surveying vessel Fairy, commanded by Captain William Hewett, sailed from Harwich on the 12th of November last, and is believed to have been lost in the severe gale of the following morning, at a short distance from the coast of Suffolk.

My Lords Commissioners of the Admiralty, do hereby offer a REWARD of FIFTY POUNDS to any person or persons, who shall, within six months from this date discover, and first give notice to the Secretary of the Admiralty, of the situation in which her wreck lies, to be paid as soon as their lordships are satisfied by proper examination as to its identity.

By Command of their Lordships,

JOHN BARROW.

Admiralty, January, 1841.

DESTRUCTION OF MERCHANTMEN.

SIR.—Revolting to humanity and every principle of justice, as every honest man must consider the act of conspiring, wilfully and fraudulently, to destroy one's own ship, and incredible as may appear the execution of so vile a project, yet as plots of this deep die have sometimes been proved to exist, the welfare of society, as well as the interests of commerce require, that when offences of this flagitious character do occur, they ought to be thoroughly sifted and investigated; so that they may be brought fairly to light, and thus give a timely check to future mischiefs of the like nature, and kill the crocodile in the egg.

Without referring more particularly to the recent affairs of the Dryad and Isabel, which I hope may be properly dealt with; I will just observe that the intentional destruction of ships at sea, heinous as it is, is not a very new offence. I may mention, as a proof of this assertion, that some thirty years ago, an outward bound brig was scuttled off Brighton by the mate, by order of the captain; the mate, a youth of eighteen or twenty years of age, being told, on his promotion by the captain, that "if he acted to his (the captain's) satisfaction, *that was sufficient.*" As the thing happened within few miles of land, at break of day in the summer season, and within view of a fashionable beach, assistance was soon rendered, and the vessel run ashore; in which situation, when the tide ebbed, the augur-holes in *the run*, by which the deed was effected, were discovered high and dry.

This business of boring the bottom, as it took place on our own coast, was of course adjudicated at home. The case, from its singularity and enormity, made a great noise at the time, and though it happened so

long ago, an authentic summary of it would, I think, have its uses at the present moment.

The particulars here stated, however, are merely from recollection, and they are adduced with no other view than to shew, that as misdeeds of this kind are not without parallel, so they ought to be met with due vigilance by the parties concerned in the security of our wooden walls, and especially by "Poor Jack," who henceforth, I hope, under suspicious circumstances may be "allowed to think."

The late Lord Ellenborough observed, that, "it is fortunate for mankind, that great crimes are generally attended with corresponding folly and imbecility of mind, which leads to their detection." This maxim, however true and applicable to delinquency on *terra firma*, admits, I fear, of too many exceptions in regard to intentional ship-destruction, committed on the high seas.

For my own part, I cannot avoid coming to the painful conclusion, that there are many more nefarious schemes of this kind contrived and hatched on shore than are actually perpetrated, and for this reason:—because of the great apparent facility (coupled with the absence of all suspicion,) of accomplishing such an act without detection; the real difficulty consisting, I apprehend, in finding an instrument, occupying the station of captain, sufficiently depraved to undertake and go through with the job, and consequently, that there are more wilful and fraudulent, though undiscovered cases of wreck, &c., than there are of crimes of the like nature that are detected, exposed, denounced, and punished.

AN OLD TAR.

ROCK OFF CAPE DE GATTE.

SIR.—On reading over, just now, the report of the danger that we saw off Cape de Gatte, in August last, I have observed one or two mistakes from mis-copying, which I shall feel obliged if you will cause to be corrected at your earliest convenience.

These corrections can be made, thus:—

THE OUTER ROCK OFF CAPE DE GATTE.

In the October number of 1840, of the *Nautical Magazine*, at page 734, line 45, *for* "but I think it is most likely to be the *only* danger alluded to in the Book of Directions of 1750," *read* "but I think it is most likely to be the OUTER danger alluded to in the Book of Directions of 1750." And again, at p. 735, line 12, *for* "N.*W*.b.N.," *read* "N.*E*.b.N. by compass, that the white mark on the land to the eastward of the Cape, bore from this *outer* danger."

I feel positive that it was a sunken rock, as before described. It appeared quite green, and possibly might have had three or four fathoms water over it. I do not think it was longer than a line-of-battle ship's launch. The signal-man, on the fore royal yard, first reported it as being *close* on our PORT bow. The look-out man at the jib-boom end next saw it. I instantly put the helm a-port, and ran to the port side of the poop, with the master, and all the officers that were there, when we *all* saw it *distinctly*, on our beam, about two to three boats' lengths only from us. Had we not been under all sail, and going between eight and nine knots, I certainly should have hove to, and examined it.

I am &c., J. T. NICOLAS.

H.M.S. Belleisle, Jan. 18, *Devonport.*

(Continued from p. 53.—CL crew lost. CS crew saved. d drowned.)

VESSELS.	BELONG TO.	MASTER.	FROM.	TO.	WRECKED.	WHEN.
Active 150	———	———	Liverpool	Lisbon	Bay Biscay	Dec. CS
Active	———	Woodhill	Sundrlnd	———	Norfolk C.	Dec. 18 CS
Alert	———	———	———	———	Algoa Bay	Sept. 4 CS
America	St. Johns	Mackie	Quebec	Liverpool	C. Ireland	Dec. CS
Apollo	Bideford	———	Georgia	England	Long I.	Sept. 20 CS
Argo 155	———	———	Hartlepol	Petersbg	run down	—— 30 CS
Bristol	London	———	Stockton	London	foundered	Dec. CS
Buchanan	Sunderland	Bower	abandond	dismast'd	———	Sept. 25 CS
Britannia	Carlisle	Holyday	Mirmichi	Carlisle	abandoned	Nov. 28
Chirk Castle	———	Crowder	Liverpool	St. Johns	Off Banks	Oct. 30 9 d
City Edinbro' 160	———	Fearon	Sydney	Sydney	Flinders I.	July 10
Consolation	———	Blake	Tralee	Liverpool	Galway	Dec. CL
Crescent	———	Goldie	Singapor	London	Carimata	Aug. 20 CS
Delight	Waterford	———	———	———	E. Channel	Oct. 25 CS
Deveron	abandoned	crew tak	en off by	Agnes	Ewing	Nov. 27 CS
Economy 165	N. Shields	Borthwik	Quebec	Newcstle	abandoned	Nov. 29
Eliza	———	Buntlin	St. Johns	Halifax	Nova Scotia	—— 19 CS
Europe	———	Welborn	———	Sines	Torbay	Dec. 11
Falloden	———	Mould	London	Mirmichi	Nova Scotia	Sept. 18 CS
Frances Lawson	———	———	Pictou	Liverpool	abandoned	Dec.
Frends Regard 170	Whitby	Grainger	———	Rochest'r	Gunfleet	—— CS
Gaillardon	———	———	Hobart T	Calcutta	Coromandel	Mar. 21 CS
George	Ipswich	Broom	———	———	at sea	Nov.
Glencoe	Sunderland	Keith	Glasgow	Calcutta	Balimacan	Dec. 7 CS
Holcombe	———	———	Shields	run foulof	Lowestoff	Nov. 22 CS
Hopewell 175	Cork	———	Cork	sunk in	Pris. Chan.	Dec. 5 d
Horatio	abandoned	Sinking	Troon	Waterfrd	Carlingford	Sept. 19
Howard	Exeter	Bartlett	Mimichi	—— ——	Teignmth.	Dec. 7 1 d
Impartial	Sunderland	Logan	Cronstad	Newcstle	Lonstrup	—— 2 CL
Industry	Lynn	Manser	———	Lynn	R. M. Sand	—— 17 CS
Isabella 180	Newcastle	———	———	———	Gunfleet	—— 18
James Andus	Goole	Bromhd	Petersbg	Hull	Ystadt	—— 1 CS
James Pattison	London	Cromte	Sydney	London	by fire	Sept. 29 CS
Jarrow	London	Black	Sundrlnd	London	Gunfleet	Dec. 18 CS
John Duncombe	———	———	———	Sundrlnd	———	CS
Langley 185	———	———	Portsmth	———	Seal Sand	Oct. 19 CS
Leonides	Belfast	———	abandond	———	51 N. 31 W.	by Dykes
Lochiel	London	Garrick	Shields	London	Maplin	Dec. 18 CS
Lydia	St. Ives	Carr	Portreth	Swansea	not heard of	since Nov 12
Mangalore	———	———	China	London	Billiton	Aug. 24 CS
Margaret 190	Liverpool	———	Dalhouse	Leith	abandoned	Nov. 6
Mary	Shields	Paul	Mirmichi	———	Magdalens	Oct. 22 CS
Mary	Newcastle	———	Newcstle	Barcelon	C. France	Nov. 9. CS
Mary Ann and	Arabella	Crouch	Gibraltar	Cork	Tarifa	—— 24
Montrose	———	———	Quebec	London	P. Ebert	—— 13 CS
Ocean Queen 195	———	Nixon	London	VD. Land	Flinders I.	July 11 CS
Old Maid	abandoned	waterlgd	at sea	———	———	———
Pleiades	Whitby	Thomson	Quebec	abandond	46 N. 46 W.	Dec. CS
Plenty	———	Grey	———	———	Svn. Stones	—— 2 CS
Perthshire	———	Jones	Liverpool	Havana	Codling B.	—— 10 CS
RichmondCstl. 200	———	Temple	Quebec	———	Langley I.	Oct. CS
Symmetry	Liverpool	Taylor	Liverpool	Mirmichi	Nova Scotia	—— 25 CS
Transcendant	———	Butler	Jamaica	Baltimor	Colorados	—— 11 CS
Unity	Goole	Shooter	Goole	Lynn	R. M. Sand	Dec. 17 2 d
Unknown	No. 18 aban	doned 47	N 34 W	seen by	Voluna	Nov. 19
Unknown 205	passed	dismast'd	abandond	———	———	July 29
Unknown	topmast se	en just	above wa	ter off	Staggs Liz.	Dec. 28
Vanguard	———	———	P. Philip	Sydney	M. Leary	June CS
Venus	Falmouth	———	Jersey	Bridport	abandoned	Nov. 16 CS
Viscnt. Melbourne	Hartlepool	Williams	Hartlepol	Pillau	Ystadt	Dec. 1 CS
Wellington 210	Saltcoats	Thomson	Glasgow	Derry	Paterson R.	—— 1 CS
William 211	Bristol	Browne	Kiel	London	abandoned	Nov. 27 CS

STEAM DOCKS AT DEPTFORD.—One of the greatest improvements of the present day, and the most important to the metropolis and its noble river, is the projected magnificent docks for steamers at Deptford. There is no class of the whole community that will not feel the benefit of them, either in the avoidance of accident, the loss of life and property so common in the crowded pool, the saving of time and other inconveniences to merchants and travellers, and many other advantages which are too numerous to mention, but all of which render it most desirable that this important scheme should be carried into execution as early as possible.

ARIEL SHOAL.—*New Zealand.*—The following notice of a dangerous shoal off Poverty Bay, is important to seamen.

"A reef, even with the water's edge, and about twelve miles off the nearest point of land near Poverty Bay, has lately been discovered by the master of the Ariel, with the following bearings from the vessel:—middle of the reef, E. ½ N. one and a half distance, Gable End Foreland, N ½ W., Toto Muta, W. ½ S.

E. M. CHAFFERS, *Harbour-master,*
Tasmanian Gazette. *Port Nicholas, New Zeeland.*

SHOAL NEAR THE EQUATOR.—Captain Sprowle, of the Circassian, is stated to have seen a sand bank in the hollow of the sea, in lat. 1° S., long. 19° W., in the direct track of vessels to and from the South Atlantic. There are strong grounds in addition to this for concluding that there is some bank thereabouts. Our readers will no doubt remember the communicaton of Mr. Purdy in a former number of this work. (First Series, vol. for 1835, p. 641.) Some of the positions he alludes to come very near to that of the Circassian. We hope our seamen will be on the look out for this new danger, and transmit us any discoveries they may make concerning it.

PROCURING FRESH WATER FROM THE SEA.—We understand that this great object is at length in a fair way of being accomplished; viz. the supplying of ships with the entire quantity (of the purest kind,) of the daily consumption of water from the sea.

The process by which this end is to be obtained is so simple that there seems no reason to doubt its working on board ship equal to the full expectations of the projectors; and the produce of water in proportion to the consumption of fuel, has we learn been brought to one gallon for every half pound of coal, or twenty tons for one:—thus permitting the holds of our men-of-war to be disencumbered of water, and five per cent. of the weight thereof of coal carried in lieu.

We are informed that the process is founded upon an extremely beautiful idea, which it is most extraordinary should so long have escaped the notice of chemical and scientific men, being actually under the eyes of every body for many years; but certainly quite new, as extended and applied by the parties who have now brought the process to public notice, and who are Captain Sir J. Stirling, RN., and Mr. R. D. Middleton, lately a master in the merchant service.

We shall endeavour to obtain more particulars, and watch the progress of this most important measure, and communicate them to our readers.

CUMMINS'S MINERAL SYMPIESOMETER is an invaluable instrument to the mariner, as well as for mountain purposes. The fluid will retain its colour, cannot evaporate, neither will it congeal at a low temperature; the instrument is admirably adapted for carriage, it being very portable: is ready for use in a moment, without requiring any preparation; and is stated to be superior to any portable barometer yet invented. Another great advantage of it is, that the fluid is preserved without the assistance or inconvenience of a cork stopper, as in other instruments of the kind.

CHANNEL PACKET STATION.—*Dartmouth and Falmouth.*

SIR.—As you have published the Report of the Commissioners appointed to decide on the comparative merits of the ports in the Channel, with reference to a Steam Packet Station, in your magazine, I am sure you will not object to call the attention of the authorities, and of the Commissioners themselves, to an error in their calculations, which may have materially influenced their decision.

As regards safety, they do not consider Dartmouth to be superior to Falmouth; they allow that Falmouth is provided with a lighthouse, buoys, &c., which must all be done at Dartmouth, at great expense, if the Packets are moved there; but they consider that a gain of *two hours* in time, warrants the change and the attendant expenses. The following is their statement of the relative distances of Falmouth and Dartmouth.

"If to Falmouth we subtract a difference in the sea distance of 47 miles, or in time *six hours*, and add 82 miles mail coach, or in time *eight hours*, leaves in favor of Dartmouth *two hours*."

Now that they have made a very great mistake in their *mail coach* distance a reference, to any road book will show. They calculate all their distances on the West of England to Exeter, through which city all the roads run. The *old* post-office distances are as follows:—

Exeter to Falmouth . .	101 miles
Do. Dartmouth . .	35
Difference	66

The modern roads make the distances

Exeter to Falmouth . .	97
Do. Dartmouth . .	33
Difference	64

The Dartmouth distance can be reduced to thirty miles, if a *new road is cut*; but even then, the difference will be only sixty-seven miles, making an error of fifteen miles, or one hour and a half in time, in the calculation of the Commissioners, and leaving a difference of time in favor of Dartmouth of *half an hour* only, which half hour depends on the steamers always making eight miles an hour in all weathers, which it is well known they cannot do.

It certainly is worth considering again, whether for a *doubtful half*

hour it is worth depriving a town of an old-established benefit, and going to the expense which must be incurred to make Dartmouth safe. I am, Sir, &c.,

Totness, 26th Nov. AN OLD SUBSCRIBER.

LOSS OF THE BUFFALO STORE SHIP.—This ship was at anchor in Mercury Bay, New Zeeland, on the 28th of July, on which day it came on to blow a most powerful gale, and continued so for three days. Every preparation was made for encountering it by striking lower-yards, topmasts, and letting go all the anchors; but, notwithstanding all these precautions, the ship parted from them, and by the coolness and good management of her commander, Mr. J. Wood, she was run ashore, and all her crew saved, with the exception of one poor unfortunate seaman, named Moore, and a boy by the name of Cornes, both belonging to Chatham. The ship is now high and dry at low water, on the beach, and is completely gone to pieces; and the crew were fully employed in saving what stores and provisions they could from the wreck. A great portion of the ship's company was at the time in the woods, cutting and transporting timber; but on hearing of the loss of the ship, they went from Cooks Bay in an open boat, to the assistance of their shipmates, and in doing this they met with most severe weather, and were compelled to run into a creek to ride out a gale. At the date of the information, August the 6th, a ship was standing into Mercury Bay, to convey the officers and crew who had been encamped on the beach to Sydney, whence they would come to England. —*Hampshire Telegraph.*

LOSS OF THE SPEY PACKET.—Accounts have been received of the wreck of the Spey packet, Lieut. James, on her voyage to Havana, on the 24th of November last. The Spey, it appears, intended crossing the tail of the Great Bahama Bank, passing on it between Racoon Cay and Bonavista Cay, through an opening which had not fallen under the examination of our surveyors, instead of passing to the southward. Going at the rate of five knots, she was too fast on the reef to be got off with the utmost exertions of her crew. Happily no lives were lost, and, indeed, everthing of importance in the vessel was saved by the judicious and active measures of her commander.

NEW BOOKS.

POOR JACK.—*By Captain Marryat.—Longman, London.* 1840.

We can assure our readers that they will find Poor Jack a very pleasant Nautical companion, steering his course of duty through the sea of life beset with dangers and difficult navigation, starting from port in an obscure station, but by a careful attention to the helm and trimming his sails by the help of good advice and good example, he returns home to reap the fruits of honesty and good conduct.

PATCH-WORK—*By Captain Basil Hall, R.—N.Moxon, London,* 1841.

The high reputation of Captain Hall, which his peculiar style has long ago obtained for him as a Naval writer, is well sustained in the three very interesting volumes before us. There is indeed in them something of everything, every hue and colour of shreds and patches, but all forming a delightful and

and pleasing collection. We have not room to particularize, but shall snatch a leaf out of the Captain's book on some not distant occasion, and in the mean time recommend those who enjoy cheerful and animated pictures in narratives and descriptions to have immediate recourse to Patch-work.

SERMONS.—*By the Rev. W. Bennet, vol. 2.—Cleaver, London.*

We do not sit in judgment on these matters, but having already recommended the first volume to our Naval friends, and finding the second no less to our own taste, we may say to them, "you may gain instruction from its pages, and rejoice over the 'message' it contains."

PICTURESQUE VIEWS ON THE RIVER NIGER.—*Sketched during Lander's last visit in* 1832 *and* 1833.—*By Commander W. Allen, R.N., F.R.G.S., &c.*

And sketched we may add with great taste.

There is a charm about these views imparted to them by the artist, and the subject which is particularly captivating. It is impossible to look them over but with feelings of deep interest, excited by reflections on the benighted condition of the African race, who, in the midst of the profuse luxuriance which Nature has bestowed on a large portion, (if she has been niggardly in other parts) of their country, are still the victims of blind superstition, ignorance, and barbarism. The views are done in the best style of the lithography of the present day, and form a be-fitting ornament to the drawing-room table.

THE FRIEND OF AFRICA.

This little periodical which appears to have been got up for the express purpose of announcing the progress of the civilization of Africa, gives a full account of the expedition about to sail for the Niger, and which we shall avail ourselves of in our next number. The opening address makes a strong appeal to its readers, and the small sum of one penny per week should carry it far and wide. There seems to be every probability of finding in it the latest intelligence of the expedition, as well as the most interesting accounts from central Africa.

THE PRACTICE OF NAVIGATION AND NAUTICAL ASTRONOMY.—*By H. Raper, Lieut. R.N., Secretary to the Royal Astronomical Society.—Bate, London.* 1840.

(Continued from p. 895 of vol. for 1840.)

THE work before us commences with an introductory chapter, in which many elementary matters are explained, as are required by those who have only an acquaintance with the first rules of arithmetic. Passing over other matter, we would direct particular attention to the manner in which the raising of the trigonometrical canon is treated. The method used is simpler, easier, and will be better remembered, than what we find in the common books of navigation, where the student is directed to compare the side made radius to radius, an angle, to a side and vice versa. Here it is first shown under the head proportions,—how when four terms are proportional, three being given, the fourth may be found. The true nature of the trigonometrical canon being then demonstrated by referring to similar triangles, and the method of employing rightly the terms sine, co-sine, tangent, &c., being shown in a way that cannot well be misunderstood, it becomes almost impossible if the slightest attention has been paid, for the learner not to be now enabled to raise and solve the canons in the natural and legitimate manner, by comparing a side to a side, &c. We are not aware, that in all our reading we ever saw a subject better explained, and it is done too without any reference to pure mathematical knowledge. After having acquired this method, the common one which is generally given becomes very easy, and is likewise in a few words described to the reader. There now follows a passage in which the two methods are compared together, which we shall insert, not only as a specimen of the author's style, but to show what care is taken that nothing may be misunderstood, by those who have not the advantage of an instructor.

"Now, in the first place, the method proposed is more natural than the latter, because, when the two sides are taken together, their trigonometrical relation to each other is immediately perceived, which, when they are separate is not so apparent. Again, since the term sine or cosine is determined altogether by that side which we make radius, the term radius should, according to the natural progress of ideas, immediately precede the term sine, cosine, &c."—page 28.

After this introductory chapter, we come to what may be considered more peculiarly the object of this treatise. In general the cases into which the different sailings may be divided, are used merely as a vehicle for exercising the learner in plane trigonometry. That error has been avoided here, as every example which is given in the chapter which explains these matters, is a useful problem in navigation. We must not, however, thus hastily dismiss that part which treats of what is usually called great circle sailing. Most mariners are aware that this method alone gives the proper courses to be steered, in order to make most directly to any distant port to which the vessel may be bound; but it also shews something more. By this sailing, it may be ascertained how far a ship may deviate from her apparent direct course, in search of a wind, or from any other cause, without increasing the number of miles that she has to run, in order to reach her destination. Highly useful as this method of navigation appears, it has hardly ever been practiced, owing to the complicated form in which the rules have been laid down! Kerigan in his laborious work on navigation, published in 1826, has attempted to simplify the rules, but the directions which he gives are of too complicated a nature to be followed by the generality of seamen. In the work before us, all these difficulties are completely mastered, and great circle sailing is now rendered almost as easy as Mercator's. The plan which Lieutenant Raper adopts for solving the different cases by inspection is very short, and will be the method commonly used at sea. This is effected by a new and original table devised by himself, and will be hereafter of the utmost importance in the science of navigation. Without entering into any long account of this table, we shall only generally state, that by its aid spherical triangles can be solved much in the same manner, that plane right-angled triangles may be solved by the aid of what is commonly called the traverse table.

After the sailings, we have an excellent and original chapter on taking departures, in which the most accurate and useful methods of ascertaining distances from the land are clearly explained.

In that portion of the work which treats of nautical astronomy, no rule is omitted for any possible case that may occur, and the work concludes with a chapter explanatory of the proceedings that are necessary for the safe navigating of a ship; in short, pointing out the best manner of making a practical application of all the matters which have been previously treated.

Many of the tables are quite original. Table 3, which is entitled spherical traverse table, we have already alluded to as performing for spherical triangles all that the present common traverse table does for right angled triangles. This table will no doubt be very soon extensively used, more particularly if the author performs his promise of publishing it separately in a more extended form. After the logarithmic sines, &c., is given a table for interpolation, by which the seconds if required may be taken out at once. Table 61 is the log. sine square calculated to fifteen seconds of space, and six places of logarithms, and is used in all the rules given in nautical astronomy, the answer being always to be found in this table. All the tables used in clearing the lunar distance are so arranged, that allowance may either be made or omitted for the height of the barometer and thermometer. But it would be only trying the patience of the reader to proceed further, therefore, the last table to which we shall refer, is that containing maritime positions, although not placed last in this work, as it comes in its natural and legitimate order, immediately after the table of meridional parts. It has been too much the practice for authors to compile this table, principally from such books of navigation as have preceeded their own,

not paying sufficient attention to the longitudes more accurately ascertained, and to be found inserted in Foreign and English sailing directions;—in the proceedings of the geographical society, in the pages of this journal, or occasionally only in manuscript, either at the hydrographical office, or in the possession of individuals. But we are happy to find this is far from being the case here. We have carefully examined Lieutenant Raper's table, and it appears to us, to have been mainly compiled from those very sources of information to which we have already alluded, sources which have hitherto been too much neglected; in short, we may consider, that we have a compendium of what is actually known on this subject, so that we have now a starting point to go from in the future attempts that may be made, to determine with greater accuracy the longitudes of maritime places.

But we have other matters pressing on us for attention, and we must again defer the remainder of our notice of this valuable work for another number.

NEW CHARTS.

(*Published by the Admiralty.*)

THE NATUNA ISLANDS—*Surveyed by M. E. Paris, in the Corvette La Favorite, commanded by M. La Place.*—1831.

With this chart, a ship may approach the islands in any direction with confidence to within a few miles; indeed, we consider it an indispensible accompaniment to Horsburgh's account of the islands, as there are several minor points in which the two authorities differ in some degree, and one or two dangers appear that are not alluded to by Horsburgh.

THE STRAIT OF MALACCA—WESTERN PART.

A neat useful sailing chart,—the authorities for which appear to be for the Coast of Sumatra, Lieutenants W. Rose, and R. Moresby, the Strait of Calam, Capt. W. F. W. Owen, RN., Penang Island and Strait, Lieut. T. Woore, RN., the Arroa Islands and North Sands, Capt. D. Ross, of the Bombay Marine, and the whole adapted to the valuable Directory of Capt. Horsburgh.

THE STRAIT OF MALACCA.—EASTERN PART.

A similar neat chart; the authorities as before stated: the Siac river and the Straits adjacent to it forming a prominent feature.

THE ARROA ISLANDS WITH THE NORTH SANDS AND CALAM STRAIT.

Shewing on an enlarged scale the navigable approaches to these dangers, and a useful chart to vessels availing themselves of the advantage of entering the Malacca Strait by the secure passage afforded by the Calam Strait.

THE BASHEE AND BINTANG CHANNELS.

We congratulate our seamen, on having thus in a convenient and useful form even the meagre results of navigators as long as they are carefully digested.

This chart we find which is most important, as shewing the high road between Formosa and the Phillipine Islands, has been constructed from loose and conflicting authorities, as is shewn by its unfinished appearance, but great pains have been taken to render it as useful as possible, and it is decidedly more correct than any former publication of this part.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

CAPTAIN—R. Shepheard Triscott.

COMMANDER—T. H. Holman.

LIEUTENANT—J. Allen, (*a*).

(The above are the annual coast guard promotions.)

COMMANDERS—A. Murray, (*b*) and R. Duncan, commissions dated November 4th, 1840.

LIEUTENANTS—J. E. F. Risk, commission dated November 5th, 1840, to stand next in seniority to R. White. J. H. Woolward, the Hon. G. D. Keane, C. R. Carter, commission dated November 5th, 1840, and to stand on the list for seniority immediately after F. H. Stanfell. L. G. Heath, for passing best examination at the Royal Naval College.

PURSERS—C. Dealy, W. G. Tomlinson, R. T. Crispin, J. Brickwood, W. Stanway, J. Harkshaw, W. H. Dutton, R. L. Sutherland, E. A. Smyth, and H. H. Chimmo.

DEPUTY INSPECTOR OF HOSPITALS—S. J. Swayne.

APPOINTMENTS.

CAPTAIN—C. Wyvill to *Cleopatra*.

COMMANDERS—J. Richardson *(b)* to *Phœnix*—The Hon. H. A. Murray to *Wasp*—G. G. Loch to *Vesuvius*—A. Murray to *Hydra*—C. Birkett to *Bellerophon*—W. H. Hall to *Benbow*—W. Clark to *Edinburgh*—D. Curry to *Hastings*—W. Toby to *Powerful*—H. Bingham to *Princess Charlotte*—G. Lowe to *Revenge*.

LIEUTENANTS—F. P. B. J. Sulivan, and T. Heard to *Powerful*—E. W. Sanders to *Bellerophon*—C. D. O'Brien, and F. H. Stanfell to *Benbow*—G. E Patey to *Carysfort*—H. Stewart to *Caston*—G. J. R. Snow, and S. F. Short to *Cyclops*—J. Blackmore to *Edinburgh*—R. D. Stupart to *Gorgon*—J. A. Shears to *Hastings*—R. M. Floud to *Hazard*—H. Warren to *Pique*—A. Farquhar, R. Jenner, A. Cumming, R. Hoops, J. Allen, J. M. Smyth, R. White, G. Johnson, T. Whipple, L. P. Burrell, and G. H. Sunderland to *Princess Charlotte*—G. Wyke to *Revenge*—W. Chamberlain to *Stromboli*—M. H. Rodney, and W. Gennys to *Talbot*—R. Williams to *Thunderer*—J. M. Boxer to *Vesuvius*—W. K. O. Price, *Wasp*—W. F. M. Tollemache *Pelican*—E. N. Troubridge to *Southampton*—The Hon. C. Keane, and J. Sanderson to *Excellent*.

MASTER—R. B. Graham to *Hazard*.

MATES—L. P. Pigott, W. H. Bridge, from *Excellent*, and G. M. Greathead to *Indus*—C. J. F. Ewart, from *Excellent* to *Monarch*—L. C. H. Tonge to *Vernon*—O. Borland, and J. Borlase to *Excellent*—B. Young to *Phœnix*—M. Lloyd to *Hecate*—H. D. Chads from *Excellent* to *Endymion*—H. de Lisle do. to *Phœnix*—D. M'Leod Mackenzie do. to *Iris*—A. Key from *Cleopatra* to *Excellent*—G. S. Boys from *Buzzard* to *Vernon*—W. Willie to *Albert*, (st. v.)—F. Martin to *Ferret*—W. Baugh to *Impregnable*—E. Hill to *Indus*.

SECOND MASTERS—W. Diaper to *Athol*—W. Pettigrew to *Pluto*—G. Hicks to *Nightingale*—J. Scarlett (acting) to *Queen*.

VOL. 1ST CLASS—W. Babbington to *Indus*.

MASTER'S ASSISTANT—C. E. Maitland to *Phœnix*.

ASSISTANT SURGEONS—C. Daniell to *Apollo*—D. Thompson, and D. Whipple to Haslar hospital—A. Stewart to Portsmouth dockyard—D. A. Newman to Plymouth dockyard—J. Peters to *Pluto*—T. K. Beatty to *Queen*—J. Andrews to *Ranger*—R. Hayward to *Edinburgh*—T. K. Beattie to *Stromboli*—D. Gamble to *Revenge*—T. Miller to *Queen*—D. O'Callaghan to *Phœnix*—G. Rae, MD., to *Caledonia*.—W. R. Dalton to *Lizard*—O. Ferguson to *Nightingale*—J. Harvey to *Raven*.

CLERKS—W. Bateman (in charge) to *Lizard* v, Millingham, appointment cancelled—J. W. Cole (in charge) to *Nightingale*—T. Mundy (in charge) to *Ferret*.

Mr. Doyle, clerk of the Apollo, and Mr. Parminter, clerk of the Phœnix, have passed their examination for pursers.

NAVAL INSTRUCTORS—J. Addison, W. Witmarsh to Excellent to qualify.

COAST GUARD—*Lieutenant*—Richard Bayley Bowden to be chief officer.

Mates—William Henry Walters, and Charles Frederick Collett (1835) to be chief officer.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ÆTNA, 6, Lieut. com. J. Wilson, Liverpool.

ALBAN, (st. v.) Mr. J King, 24th Dec. put into Cork, 28th sailed.

ALBERT, (st. v.) Capt. D. Trotter, on way to Deptford.

APOLLO, (tr. sh.), Mr. A. Karley, left Portsmouth.

ASTREA, 6, Capt. J. Plumridge, Falmouth.

ATHOL, 28, (tr. sh.) Jan. 3d, left Portsmouth for Cork.

AVON, (st. v.) Lieut.com. R. Pritchard, Plymouth station.

BELLEISLE, 72, Capt. J. T. Nicholas, Plymouth.

CALEDONIA, 120, Capt. H. Eden, Plymouth.

CAMPERDOWN, 104, Capt. Sir H. L. Baker, Sheerness.

COMET, (st. v.) Lieut. F. Syer, Plymouth.

ENDYMION, 38, Capt. Hon. F. Grey, in Plymouth Sound.

EXCELLENT, Capt. Sir T. Hastings, Portsmouth.

FERRET, 10, Lieut. W. Thomas, home station.

HARLEQUIN, Chatham.

IMPREGNABLE, 110, Capt. T. Forrest, Plymouth.

INCONSTANT, 36, Capt. Pring, 28th December left Plymouth, with supplies for homeward bound.

INDUS, 84, Capt. Sir James Stirling, Portsmouth.

IRIS, 28, Capt. H. Nurse, 18th Jan. in the Downs on way to Portsmouth.

LIGHTNING, (st. v.) Lieut.-com. R. N. Williams, home service.

LIZARD, (st. v.) Lieut. W. G. Estcourt, Portsmouth.

LUCIFER, Capt. W. F. Beechey, surveying St. Georges Channel.

MASTIFF, (s.v.) Mr. G. Thomas, Woolwich.

MONARCH, 84, Capt. J. Chambers, Sheerness.

NAUTILUS, Lieut.-com. G. Beaufoy, Sheerness.

NIGHTINGALE, Lt.-com. W. Southey, home service.

OCEAN, 80, Capt. Sir J. Hill, Sheerness.

PELICAN, 16, Com. C. G. Napier, 18th Jan. in the Downs, on way to Portsmouth.

PHOENIX, (st. v.) Lieut. J. S. Dennis, Portsmouth.

PLUTO, (st. v.) Lieut. W. S. Blount, Woolwich.

POICTIERS, 72, Capt. J. Clavell, Chatham.

QUEEN, 110, Capt. J. W. Montague, Portsmouth.

RAVEN, 4, Lieut.-com. D. R. Mapleton, Sheerness.

SALAMANDER, (st. v.) Com. H. Henry, 30th Dec. at Sheerness from Norway in search of HMS. Fairy, 18th Jan. left Sheerness for Portsmouth.

SAN JOSEF, 10, Capt. J. N. Taylor, CB., Plymouth.

SAPPHIRE, (tr. sh.) Mas.-com. G. Cole, home service.

SAVAGE, 10, Lieut. J. H. Bowker, Plymouth.

SEAFLOWER, 4, Lieut.-com. N. Robillard, Portsmouth.

SNIPE, 2, Lieut.-com. T. Baldock, Ireland.

SOUDAN, (st. v.) Com. B. Allen, Deptford.

SPEEDY, 2, Lieut.-com. J. A. Wright, Sheerness.

SPITFIRE, Lieut.-com. J. Evans, Woolwich.

TWEED, 20, Com. H. Douglas, Portsmouth.

VERNON, 50, Captain W. Walpole, Sheerness.

VICTORY, 104, Capt. F. E. Loch, Portsmouth.

WILBERFORCE, (st. v.) Com. Allen on way to Deptford.

ABROAD.

ACHERON, (st. v.) Lieut.-com. A. Kennedy.

ACORN, 16, Com. J. Adams, Cape of Good Hope.

ACTAZON, 26, Capt. R. Russell, South America.

ALECTO, (st. v.) Lieut. com. W. Hoseason, Mediterranean.

ALGERINE, 10, Lieut.-com. T. H. Mason, East Indies.

ALLIGATOR, 26, Capt. Sir J. J. G. Bremer, East Indies.

ANDROMACHE, 26, Capt. R. L. Baynes, CB. Cape of Good Hope.

ARROW, 10, Lieut.-com. W. Robinson, Brazils and Cape of Good Hope.

ASIA, 84, Capt. W. Fisher, Mediterranean.

BASILISK, 6, Lieut. J. C. Gill, South America.

BEACON, (s. v.) Lieut.-com. Thomas Graves, Mediterranean.

BEAGLE, (s. v.) Com. J. C. Wickham, Australia.

BELLEROPHON, 80, Capt. C. J. Austin, 20th Dec. in bay of Marmorice.

BENBOW, 72, Capt. H. Stewart, 20th December at Marmorice bay.

BLAZER, (st. v.), Lt.-com. J. Steane, 12th Dec. left Madeira for West Indies.

BLENHEIM, 72, Capt. Sir H. F. Senhouse, East Indies.

BLONDE, 42, Capt. T. Bourchier, East Indies.

BRISK, 3, Lieut.-com. G. Sprigg, 24th Oct. arrived at St. Helena on her way to Cape.

BRITANNIA, 120, Capt. J. Drake, Mediterranean.

BRITOMART, 10, Com. O. Stanley, Australia.

BUZZARD, 3, Lieut.-com. R. T. Levinge, Coast of Africa.

CALCUTTA, 84, Capt. Sir J Roberts, CB. 20th Dec. in Marmorice bay.

CALLIOPE, 26, Capt. T. Herbert, S. America, or sailed for China.

CAMBRIDGE, 78, Capt. E. Barnard, 20th Dec. in Marmorice bay.

CAMELION, 10, Lieut.-com. G. M. Hunter, Brazils and Cape.

CARYSFORT, 26, Capt. H. B. Martin, CB. 11th Dec. arrived at Alexandria from the Levant.

CASTOR, 36, Capt. E. Collier, 30th Dec. Malta for Marmorice bay.

CHARYBDIS, 3, Lieut.-com. E. B. Tinling, West Indies.

CHILDERS, 16, Com. E. P. Halstead, 13th Nov. left Sangor roads on a cruize.

CLEOPATRA, 26, Capt. A. Milne, 18th Nov. left Barbados for Antigua.

CIO, 16, Com. S. G. Freemantle, Brazils and Cape Good Hope.

COLUMBIA, (st. v.) Master-com. A. Thompson, West India.

COLUMBINE, 16, Com. G. Elliott, 6th Aug. left Macao for the Bogue.

COMUS, 18, Com. E. Nepean, West Indies.

CONFIANCE, (st. v.) Lieut.-com. E. Stopford, Mediterranean.

CONWAY, 26, Capt. C. R. D. Bethune, East Indies.

CROCODILE, 26, Capt. A. Milne, 17th Nov. arrived at Jamaica, in twelve days from Bermuda.

CRUIZER, 16, Com. H. W. Gifford, East Indies.

CURACOA, 24, Capt. J. Jones, Brazil and Cape.

CURLEW, 10, Lieut.-com. T. Ross, 3d Nov. arrived at Cape of Good Hope, from Quillimaine.

CYCLOPS, (st. v.) Capt. H. T. Austen, CB., Mediterranean.

CYGNET, 10, Lieut. E. Wilson, coast of Africa.

DAPHNE, 18, Com. J. W. Dalling, 20 December in Marmorice bay.

DEE, (st. v.) J. Sherer, KH., West Indies.

DIDO, 18, Capt. L. Davis, CB., 20th Dec. in Marmorice bay.

DOLPHIN, 3, Lieut.-com. E. Littlehales, 17th Oct. at St. Helena, 1st Nov. at Ascension.

DRUID, 44, Capt. H. Smith, CB., 4th Aug. arrived at Macao, 10th sailed for the Bogue.

EDINBURGH, 72, Capt. W. W. Henderson, KH. 20th Dec. in Marmorice bay

ELECTRA, 18, Com. E. P. Mainwaring, South America.

EREBUS, Capt. J. Ross, particular service.

ESPOIR, 10, Lieut.-com. J. T. Paulson, arrived at Lisbon.—7th Jan. with damage

FANTOME, Com. Butterfield, Cape of Good Hope.

FAVORITE, 18, 19th Aug. at Sydney.

FAWN, Lieut.-com. J. Foote, 12th Oct. arrived at Rio from Buenos Ayres.

FIREFLY, (st. v.) Lieut. Winniett, West Indies.

FLAMER, (st. v.) Lieut.-com. W. Robson, West Indies.

FORESTER, 3, Lieut.-com. Norcock, 29th Aug. left Aura, for Princess Island, coast of Africa.

GANGES, 84, Capt. B. Reynolds, CB., 13th Dec. in Marmorice bay.

GLEANER, (st. v.) Lt.-com. J. Jeayes, West Indies.

GORGON, (st. v.) Capt. W. Henderson, CB, 20th Dec. in Marmorice bay.

GRECIAN, 16, Com. W. Smyth, 4th Oct. left Rio for River Plate, 17th returned.

GRIFFON, 3, Lieutenant-com. J. G. D'Urban, 19th Nov. arrived at Barbados.

HASTINGS, 72, Capt. J Lawrance, CB., Mediterranean.

HAZARD, 72, Capt. Hon. C. G. J. Elliott, 29th Dec. in Marmorice bay.

HECATE, (st. v.) Com. H. Ward, Mediterranean.

HECLA, (st. v.) Lieut.-com. J. Cragg, West Indies.

HERALD, 26, Capt. J. Nias, 24th Aug. arrived at Anger from Sydney, 9th Oct. arrived at Singapore, 19th sailed.

HORNET, 6, Lieut.-com R. Miller, 30th November left Jamaica for Chagres.

HOWE, 120, Capt. Sir W. O. Pell, 16th December at Malta, 30th sailed for Marmorice bay.

HYACINTH, 18, Com. W. Warren, 4th Aug. arrived at Macao, 6th sailed for the Broadway.

HYDRA, (st. v.) Com. A. Murray, 17th Dec. arrived at Malta from Beyrout.

IMPLACABLE, 74, Capt. E. Harvey, 20 Dec, in Marmorice bay.

JASEUR, 16, Com. F. M. Boultbee, 11 December, arrived at Cadiz from Gibraltar, 7th Jan. at Gibraltar.

JUPITER, (tr. sh.) Mas-com. R. Fulton, East Indies.

KITE, (st. v.) Lieutenant com. G. Snell, West Indies.

LARK, (s. v.) Lieut.-com. T. Smith, West Indies, 23d arrived at Havana.

LARNE, 18, Com. P. J. Blake, 4th Aug. arrived at Macao.

LILY, 16, Com. J. J. Allen, Cape of Good Hope.

LOCUST, (st. v.) Com. J. Lunn, 27th Dec. left Gibraltar for Malta.

LYNX, Lieut.-com. H. Broadhead, 1st Oct. at Accra.

MAGICIENNE, 24, Capt. F. T. Michell 20th Dec. in Marmorice bay.

MAGNIFICENT, 72, Commodore P. J. Douglas, Jamaica.

MAGPIE, (s. v.) Lieutenant-com. T. S. Brock, Mediterranean.

MEDEA, (st. v.) Com. F. Warden, 18 December left Malta for Levant, 23d at Malta.

MELVILLE, 72, Capt. Hon. R. S. Dundas, East Indies.

Magera, (st. v.) Lieut.-commander C. Goldsmith, 20th Dec. arrived at Malta from Marmorice.

Modeste, 18, Com. H. Eyres, East Indies.

Niagara, 20, Capt. W. Sandon, Lake of Canada.

Nimrod, 20, Com. C. Barlow, 4th of August, arrived at Macao, 6th sailed for Chusan.

Orestes, 18, Com. P. S. Hambly, 22 July, left Callao for Arica, 28th August returned.

Partridge, 10, Lieut.-com. W. Morris, (a) 23d arrived at Rio from Bahia.

Pearl, 18, Com. C. Frankland, 28th Oct. left Bahia.

Persian, 18, Com. W. Quin, 27th Aug. arrived at Accra, 27th sailed for Ascension.

Pickle, 5, Lieut.-com. F. Holland, 16th Nov. left Port Royal for Bermuda.

Pilot, 16, Com. G. Ramsay, Nov. 5, left Jamaica for Carthagena.

Pique, 36, Capt. E. Boxer, 22d Dec. arrived at Malta under jury masts, having been obliged to cut away her masts at anchor in the bay of Acre.

Powerful, 84, Commodore Sir C. Napier, cb., 13th Dec. in Marmorice bay

President, 50, Capt. W. Broughton, South America.

Princess Charlotte, 104, Capt. A. Fanshawe, 20th Dec. in Marmorice bay.

Prometheus, (st. v.) Lieut.-com. T. Spark, 16th Dec. arrived at Malta from Marmorice.

Pylades, 18, Com. T. V. Anson, East Indies.

Racehorse, 18, Com. Hon. E. A. Harris, West Indies.

Racer, 16, Com. T. Harvey, West Indies.

Rattlesnake, (tr. sh.) Mas.-com W. Brodie, East Indies.

Revenge, 76, Capt. Hon. W. Waldegrave, (a) 12th Dec. in Marmorice bay.

Ringdove, 16, Com. Hon. K. Stewart West Indies.

Rodney, 92, Capt. R. Maunsell, cb., 12th Dec. in Marmorice bay.

Rolla, 10, Lieut.-com. C. Hall, coast of Africa.

Rose, 16, Com. P. Christie, Aug. 26, left Rio for River Plate, 17th Oct. left for Monte Video.

Rover, 18, Com. T. W. C. Symonds, West Indies.

Samarang, 26, Capt. J. Scott, South America.

Sappho, 16, Com. T. Frazer, West Indies.

Saracen, 10, Lieut-com. H. W. Hill, coast of Africa.

Satellite, 18, Com. J. Robb, West Indies.

Scorpion, 10, Lieut.-com. C. Gayton, 3d Dec. Mediterranean.

Seringapatam, 42, Capt. J. Leith, West Indies.

Skipjack, 5, Lieut.-com. H. Wright, 30th Oct. left Jamaica for Carthagena.

Southampton, 50, Capt. W. Hillyar, Brazils and Cape, of Good Hope.

Sparrow, 10, Lieut. com. G. Tyssen, Brazils.

Spider, Lieut. com. J. O'Reilley, Brazils.

Stag, 46, Commodore T. B. Sulivan, 4th Oct. left Rio for River Plate, 12th left Monte Video for Buenos Ayres.

Starling, (st. v.) Lieutenant com. A. Kellett, 15th Oct. arrived at Singapore.

Stromboli, (st. v.) Command. W. J. Williams, Mediterranean.

Sulphur, (s. v.) Com. E. Belcher, 15 Oct. arrived at Singapore.

Talbot, 26, Capt. H. J. Codrington, Mediterranean.

Tartarus, (st. v.) Lieut. com. G. W. Smith, West Indies.

Termagent, 10, Com. H. F. Seagrim coast of Africa.

Terror, 10, Com. F. R. M. Crozier, particular service.

Thunder, (s. v.) Com. E. Barnett, West India.

Thunderer, 84, Captain M. F. F. Berkeley, 12th Dec. in Marmorice bay.

Trinculo, 16, Com. H. E. Coffin, 20th December arrived at Gibraltar from Madeira, Jan. arrived at Lisbon.

Tyne, 26, Captain J. Townsend, Mediterranean.

Vanguard, 80, Capt. D. Dunn, 12th Dec. in Marmorice bay.

Vestal, 26, Capt. T. W. Carter, 17th Nov. left Jamaica for Honduras.

Vesuvius, (st. v.) Com. G. Loch, Mediterranean.

Victor, 16, Com. W. Dawson, 30th October left Jamaica for Vera Cruz.

Volage, 26, Capt. H. Smith, China.

Volcano, (st. v.) Lieut-com. J. West, West Indies.

Wanderer, 16, Capt. H. J. Denman, coast of Africa.

Wasp, 16, Com. G. Mansell, 29th December refitting at Malta.

Waterwitch, 10, Lieut-com. H. J. Matson, Cape of Good Hope.

Weazle, 10, Lieut. com. W. Edmonstone, Mediterranean.

Wellesley, 72, Capt. T. Maitland, China.

WINCHESTER, 50, Capt. J. Parker, West Indies.

WIZARD, 10, Lieut.-Com. T. F. Birch, 5th October at Rio from a cruize.

WOLVERINE, 16, Com. W. Tucker, 24th August arrived; at Accra, 24th August, and sailed on a cruize.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Stonehouse, the lady of Rear-admiral Thomas, of a daughter.

At Southsea, on the 24th Dec. the lady of P. E. Brenan, Esq., surgeon of H.M. brig Dolphin, of a son.

Marriages.

At Bosworth, the 29th December, the Rev. Charles Bucknill, to Mary Sophia, daughter of Rear-admiral Mason, CB.

At Bryanston-square, Wm. T. Grey, Esq., eldest son of the late Hon. Col. W. Grey, to Maria, daughter of Capt. Shireff, RN., superintendent of Deptford dock-yard.

At Reading, 22nd Dec. Mr. H. Horlock, of Southampton, to Caroline, eldest daughter of Lieut. Dutton, RN. of Southampton.

At St. Ann's, Westminster, Mr. H. Clark, son of Capt. Clark, RN. of Guernsey, to Jane, grand-daughter of the late J. H. Jones, commander RN., many years acting-governor of Bombay.

At Westbourne, the 5th January, L. How, Esq., Wanstead, Essex, to Emily Ann, daughter of Capt. B. S. Bluett, KH. RN. of Prinsted, Sussex.

On the 5th January, at Bideford, E. J. Pridham, Esq., surgeon of Exeter, to Catherine Helena, daughter of the late W. Pridham, Esq., surgeon RN.

At Padstow, Cornwall, the 5th Jan. the Rev J. H. Williams, BA., Oxford, to Eliza, daughter of D. Williams, Esq. Inspecting-commander of Coast Guard.

At Liverpool, 22nd Dec. W. B. Prichard, Esq., CE., of Holywell, Flintshire, to Lavina, daughter of the late Mr. M. King, RN.

At Taunton, 5th Jan. Commander J. W. Aldridge, RN., to Ann daughter of the late C. Knight, Esq.

At Adelaide, South Australia, the 9th July, G. M. Stephen, Esq., son of Judge Stephen, to Mary, daughter of Captain Hindmarsh, KH., RN, the Governor of Heligoland.

At Rio, Lieut. A. Heseltine, RN, to Georgina, daughter of Lieutenant J. R. O'Reilly, RN.

At Northwood, Isle of Wight, 12th Jan. Lieut. Morris, Coast Guard, to Harriet, daughter of Mr. W Smith, customs, West Cowes.

Deaths.

On the 3d Jan. in London, aged 65, Rear-admiral Sir P. B. Vere Broke, Bart., KCB.

At West Cowes, the 20th Dec. Mary, widow of the late S. Osborn, Esq., admiral of the Blue.

At Thorpe, Capt. F. Banks, RN., aged 74 years.

At Weymouth, the 7th Jan. Sophia, widow of the late Sir W. H. Mulcaster, RN.

On Dec. 30th, at Leamington, Capt. S. G. Pechell, RN., of Berely, Hants.

At Penzance, on the 18th Dec., Commander W. Burgess, (1794,) RN., aged 89 years.

On the 18th August last, after a few days' illness, on board HMS. Wellesley, in the China Seas, C. W. Newbolt, Esq. mate, son of the late Sir John Newbolt, chief judge, at Madras.

At Gillingham, Kent, Dec. 28th, Mrs. P. Sturgess, mother of the late Lieut. W. Sturgess. RN., aged 87 years.

At Keyhaven, Hants, Dec. 16th, Com. J. C. Symonds, RN., aged 50 years.

At Malta, Dec. 23rd, Mr. Augustus F. Shawe, midshipman, of Revenge.

At Malta, suddenly, on 23d ult., Lucy wife of Dr. J. Allen, RN.

On the 29th ult. on board the Asia, at Malta, Mr. J. Allen, son of the above Dr. Allen.

At Southsea, Dec. 26th, Ann, the wife of J. B. Hutchings, Esq. purser.

At Worthing, Jane, daughter of the late Vice-admiral P. Woodhouse, in her 20th year.

At Southsea, aged 86 years, Dr. Seeds, the senior surgeon in the Navy, on the active list. The deceased was surgeon of the Cæsar, in the 1st of June action.

On the 5th Jan. at St. Pancras, suddenly, Charles Newman, Esq. RN., aged 64 years.

At Portland-place, Gosport, the 6th of Jan., Mrs. Moubray, relict of Lieut. Moubray, RN.

On the 15th Dec. at Nairn, J. Rose, Esq., commander RN.

On the 18th Dec. at Turriff, Alexander Ingram, Esq. commander RN.

METEOROLOGICAL REGISTER.

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

From the 21st of December, 1840, to the 20th of January, 1841.

Month Day	Week Day.	Barometer.		Fahr Ther. In the Shade.				Wind. Quarter.		Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P.M.
		In Dec.	In Dec	o	o	o	o						
21	M.	30·23	30·25	33	33	31	35	NE	NE	2	2	o	b
22	Tu.	30·31	30·27	30	30	27	31	E	E	5	2	bc	b
23	W.	30·15	30·08	18	28	16	29	NE	NE	1	1	b	b
24	Th.	30·05	30·09	28	32	22	34	NE	NE	2	1	bc	b
25	F.	30·30	30·32	20	28	16	30	NE	NE	1	1	bf	bf
26	S.	30·53	30·54	26	28	17	29	SE	N	0	2	o	o
27	Su.	30·62	30·59	29	31	26	32	S	E	0	1	o	o
28	M.	30·39	30·34	29	30	27	31	E	E	4	2	o	bc
29	Tu.	30·24	30·25	23	28	19	35	SW	W	2	3	of	o
30	W.	30·40	30·32	24	31	20	34	NW	SW	2	1	b	bcmr 4)
31	Th.	29·88	29·90	39	41	35	42	W	NW	3	4	bcr (1)	bm
1	F.	29·95	29·92	39	43	34	44	W	W	2	2	bc	bcd 4)
2	S.	30·06	30·08	37	39	36	42	N	NW	2	2	b	bc
3	Su.	29·29	29·17	33	34	32	37	W	NW	3	6	betlhrs (2	qbc
4	M.	28·96	29·02	25	33	22	34	E	NE	1	2	bc	os (3) (4)
5	Tu.	29·27	29·27	30	31	27	32	N	NE	6	3	qos (2)	qos (3)
6	W.	29·50	29·54	24	27	22	29	E	E	2	2	bc	o
7	Th.	29·65	29·68	13	25	11	24	E	NE	1	1	b	b
8	F.	29·84	29·85	14	15	10	16	N	S	1	1	f	b
9	S.	29·70	29·57	9	28	4	30	NE	S	1	4	b	bcs 4)
10	Su.	29·23	29·14	31	36	23	37	S	SE	3	1	qos (1	o
11	M.	28·87	28·91	33	34	28	36	SW	SE	4	2	bcs 1)	bcr (4
12	Tu.	29·35	29·47	33	35	29	36	W	W	3	2	bcs (1)	b
13	W.	29·54	29·32	32	32	26	38	SE	E	2	4	od 2)	os (3)(4)
14	Th.	29·36	29·25	33	32	30	34	E	NE	2	3	o	os (3)(4)
15	F.	29·57	29·63	33	33	30	36	N	N	3	2	bcs (1	bc
16	S.	29·63	29·49	37	44	29	51	S	S	2	6	or 2)	qor 3)(4
17	Su.	29·62	29·60	47	50	45	51	SW	SW	5	6	bc	op (3)
18	M.	29·72	29·68	45	46	44	47	SW	NW	2	2	or 2)	or 4)
19	Tu.	29·77	29·82	34	35	32	36	NE	N	3	4	oprs(1) (2	oprs (3 4)
20	W.	30·05	30·05	33	32	28	33	NE	N	5	4	bcps(1) (2	bc

DECEMBER—Mean height of the barometer = 30·082 inches : mean temperature = 31·4 degrees : depth of Rain and melted Snow fallen = 0·45 inches.

Note.—On the 3rd of January, 1841, at 7 A.M. Greenwich and neighbourhood were visited by a tremendous storm of thunder and lightning, attended with wind and hail! The night of the 8th, and the morning of the 9th were excessively cold, at Greenwich, the thermometer sunk to 4 degrees, or 28 below the freezing point: at the same time, Mr. Dent observed one of his thermometers at Kensington to be at 1 degree, or 31 degrees below freezing! which is the greatest cold experienced in these parts since the memorable 20th of January, 1838.

TO OUR FRIENDS AND CORRESPONDENTS.

We have been reluctantly obliged to defer the reply of LIEUTENANT EVANS on Shingle. The late despatches have also occupied our space so much as to interfere with our Bermuda, and Nicaragua papers, which we shall make up for in our next number.

A SHIPWRIGHT of 1812, if possible in our next,—but the controversy must end.

The papers from the ASIA have reached us. We shall be glad of a continuance on any other matters.

Remarks on the Passage up and down the China Sea.—*By Commander P. J. Blake, H.M.S. Larne.*

Although the passage up and down the China Sea, against either Monsoon is now constantly performed, it may be useful to state a few remarks derived from my own observation, as well as from the experience of several captains of "opium clippers," whose constant practice of late years has given them a very tolerably perfect knowledge as to the best method of effecting the passage up and down the China Sea, between Sincapore and Macao in either Monsoon.

In beating *against*, or running *with* the strength of the Monsoon *up* or *down* the China Sea, ships should always pass to leeward of the Paracel Islands and shoals, as well as of the "Prata," or the "Scarborough Shoal," should they be near them, on account of the invariable set of the current to leeward. An exception may be made in beating up against the north-east Monsoon, after reaching near 14° north, as there is an extent of sea room, and a ship must get well eastward towards the coast of Luconia before she can fetch Macao.

In running down the China Sea with the north-east Monsoon, the direct line mostly adopted is nearly mid-channel between Hainan and the Paracels, holding rather to the latter where a southerly current of thirty, forty, and fifty miles a day is usual, and between 14° and 11° north, I have known it reach to sixty miles in twenty-four hours. Thence making the coast of Cochin China, about Varela, and shaping a course south-ward, so as to pass thirty or forty miles outside of Pulo Sapata, from whence the course to Sincapore is clear, giving the "Anambas"* a berth of about forty miles, and always, if possible, sighting Pulo Aor to ensure the reckoning,—more especially should the weather be thick, when the lead should be constantly attended to.

In running up the China Sea *with* the south-west Monsoon, there can be no doubt but the *outer* passage by the Macclesfield Bank is the best, thus passing to leeward of the Paracels with a clear sea. This Monsoon generally hangs very southerly during June and July, viz. from S.S.E. to S.S.W., the current always setting in the opposite direction with a velocity proportioned to the strength of the wind. Although the *inner* passage by the coast of Cochin China is recommended by Horsburgh, for weak or leaky ships, I think, on his own shewing, it is to be avoided, he having adopted that passage, and very narrowly escaped being wrecked on the North Shoal of the Paracels in July,—on which, in the same gale a Portuguese ship was lost. This was during a gale blowing severely at north-west, out of the Gulf of Tung-quin, which is not unusual to happen at this period of the year, while a steady south-west wind is blowing in the middle of the China Sea. Owing to the strength of the southerly current, both his own and the Portuguese ship were set down towards the north-west part of the Paracels, when trying to weather them, and this same circumstance has *twice* happened within the last three years:—two English ships, the "John Bannerman," and the "Martha," having been wrecked on the same shoal owing to the same cause. In running with the south-west Monsoon by this *inner* passage

* See a beautiful chart of these just published by the Admiralty.

in thick weather, the current, varying as it does in velocity and direction, must render it precarious as to shaping a course with precision or safety.

On leaving Macao to proceed down the China Sea *against* the south-west Monsoon, it is advisable to make the best of your way southward for the Macclesfield Bank, keeping in from 113° 30′ to 116° 30′ east, and taking every advantage of the least veering of the wind.

The "Larne" sailed on the 30th of May from Macao Roads, for Sincapore, Penang, and Madras. Had moderate breezes at east and south-east for forty-eight hours; when having made nearly a due south course from the Ladrones about 250 miles, the wind drew to southward, and blew very hard with heavy squalls. This obliged us to stand eastward under close reefed topsails, and reefed courses. It moderated P.M. 2nd June, having found by our observed latitude and chronometer at noon, that the current had set us north, 28° east, fifty-one miles in twenty-four hours! With the wind at S.S.E., S.E.b.S., we had recovered our lost ground on the 4th, from which day until the 11th, we made a course to south-eastward, the wind invariably between S.S.W. and S.b.E. On this day at noon, in latitude observed 14° 13′ north, longitude chronometer 116° 25′ east,—tacked to westward. By standing a few hours to south-east each day, in order to make up for the northerly current, we made nearly a due west course for the coast of Cochin China until the 16th, when we made the land about Cape Varela, which is very high with a curious conical hill inland. We here felt the additional strength of the current northward, which we found at noon the 17th had set us north, 46° west, forty-three miles. We at once stood away again to south-east, the wind still sticking south and S.S.W., and on the 20th at noon, we were within 10m. by the reckoning, of the "Investigator Shoal," but perceived nothing, the wind being light and a perfectly smooth sea. Tacked to north-west for twenty-four hours, and on the 23rd had grappled slowly to south-west, about 60m.

We were now nearly in what I termed the turnpike-gate of the China Sea, viz. the narrowest part between Pulo Sapata and the West London Shoals. Here a fine easterly breeze sprung up, not more to our surprise than our gratification, with which we made way to south-west, and on the 25th had reached 7° 34′ north, and 108° 14′ east. Here the wind again became southerly and light for a day, but opening as we now did, the Gulf of Siam, we had light breezes west, W.N.W. and north-west, until the 1st of July, which left us nearly 150 miles to the southward. Here having again shut in the Gulf of Siam, the winds became southerly, light and variable, as before. On the 2nd of July saw Pulo Timoan S.S.W., seventeen or eighteen leagues. From this day to the 8th, we were beating to the southward, in sight of these islands, harassed by very light southerly winds, and a daily current to the northward, of from twenty to twenty-five miles, retarding our progress. I thought we were doomed to a perpetual view of Pulo Timoan, Pulo Aor, and Pulo Pisang, nor was it until daylight of the 9th, that they had disappeared to northward, though we could distinguish the peak of "Pulo Tingy" to north-west that day at noon. After noon we made out Biatang Hill, Barbreit, and False Barbreit, a joyous sign of ap-

proaching Sincapore. Working to southward, wind still light and southerly, and holding on by the stream anchor when calm,—current two knots and a half N.b.E. On the evening of the 10th anchored in twenty-four fathoms, Barbreit Hill W.S.W.; and at 3 A.M. the 11th, started with a fresh breeze off the land at north-west, and stood for Sincapore Straits. At noon passed Pedro Branco, and at 5 P.M. anchored in Sincapore Roads in ten fathoms, forty-two days from Macao. Flag-staff on the hill N.W. ½ N.

I conceive we had thrown away at least eight or nine days in our passage from Macao, for want of experience in making it. We should not have approached the coast of Cochin China as we did, nor have stood over so far eastward as the "Investigator Shoal." Had we made shorter tacks hereabouts, keeping the middle passage between the coast of Cochin China and the eastern shoals, we should undoubtedly have gained several days by it. The increased strength of the current in with the coast, we found spoke for itself, and after tacking to north-west from the "Investigator Shoal," we *could only* stand on the larboard tack, on account of the shoals southward, viz. the "Dhaulle Shoal," and the "east and west London Shoal," with the wind sticking dead at south-west. We ought also to have made the "North Natunas," and then got to south-westward, as the winds out there are much fresher and steadier than more eastward towards the Malay coast, where we experienced them so directly southward light and variable.

I gathered the foregoing information from comparing the abstract of reckonings with an opium vessel, whose captain had had much experience, and which arrived at Sincapore from Macao the same day as ourselves, although she had left *ten days after us*, and the advantage gained by the track she pursued as above described, in contradistinction to our own which was obviously manifest.

The passage down the China Sea, against the south-west Monsoon, I conceive to be more tedious than difficult. With the exception of the "*Blow*" we had forty-eight hours after leaving Macao, we had nothing to call a breeze, but the following abstract of winds and currents each day, will shew how tedious and tardy was our progress.

The direct course from Macao to Sincapore is, nearly as possible S.S.W. (true) distance 1,350 miles.

Sailed from Macao Roads for Sincapore, the 30th of May, 1839.

Days.	Winds.	Direction of Current.	Miles.
May 30	E.S.E, east, E.b.S.		
31	E.b.S., E.S.E. (blowing hard)	Little or	none
June 1	S.E. S.S.E. (blowing hard, heavy squalls)	No observation	
2	S.E.b.S., S.E.	N. 28 E.	50
3	S.E., S.S.E., S.E.	N. 26 E.	15
4	S.E.b.S., S.S.E., S.E.	N. 10 W.	23
5	S.E., S.S.E, S.b.E.	N. 80 E.	30
6	S.b.E., S., S.b.W.		
7	S., S.b.E., S.b.W.	N. 67 E.	28
8	S.S.W., S.b.W., S.S.W.	N. 48 E.	25
9	S.S.W.	N. 88 E.	27
10	S.S.W., S.W.b.S.	N. 34 W.	24

Days.	Winds.	Direction of Current.	Miles.
June 11	S.S.W., S.W.b.W., S.W.b.S.	East.	11
12	S.b.W., S.W.b.S., S.S.W.	N. 14 W.	13
13	S.W., S.W.b.S., S.S.W.		
14	S.S.W., S.W.b.S.	S. 86 E.	14
15	S.S.W., S.b.W.	N. 66 E.	20
16	S.b.W., south.	N. 56 E.	12
17	S.b.W, S.b.E.	N. 46 W.	43
18	S.S.W., S.b.W.	N. 22 W.	29
19	S.b.W., S.S.W.	N. 40 W.	28
20	S.S.W., S.W.b.S., S.W.	S. 74 E.	29
21	S.W., S.W.b.S., S.b,W.	N. 48 E.	9
22	S.b.W., south, calm.		
23	Calm, S.E.b.E., E.S.E.	West.	13
24	E.b.S., S.E.b.E., calm.	S. 55 W.	12
25	Variable, easterly, south.	West.	18
26	S.S.W., S.W., S.W.b.S.	N. 39 W.	18
27	Variable, west, W.N.W.	N. 57 E.	17
28	N.W., north westerly.	S. 46 E.	18
29	Westerly, variable, S.W.	S. 8 E.	14
30	S.W., westerly, northerly.	S. 22 W.	19
July 1	Variable, westerly, S.S.W.	S. 22 W.	9
2	S.S.W., S.b.W., S.b.E.	N. 31 W.	20
3	S.S.W., S.b.E., S.E.	N. 6 W.	20
4	S.S.E., southerly, S.E.	N. 18 W.	20
5	S.S.E., south, S.b.W.	N. 35 W.	33
6	S.b.E., south, S.b.W.	North	30
7	South, S.b.E., S.S.E.	N. 22 E.	16
8	S.S.E., south, variable.	N. 8 E.	20
9	Variable and southerly.	N. 11 W.	25
10	South, S.b.E., S.S.W.	N. 11 E.	31
11	N.W., variable, southerly. Anchored in Sincapore Roads, 5 P.M.		

Thus it appears, that of the *forty-two* days passage from Macao to Sincapore, we had the wind dead on end for about *thirty-eight* days, and that the aggregate amount of the currents was 580 miles against us during the passage.

NOTES ON AMOY HARBOUR, CHINA.—*From the Remarks of Capt. P. J. Blake, H.M.S. Larne.*

ON the morning of the 29th of November, 1838, we left our anchorage* at the entrance of Amoy, and fetched through the passage formed by Little Goeve and the five islands to the northward into Amoy Bay in fourteen fathoms mid-channel, steering north-west. Entered a fine and capacious bay; steered across it N.W.b.N. four or five miles for Amoy island and city. At noon anchored in ten fathoms a little southward of the city, half a mile from the shore. A large fine mandarin station-house N.N.W. Island of Colongsu W.b.N. The Larne's anchorage was in 24° 28′ N., 118° 12′ E. This is a fine harbour. The channel abreast the city has from eleven to fourteen fathoms between it and

* Caw-chat rock S.W.b.W., Great Goeve west, and Chapel island S.b.E.

Colongsu; it then turns to north-east when for upwards of a mile and a half innumerable trading junks were moored in tiers abreast the wharfs in from ten to sixteen fathoms, and presented a busy, bustling commercial scene.

This being the capital of Fokien province, and the best harbour on the coast, it concentrates the whole maritime trade of the north-east and south-west provinces of the Celestial Empire. Any number of ships might moor inside here, doubly land-locked and sheltered in all directions. We had much trouble in procuring supplies, and the mandarins were shy of communication. To induce us to go away they at last brought us some water, poultry, pigs, and firewood, the last being scarce and dear; one picul (133 lbs.) cost nine dollars, and that small and stunted fir trees clipped in pieces.—Poultry was scarce; and no bullocks to be had.

As it is contrary to the laws of the empire to encourage intercourse with foreign vessels, supplies are withheld. There are, no doubt, plenty in the surrounding villages on the main land which are conspicuous by fine flourishing groups of trees in the valleys, in various directions throughout this fine extensive bay and harbour. Those we received were sent gratuitously by the head mandarin or governor, on the express condition that we would go away, which we were glad to do when the objects which led us here were accomplished. These were to set up the rigging, fore and aft, which had become very slack in the late blowing weather, and to fit slings for the foreyard, the chain having snapped. It was only by assuring the mandarins that we could not go without water, and that we would depart when completed, that they consented to send us off a second turn in small tank boats, holding about four tons each. Their anxiety to get us away was extreme. On the 3rd of Dec. we stood out of the bay, and met the same blowing squally weather from the north-east, against which we commenced beating up the Formosa strait.

We shall here take the opportunity of recording the interesting narrative of the late affair at Amoy, which occurred on the visit of H.M.S. Blonde to that place last summer, as related by Mr. Thom.

On Thursday, July 2d, 9 AM., having been ordered, with Captain Bourchier, of H.M.S. Blonde, to repair on board the Admiral, a despatch said to be of great importance was delivered to us, which we were to deliver into the hands of the Chinese admiral of the station, or supposing him to be absent, to deliver the same into the hands of the highest local authority resident at Amoy, so as to secure its safely reaching the dignitary for whom it was intended. The letter was addressed "From the Imperial appointed naval commander-in-chief of the great English nation to his Excellency the Imperial appointed admiral of the Great Pure (*i. e.* Chinese) nation, for his Excellency's inspection, &c." It must be borne in mind that the mandarins of the Celestial Empire only permit foreigners to address them in the style of petition, or as inferiors, whereas this despatch was called a letter, and addressed on a footing of perfect equality.

With a view to fulfil the admiral's commands, the Blonde cast anchor off the port of Amoy about mid-day; a battery built for five guns, none of which then appeared mounted, and which guarded the entrance to

the inner harbour, bearing from the N.N.E. ½ E. distant about a mile. When we had been at anchor nearly an hour, a boat, resembling those used by the Hong merchant on Canton river, and bearing a red flag with the characters "Kea fang seun chuen," (cruising boat of the Amoy district officer) came alongside. Within were five or six low followers or servants, who, on coming on board, said that they had been despatched by the mandarins to inquire who we were, and what we wanted. They were told briefly in reply, that we had an important communication for the admiral of the station, and that if he came on board to us, he should be treated with kindness and courtesy; but that if he declined doing so, we should lose no time in waiting upon him. To this they replied, that the admiral was at Chinchew, and requested us to go thither in search of him. We then inquired who were the principal mandarins of the district, and they answered that the chief civilian was a "fun-foo," or sub-governor of a district of the first order, of the surname Tsae, who wore a light blue button; and the highest military officer was a "chungying," or principal military commandant, surnamed, Chin, who wore a crystal button: there was also a "taoute," or intendant, surnamed, Lew, who occasionally visited Amoy, but was at that time absent. We therefore determined to deliver the document formally into the hands of the two first.

Before leaving the Melville, the admiral commanded me to draw up a few lines in Chinese, explaining what was meant by a "flag of truce," and stating that such was held sacred by all civilized nations. The following document was drawn up to answer this end:—

"The commanding chief of the great English nation addresses this to the hon. officers presiding over this district, in order that peace and harmony may be kept, and war and calamity avoided.

"Behold! it hath been said by ancient sages, 'the 10,000 kingdoms of this earth form but one house, and all mankind are but one great family of brothers; thus, although they may at times have their differences, yet in the end all hope to drop their enmity, and love each other as before:' this is a principle of human nature, applicable alike to all countries. The object of this, then, is to say that a misunderstanding having unfortunately arisen between the two great nations of England and China, in order to restore their brotherly harmony as of old, it will be necessary for quiet peaceably disposed persons to be continually coming and going between both parties, for the purpose of speaking kind words, or delivering letters, or such like. These people go utterly unarmed and carry a white flag, which, with the exception of savages, is looked upon by all nations as a sacred sign. No violence is ever offered to their persons, on the contrary, all mankind look upon them as good men, and treat them accordingly; it answers very much the same purpose as a 'meen chen-pai,' (board having the characters 'avoid fighting,' on it) in your own honourable country. We, therefore, beg that you will communicate the same to all your fellow-officers, that they may know accordingly. At the same time distinct warning is hereby given, that if any of your people fire guns or muskets at such white flag, it will be impossible for me, the great English chief, to prevent my people exacting a most fearful vengeance. Beware, therefore, beware!"

This document was delivered open, and, in order to avoid all mistakes, was read to the mandarin's servants at the capstan. They were asked again and again if they understood its purport; they replied as often, that they understood perfectly that the white flag was to be held sacred. With this document and verbal message they departed, promising to return with an immediate answer. Within an hour they came back, accompanied by another person of good address, apparently a head servant, who, pulling out the document which the others had taken ashore, presented it to me, saying, "that the district mandarins had taken a copy of it for their superior officers, but as they did not dare to hold communication with outside foreigners, they begged to return the original document whence it came." To this we answered, that, "in writing this document for the mandarins, we were merely fulfilling the commands of our superior officers and therefore he must take it back." Upon this he said a few words to his followers to convince them of our reasonableness, and quietly put the paper in his bosom. Still anxious to know if he was indeed aware of the contents, we cross-questioned him on that point, and found him quite aware that the white flag was to be regarded as a sign of truce, and duly respected. He then asked the captain's name, &c., to all of which we replied, that we should inform the mandarins fully when we landed, and, as they did not like the idea of coming on board, we should have the pleasure of calling upon them ashore immediately after dinner; and begging him, in the mean time, to present our very kindest regards to them. When just going over the ship's side we asked him which would be the better place to land at, the pagoda or the fort; and after a moment's hesitation he replied, that he thought the fort would be better.

At 3 P.M., accompanied by the second lieutenant, Sir Frederick Nicholson, we went into the cutter, and pulled right for the beach close beside the fort. We had a white flag flying at the cutter's bow, and were quite unarmed. To our amazement, instead of the kind reception which we had counted upon, we found the beach lined by about half a dozen mandarins and from 200 to 300 soldiers drawn up in hostile array, and manifesting the most unfriendly dispositions. We run the cutter's bow on the beach, when myself and the second lieutenant went forward, and pointing to the white flag, said that we had a letter for the admiral, and wished to land in order to deliver it. In reply they said that the admiral had gone to Chinchew, and that if we dared to set a foot on shore, they would kill us, or bind us hand and foot and send us on to Foochowfoo. They showed that they were prepared to support what they said by deeds, for their spearmen and matchlockmen approached the water's edge until their weapons were within a yard of our bodies, and we could not have jumped ashore without literally rushing upon them. The conversation on our part was confined to begging them to receive and forward our letter, as they would thereby avoid a great deal of trouble, all of which was done with perfect politeness, and their only reply was "off, off! get you gone!" To which were superadded sundry abuses and imprecations. Finding it impossible, under these circumstances, to deliver the despatch, we pulled off again for the frigate. In the mean time Captain Bourchier had seen our hostile reception from the ship, and had sent the third lieutenant

with an armed boat's crew to take possession of a large junk that was just leaving port. When the junk anchored under our stern, the captain of her was brought on board, who presented a written paper saying that he was only a merchantman bound for Chinchew, and did not know for what reason he was thus detained. We endeavoured to explain that we merely wished him to carry a letter on shore for the mandarins, and that the moment he returned with an answer, that moment his junk should be restored to him. Upon this a paper was drawn up addressed to the mandarins, stating that having sent a flag of truce to deliver a letter, it had been repulsed with threats and rudeness, and that we had determined to seize their junks and stop their trade until they should consent to receive it. No reply was ever brought to this note, and the junk slipped away in the grey of the morning. Early on Friday morning we hoisted sail, resolving to stand in shore, and to make another attempt to deliver the despatch under cover of the frigate's guns. It being perfectly calm, we could not weigh till 11 A.M., and at mid-day anchored close to the shore, the Chinese battery bearing off our larboard quarter distant about 500 yards. In order to explain our object clearly, a document had been written out in the morning in large Chinese characters on a piece of calico to the following effect:—

"A clear and distinct notice. Behold the foreign *employé* have received orders from my superior officer to land here, and deliver an important despatch to the honourable mandarins of the district, who in their turn are to hand the same up to his Excellency the admiral of the station, which being done, we depart hence immediately, having, in fact, no other business here.

"Now, this is to say, that having received such a commission from my commander, I dare not do otherwise than execute it, and am determined therefore to deliver the said despatch into the very hands of the honourable mandarins of this district, and as for your threats of killing me, or binding me, I regard them not! If you consent to receive this despatch, you will thereby avoid giving birth to a very serious affair; if you decline to receive it, you will thereby bring upon yourselves a great calamity. Lo! happiness and misery are in your hands, say not that we failed to give you due warning beforehand! These words are true!"

With this hung out so as to be legible at a great distance, and with the white flag flying as before, we went to the same place to repeat the experiment in the little jolly-boat with five men and boys utterly unarmed. It may here be mentioned that the mandarins had been busy all day making warlike preparations; their best guns had been placed in the battery; three pieces more were mounted at the landing place; the beach had already become an encampment, being covered with soldiers' tents, and it would appear that the Amoy mandarins did not contemplate confining themselves to the defensive, for several large junks had been towed down from the harbour in the course of the morning, and were being mounted with cannon and soldiers, no doubt with the intention to attack the frigate. Everything in fact denoted the most determined hostility.

When we got to the landing place the mandarins and troops were

drawn up as the day before, and a considerable number of spectators had assembled, no doubt from curiosity, to witness the scene. Fearing some treachery, I ordered our men to back the boat to the beach, and, in the event of the Chinese seizing me, to make the best of their way to the frigate. When about five or six yards off shore, I sat over the boat's stern, and holding out my "notice" to the mandarins, requested them to peruse it. Their fury was beyond all bounds, and seemed to be aggravated by the surrounding people reading it as well as themselves. I told them, that being most friendly disposed towards the Chinese, I had come at great hazard to speak to them words of peace and kindness, as I could not bear the idea of injuring them; they replied with threats and curses, making the well known sign of cutting off the head, &c. At this time we were scarce a couple of yards from the beach, and our men called my attention that their soldiers were wading into the water to seize the boat. Upon this I told them to pull a stroke or two, and when eight or ten yards off stood up in the boat and said with a loud voice, "I now ask you for the last time, will you receive it or not?" "No!" they all roared simultaneously, "we fear you not!" with expressions of defiance. Seeing all hopes of delivering it gone, I ordered the men to pull back to the ship, and they making the boat spring with the force of their oars, I lost my balance and fell—a most lucky fall, as just at that very moment a well-directed arrow flew over the spot I had quitted, and struck the bottom of the boat with such force as to shiver its head to pieces, one moment sooner and it had passed through my body. A matchlock bullet hit the stern of the boat a couple of inches from the coxswain's back, two or three more passed close by our heads; a couple of Chinese field pieces were discharged either at us or at the ship, and the troops were getting ready for a general discharge, which would certainly have killed the whole of us, when a circumstance took place which completely turned the tables in our favour, and most justly punished the Chinese for their cold-blooded cruelty. Captain Bourchier had been observing the hostile attitude of the mandarins and soldiers, and being apprehensive for our safety, had got the after guns of the frigate to command the beach, so that when the Chinese troops were just on the point of firing the fatal volley, a couple of 32-pound shot came bowling in among them, which soon made them quit the jolly-boat to attend to their own safety. I had scarcely recovered from the momentary stupor into which amazement at the barbarity of the Chinese had cast me, when a confused crowd of mandarins, soldiers, and spectators, each flying for his life, danced before my eyes; a few moments before they had, in defiance of the law of nations, attempted to take my life; now the same measure they had meted out to me was being amply measured out unto them again. Scarce had they finished their menaces and loud protestations of defiance ere they were scattered like chaff, every one seeking safety in flight, save some ten or a dozen, whose carcasses remained on that beach never to fly more.

On returning to the ship as many guns as possible were got to bear on the fort, and those junks which had in the morning been filled with soldiers, and we battered them at intervals for nearly a couple of hours; the fort was riddled at all points, and nearly unroofed; still, being well

built, we could not succeed in battering it down. In the meantime the noise of firing had attracted people from far and near, and the tops of the hills and all high places were now quite crowded with men, women, and children as far as the eye could reach.

By order of Captain Bourchier the following document was drawn up in Chinese:—

"The English military chief —— hereby addresses this to the common people of Amoy, that they may knowingly know and understand.

"Whereas, I, the said military chief, having received orders from my commanding officer to repair thither, for the purpose of delivering an important letter which they ought in their turn to hand up to His Excellency the admiral of the station, and, fearing lest they might not understand our foreign manner and customs, did first, on arrival, as among all foreign countries, hoist a white flag, as the emblem of peace, that the people making use of it were respected as good people and never injured; and that, therefore, relying upon this universally admitted law of nations, I should send some unarmed people ashore with a flag to deliver said letters, whom I expected to be treated with kindness and respect. At the same time I gave them to understand distinctly that if they dared to fire upon my flag of truce, or otherwise injure my defenceless people, I should exact at their hands a dreadful vengeance.

"This, then, is to state, that yesterday, when I sent my first flag of truce it was repulsed with threats and curses, a procedure quite unworthy the majesty of a great nation. But, what is still worse, this day, when I sent an officer, in a little boat, with five unarmed men, to deliver the said letter, and speak words of peace and kindness, your mandarins fired at them, and were within an ace of murdering the whole party. This is, indeed, most detestable. I, the military chief, could not but fire in return, in order to save the lives of my own people, and avenge the unprovoked hostility of the mandarins. But I have no enmity against you the common people of the land, and if any of you have suffered injury from the fire of my ship, most sincerely do I lament it, and you must rather impute this to the mistake of your own mandarins, than to any bad intention on my part. Had I had any wish to kill you, what difficulty should I have had in slaughtering you by tens of thousands at a time? But such is far from my wish, and you have seen with your own eyes that I have confined my fire to the fort and soldier ships. This is issued for the right information of all the Chinese common people. *Taoukwang*, 20th year, 6th moon, and 5th day."

This document was sent by the second lieutenant, with two armed cutters, to be pasted upon the wall of the fort, but before it could be done the party who landed were attacked by the Chinese soldiers, and Captain Bourchier, feeling anxious lest the boats' crews should be cut off, hoisted the signal for their recall. They came back bringing with them the shields and spears of those who had been killed, and the above notice was afterwards put into a bottle and cast overboard, when a fisherman was observed to pick it up. An armed boat was next despatched to cut the cable of a large junk lying near us, (one of those who had been taken up for their troops) and set her on fire. This was

done, but the fire went out ere she had drifted half way up the harbour. The ship was ordered to be got underway, and about 4 P.M. we resigned the large town of Amoy once more to its amazed and panic-struck inhabitants.

I consider this affair, which took place off Amoy, as likely to produce several important consequences. The common people witnessed our pacific but ineffectual attempts to deliver the letter intrusted to our charge, and they also witnessed their own mandarins and soldiers fire upon our unarmed boat's crew. They heard the loud note of defiance set up by their own troops and officers, and next moment they saw them flying before a despised barbarian ship, each more anxious than the other to save his life. They saw their immense town at the mercy of the foreigners, and the perfect inability of their own soldiers to drive them away, and yet they saw the victorious foreigners spare the town, and confine their vengeance to the cruel mandarins who commenced the affray. It is only to be regretted that we had not had a steamer, which by being lashed to the Blonde might have taken her up in front of the town, when selecting the different public offices or mandarin courts, we might have battered them down one by one or blown them up. This would have served still more strongly to show the people that our quarrel was with the mandarins alone, and not with them. Perhaps, however, this is not absolutely necessary in our case, for it was no deed done in a corner, having been witnessed by at least 100,000 spectators. Moreover, the quarrel having originated concerning "a white flag," this will be recognized all over the empire as the foreign emblem of peace.

As to the wisdom or propriety of delivering a communication of the kind at Amoy, that is not my province to discuss; but as to the necessity of doing what we did, I hereby solemnly declare and aver, that but for the merciful providence of Almighty God, and well timed and well directed fire of her Majesty's ship Blonde, myself and the individuals in the jolly-boat had without doubt been most barbarously murdered.

The above narrative is true according to the best of my knowledge and belief.

On board her Majesty's frigate Blonde, 7th July, 1840.

R. THOM.

SHINGLE OF THE BRITISH CHANNEL.

MR. EDITOR.—It is satisfactory to find that the important subject of the shingle of the coast of the English channel has engaged the attenton of your intelligent correspondent of Ramsgate. I agree with him that, different opinions may be of use in throwing light on matters of this sort; but when "doctors disagree," *experience* generally settles the question. With reference to this particular subject, it appears that, *experience*, which is the test of truth, has, after a lapse—may I not say?—of centuries, decided against piers, &c., being effectual in averting the evil complained of; and does not common sense dictate that to perform a radical *cure* we should *remove the cause?*

Your correspondent's objection to the *possibility* of the measure I have proposed, appears to me to be founded on misconception, and is not sustained by his own argument, as he considers the shingle to be local in position, and not migrant: each particular store, therefore, upon that assumption, however, great in quantity, would in time yield to the labour of man in clearing it from its space of action, as induced by the surge; "Dame Nature" herself delighting (to speak figuratively) in assisting the good work, by performing vigorously much the most difficult portion of the labour.

I cannot, Sir, comprehend how the measure proposed of securing by artificial means the banks of shingle, is to become effective in *remedying the evil*, or that, it would be *easier* to secure and consolidate a bank of shingle, where the efforts of Nature are incessant in forming those deposits, and her supplies comparatively inexhaustible, than in removing the pebbles as fast as they are hove up, or by machine, with reference to a *cure*, for that is the *sine quâ non* of any measure to be adopted. The very reverse appears to me to be agreeable to reason, because in this case we attack the *cause*, and *get rid of it;* in the former, we should only be advancing barriers against the *effect*, the *cause* of the evil still remaining: a repetition in due time of such barriers would be found necessary; and this operation, although it might be termed "land making," would not assuredly form *permanent havens* for large ships.

In removing the pebbles, so far from thwarting the operations of "Dame Nature," we should be strictly aiding them. This is an important question for consideration in such an undertaking as I have proposed, and I shall endeavour to prove what I advance. I do not therefore, agree with the philosophy of your correspondent on this particular point. As well may he argue that the surgeon when he uses his knife in severing an excrescence, or wen, is contravening nature, as to suppose that the removal of the shingle, which in the cases alluded to, is a positive evil, would be going contrary to her course. Would he suffer a limb to remain, after gangrene had made great ravages on the part, and try the hopeless expedient of caustic plasters, &c., or at once cut it off, and so rid the patient of the cause and effect of his suffering? Are not the cases in a great measure analogous?

It appears to me indisputable that in some instances where banks of pebbles line the strand, they are extraneous, and have been conveyed thither by the efforts of nature to rid herself of an incumbrance: this appears obvious in those breaks of a coast which are not breasted by cliffs; and from the fact that, the bed of the sea along the channel line of coast is not sufficiently precipitous to admit of the stones being cast into deep water, to assist in the general course of operation which philosophers point out as existing; namely, the gradual degradation of the land, and the rising of the bed of the ocean. Indeed it appears to me that in those deposits upon the strands and sub-marine knolls, nature herself proclaims in her usual significant language that the assistance of man is required to aid her for his own benefit. Can any stronger evidence be required of this, than that of our ports being obstructed by accumulations of shingle, which, if left to the natural operation, under the concurrence of adverse circumstances which they appear unequal to obviate, would fill them up altogether?

All endeavours to remedy the evil by constructing piers, &c. have failed; and in my humble opinion will always fail, carry them out as far as you please, whilst *the cause of the existing evil remains unsubdued.*

I may more pointedly advert to the acknowledged necessity which exists in rivers and close-ports, of assisting nature by the removal of the alluvium which the floods bring down and deposit in positions that render the free navigation of such places difficult; and which, if left to accumulate, would ultimately render it altogether impracticable. Are the conservators of such waters to be told that they are acting against the course of the natural agencies by removing these obstacles to free navigation? On the contrary, whenever the natural agencies are insufficient from a concurrence of adverse circumstances to fulfil a general law designed by the Creator, man must make use of that intelligence and common sense which are his gift, if he would prosper in his worldly affairs. Half measures ought ever to be deprecated and contemned—to conquer an evil we must strike at the root of it—cast it away altogether. All "penny wise, and pound foolish" notions are utterly unworthy a great people, and the theorem is strictly applicable, in the case we are contemplating, to the British nation, or to a company, body corporate, &c. of Englishmen.

Artificial contrivances may afford a partial relief it is true, but nothing short of removing the cause of the obstructions can effect a cure. Any detriment to the land by the removal of the shingle from the beaches or sub-marine banks where requisite, I believe, if entertained seriously, would prove an illusion on trial; besides precautions may be taken to prevent injury. I argue from known facts.—Within the tropics where the surf rises incomparably higher than it does in temperate latitudes, the beaches are for the most part composed of sand, and these have stood the test of ages. I am aware that the action of the tide when combined with the surge, and falling obliquely on a beach would be more likely to occasion abrasion, than when the direction of the billows is direct upon a strand; nevertheless it is a fact, in physical nature, that high margins where the strata of the cliffs are intersected by layers of softer materials, suffer degradation in a greater degree than level or flat shores, which oftener increase by deposits, on account of the difference of the action of the flood and ebb.

The deposits of gravel, sand, and rollers, which are found inland, and to the latter of which, your correspondent is inclined to attribute the shingle upon the coast of the channel, as these are found upon, and in fissures, faults, or lanes in the chalk formation which spreads over an extensive area from Beer in the south, to Flamborough Head in the north, it is not improbable that a portion of such detritus is brought down to the sea by floods; but I am inclined to think that, as the chalk is three or four hundred feet in depth, and the "diluvian" deposits lie in the soft or upper stratum of chalk, that we are not to expect their presence under water. The deposits which your correspondent mentions as protruding through the coating of the soil in Stone-arr-marsh, may probably be found also in those of Pevensey, Romney, and others along the coasts subject to the pebbly visitation, and which may have been hove up from the sea gradually, and in conjunction with lesser

matter* filled up original indentations of the land; the sub-soil in many parts being of stiff clay, loam, and blue clay, is favourable for retaining deposits of this sort; and we are told that in one particular part, provincially called Shravey, the flints lie so thick as effectually to cover the ground; in vallies about Dover beds of flints with scarcely any mould over them are also found. It is scarcely questionable that the outline of Great Britain has materially altered; and in many parts even since the time of the Romans; but it is clear that to fulfil the general process adverted to, the wearing away of the cliffy projections, must be greater than the accessions to low coasts: hills and mountains too must wear away and lessen in elevation, and estuaries become shoal and contracted.

It may be temerity in me, not being a geologist, to offer such opinion, but as a seaman who has given the hydrography of the ocean some little attention, I shall perhaps be excused when stating my belief that, where isolated banks of shingle are found, it is a proof that the pebbles were migrant, and have been arrested in their transit by the uneven or rugged rocky nature of the spot upon which they lie, and which has served as a nucleus for their accumulation.

With respect to the formation of piers, &c. with all deference to the superior local knowledge of others, to the science of the marine engineer, &c. in whatever, or to whatever extent they may be thrown out, as long as the accumulations of shingle remain unsubdued, they will prove ultimately useless, and assist to aggravate the evil by presenting resting places where the pebbles may lodge. A temporary benefit may probably be obtained; but in any measure for the security of shipping belonging to a nation whose maritime commerce is so vast, something more than a temporaneous advantage should direct the plan of adoption. I accuse no man, nor any set of men of sinister views, selfishness, or want of patriotism; but it is unquestionable that in many cases where piers, &c. have been constructed, they have failed to remedy the evils, to avert which they had been constructed—common sense is a quality often neglected to be brought into requisition in matters of this sort.

Your correspondent mistakes my remarks, if he thinks I entertained any idea of removing those deposits of shingle, which are beyond high water mark;† that is a piece of folly which never entered my imagination, and he will perceive by re-perusal of my former paper, that I stated, where deposits are found at the foot of cliffs, they should not be meddled with, as by forming inclined planes, they shielded the base of such cliffs from the abrading effects of the tides; frost I conceive to be almost as great a parer of the face of our chalk cliffs, as the solvent quality of the atmosphere, or the friction of the tide. Your correspondent's exclamation about Dover could not fail of creating a smile, because I was perfectly unconscious of any design of robbing the *town* of its shingle, as Dover stands on a stratum of that nature, although there may be a possibility of its being "slipped" into the sea from more than one cause, without my intervention. The proprietors I

* We are informed that almost the whole spacious level of Romney Marsh, is composed of the "sediment of the sea."

† Consolidate and secure those by all means—my aim is at those which obstruct and bar the ports.

opine would hardly be so far overcome by any such fears, as to knock down the buildings, shovel off the rollers, and lay a sound foundation of asphaltum! which article, by-the-by, may be found useful as an auxiliary to your correspondent's plan of consolidation, and in other long-shore pursuits.

It may be possible that the pebbles are not great wanderers; I should rejoice to find this confirmed, but cannot doubt that they do rove in many instances, from the circumstance of their being found on flat shores, (Port Royal beach for instance) at some distance from rocks, cliffs, or rivers. The brief arguments of your correspondent to prove that they are not migrant, are not in my humble opinion "decisive." A narrow channel is not a likely place to be the site of accumulation, where tides run with the rapidity of a sluice; and the rollers may still be migrant along shore without altering the depth of the channel on the sea-board. I am candid enough to admit, or rather conjecture this to be the case, which if true to the extent of many miles, would increase both the difficulty and the expense of clearance. But, if your correspondent's belief of the pebbles being confined to certain localities be correct, then there would be less difficulty in the undertaking, because in that case it would only be necessary to remove them from any particular place to free the navigation of the obstruction which they create there.

The remedy proposed appears so plain to the comprehension, and the result so certain, that I think it altogether unnecessary to enlarge farther on the subject. The remarks contained in the former paper, I believe, embrace every point likely to lead to conviction. The practicability and expense may be considered as requiring mature deliberation: of the first, perhaps the qualities required are—energy and determination to conquer all difficulties which lie in the way; the latter would mainly depend on the extent of space to be cleared, and the time required for the accomplishment. The paramount advantages to be gained should be kept in view, these would be incalculable to this specially maritime nation; and if the expense should prove to be great, what of that to a people so opulent as to be able and willing to expend millions of money on railroads. Assuredly timidity in an undertaking of magnitude is not a characteristic of Englishmen,—they are not to be scared by apparent difficulties, when the prospect of return for labour and expense, may be calculated as certain. The medical axiom should in this case be borne in mind—"Desperate diseases require desperate remedies." All "quackery" is a farce; and the quackery of stone and mortar equally so, with that of drugs, as displayed in abundant instances, and as experience has proved, in none more so than in the construction of piers, &c.

With respect to the remark on "convicts," it was on the score of economy that I named them as labourers. Could they not be as effectually guarded in this pursuit, as they are in making roads, &c. in New South Wales? The calcareous stones could be easily calcined on the spot, and the silex ground also in the locality by steam; both articles are of value, and a ready demand will always be made for them as long as our present habit of industry continues.

I have, Sir, derived much gratification from the remarks of your

intelligent correspondent, and although we are at issue as to the mode of remedying the evil complained of, we have in common but one object —the improvement of the channel ports.

In conclusion, I may be permitted to observe that there is reason for believing that national benefit would follow, if the conservatism of all the ports, harbours, &c., of the United Kingdom, were vested in the Lords of the Admiralty, including the hydrographer-royal, and perhaps, the Trinity-board. The local authorities, as at present constituted, would probably exclaim that, their privileges were invaded, but the result of such a transfer, I firmly believe, would not be found detrimental to the interests of a single place or person, but rather insure alike advantages to the whole. At all events it seems necessary that some controlling power over what are termed "local improvements" should be established, as a check to the mischief which not unfrequently arises from the application of injudicious measures.

I have the honor to be, &c.

5th January, 1841. J. E.

[In the the former paper a duplicate typographical error appears in pp. 694—695, vol. for 1840, *for* "chist" *read* "chert." Chert is also called petrosilex, or rock flint.]

NAUTICAL RAMBLES.—*The Bermudas.*—No. V.

(Continued from vol. for 1840, p. 779.)

FROM the person who had related to me the Lover's tale, I learnt that the complaints which most afflicted the islanders were rheumatism and intermitting fever. Both these complaints seem extraordinary in so mild a climate, and the latter would be considered remarkable, were we not informed that this fever is not confined to marshy lands, aud that it may be produced by other causes than the exhalations or miasma arising from low and wet grounds. Although the symptoms are dissimilar, both the distempers appear to originate from obstructed perspiration; the great heat of the sun, and the fresh breezes of the ocean, by acting alternately on the frame, are most likely to produce such effects.

My informant had been subject to the fever and ague for a long time; he had tried the usual remedies, *Cinchona*, or Peruvian bark, &c. without receiving the slightest relief. He was almost borne down with the repeated attacks, which increased as the disease became more confirmed; his mind became as much agitated as his body, both were so much shaken that he began to fear the disorder would terminate in imbecility and inanition, the thought of which almost drove him distracted. Despairing of relief from the medicines which had been administered to him, he resolutely resolved to discontinue them, and try the effect of moderate and regular exercise; he persevered for some time but without any good resulting, still he continued to stroll about, and one day, whilst gazing upon the placid water of the little Cove, the idea flashed across his mind, that were he to try Nature's cold bath

repeatedly, it might lead to his recovery, and that if it did not effect that, with proper care, it would do him no harm; the opinion strengthened as he retraced his steps home, which lay only a few hundred yards from the Cove. Fixed in his resolve by the time he arrived at his house, he set his family to work immediately to make a complete flannel dress: at daybreak the next morning he sallied forth, and plunged off a rock into deep water, swam on shore, and walked briskly home, threw off his dripping garments, jumped into bed between the blankets and slept soundly. Repeating this operation for ten days or a fortnight, he found himself perfectly restored to health, and never after had a return of the "shakings."

The philosophy of this remedy seems to be upon the same principle as the German antidotal system of pathology. Concurrently with that, we all know that cold applications will relieve the effects of cold, under certain conditions, and that the employment of heat is successful in palliating inflammation arising from burns or scalds. One poison, it appears, will neutralize another; but, extended experiments must be tried before the corresponding antidotes to every bane must be determined: there is, probably, no good reason for distrusting the truth of it, and I may, without being a chemist, be permitted to conjecture that the effect arises principally from chemical action. Of the celebrated traveller, Mr. Waterton, the donkey and the *wourali* poison most persons have heard, and also of a mineral acid,* (*any* acid which is mineral,) decomposing the poisonous saliva of a rabid animal, and preventing hydrophobia. I have been assured by a surgeon, that he has practiced this remedy with success, and that he had salivated a child who had been bitten by a dog that was supposed to be rabid, and that the child recovered. The effect of a cold stream of water on the spine is said to be decisive in the cure of *tetanus* or locked-jaw; with respect to the treatment of this dreadful disease, I have myself been twice cured by the application of a substance resembling tar, of a powerful sub-acid flavour,† administered by a black woman, when all the stupes, fomentations, blisters, &c. of the doctors had failed. The applyer did not know what the substance was, and the person from whom she procured it would not reveal the secret; but, I believe it to have been the *rob* of the island (Jamaica) sorrel, a plant very different from the English meadow sorrel, but probably possessing the same properties. The same worthy Bermudian also stated that for liver complaints and bilious attacks, she employed the fresh juice of the aloe, and that its operation was less drastic and more efficacious than the extract procured in the shops. I may appear to have wandered from my road and province in noticing these matters here; but, I have purposely done so with the view of benefiting my brother sailors. On many occasions, seamen are thrown upon the resources of their own minds in remedial affairs, when sickness falls upon the crew, or acci-

* Mr. Murray, lecturer on chemistry, gives the following remedy, (which he has successfully tried.) "A mixture of two parts of nitric acid, and one part of muriatic acid, both measured, (evolving chlorine in a continued form,) to be applied to the wound (the bite of a mad dog,) as soon as possible, and more than once."

† It was applied to the teeth,—head reclining backwards, by the aid of a feather, in an hour the jaws were loosened.

dents occur, and when neither medical nor surgical aid can be procured; whatever may be likely to afford them assistance is therefore valuable. In all countries, individuals are to be found who profess to cure diseases without the aid of medical science, and in none, perhaps, are quacks so numerous or so persevering, or who exercise their calling with more audacious effrontery, or where more eager dupes are to be met with, than in Old England! Indeed, it has become the grand emporium,—the head-quarters of empiricism,—foreigners with high sounding titles, licentiates, professors, M.D's, barons, and counts! are as numerous as the curers of souls in a Catholic country, as if there were not native spurious, or "hedge" doctors enough to physic dear mister and mistress, and little misses and masters Bull out of their money, and worse,—out of their existence to boot! These *worthies* no doubt think and exclaim with the poet that,

> "'Tis undeny'd, and the assertion's common,
> That modern physic is a mere old woman!"

I heard of no empirics, properly so termed in these islands; some of the natives, however, as is the case in the West Indies, employ simple remedies for those disorders which are incident to the climate, but they do not advertise the "surprising and marvellous cures" effected, as we find the case in England, nor do they, that I am aware of, vend their nostrums at all, much less at an enormous profit. Among these would be followers of Esculapius, who practice without collegiate diploma, was a noted old black man named Sawker, honoured with the gratuitous degree of doctor prefixed to his cutting patronymic!

During the course of my extended rambles in different parts of the world, and from very attentive observations in the treatment of patients of all degrees, and under a variety of distempers by professional men, and old women, I arrived at the conviction that the former frequently administer a great deal too much medicine. And upon the results which we have seen exemplified under the curative treatment of both parties, we were convinced that in most cases, Nature only requires to be assisted in her endeavours to throw off disease.

But, in thus thinking, let it not be supposed that I am insensible of the value of the practical and theoretical information of the medical practitioner, or, that I consider every person ignorant of the nature of diseases, or the remedies to be applied for their removal, is fit to administer to their own relief or to that of others. The grand secret seems to lie in the discriminating between the symptoms of one complaint and those of another, (which indeed often fails the medical man himself,) and to find out, when that is possible, what the disease really is with which any patient is afflicted. In complicated cases the practitioner is unquestionably the best judge; but, in other cases which are plain, an intelligent person who has, (as *all* ought to do,) given his attention to the general ills to which "humanity is heir," and has studied the remedial means, is quite competent to become the assistant of Nature. Acting upon this principle, I have, though labouring under a vital disease of the liver, of more than thirty years standing, "cut the medicos," and found the benefit of so doing; for had I followed up the desperate "remedies" they inflicted upon me, I am

pretty certain, (as one of them acknowledged,) that I should not have been alive at this time to pen these remarks!

That simples are often efficacious in the removal of diseases, and *old women* sometimes, especially within the tropics, perform cures which fail to be accomplished by medical men, I have had opportunities of knowing, not only in the cases of others, but in those of my own. I know an officer who was reduced to a most deplorable state by dysentery, which baffled the skill of the hospital surgeons: by their consent he quitted Port Royal, and went up to the country house of an old lady a few miles from Kingston, where he was perfectly restored by following her advice, which was principally that of drinking about a gill or rather less of the fresh juice from the Plantain Sucker, (from the stem of the *plant*, tree it can scarcely be called,) for three or four mornings. An incision is made in the Sucker, and the lips applied to it,—the juice is very astringent and disagreeable to the palate, but it is as efficacious as it is simple in the country; aperient doses of ipecacuanha precede the use of the Plantain juice. Putrid sore throats are cured with Cayenne pepper. I was assured by a Mulatto woman that, she has known the use of this anticeptic create convulsions, but that they have no other remedy so effectual,—it was a long time before the medical men would use it; we have now "Cayenne Lozenges!" The impalpable powder of Mahogany bark is employed in the cure of ulcers, where Peruvian bark is not to be obtained; the former is a good substitute in this case, but I do not know whether it is given internally. Long before the principle of the substance called *Iodine* was discovered, the ashes of burnt sponge were used in the cure of cancer, by unprofessional persons. I have been assured that burnt silk will answer the purpose, but know not if there be any truth in it.

In the West Indies, and I believe the same may be said of the Bermudas, the heads of families are all more or less skilled in the curative art; and do not, as in England, where they are in such matters almost as helpless as babes, send for a doctor upon every occasion. I would by no means, however, whilst making these remarks, be considered as aiming to depreciate the skill and attainments of medical men,—I am sensible of their great merits, and how much society, under Providence, stands indebted to their discriminating knowledge; but, considering the enormous expense attending their visits, it becomes a matter of importance for those persons who are not affluent, and possess good sense and discretion, (particularly among half-pay officers,) to study diligently their own constitutions, and obtain all the best information they can respecting diseases and the modes of cure. As the matter stands at present, there can be no sort of offence in siding with the general opinion, that the surgical art has advanced nearer to perfection than the science of physic. It is often considered that in physical cases two eminent doctors will disagree, and that in an operation, two efficient surgeons can (or ought) never to differ. But this, perhaps, is not so good a criterion, as that doctors are sometimes puzzled to determine the true nature of a disease, and to name it, whilst the surgeon as a practical anatomist can rarely err.

Pembroke is an agreeable and romantic part of the main land; cedar groves are everywhere predominant, with some clear spots

between them. I observed on one of these miniature downs a hare capering about; it did not appear to be very wild, and I concluded that it had been introduced into the island more as a curiosity than for sport. The groves offer fine cover for pheasants, which no doubt would thrive well on the Indian corn, and the cedar berries; the domestic poultry and swine feed with avidity on them. I made enquiry respecting the statement that there are no venemous reptiles in any of the islands, and was informed that only one snake had ever been seen,—it was destroyed. It is probable that the reptile had been accidentally introduced in one of the ships-of war from Halifax, where they abound, and often swim off and crawl into the vessels at anchor there. There are, however, plenty of the Scolopendræ or Centipedes to be found at the roots of the decayed cedars; they are here larger than any I have ever met with in the West Indies, being nearly a foot in length, and proportionately broad, and of a purple tint intermixed with the usual chesnut yellow colour; large as they are, however, they approach only to about one-third of the length assigned to those of Carthagena in the Spanish main, by Don Ulloa!

From Spanish Point there is a reef extending towards Irelands isle, about one mile and three quarters in a north-west direction, which forms a natural breakwater to the Western or Great Sound; through this barrier there are navigable channels; that which is generally used by merchant vessels lies nearest to Spanish Point. Irelands Isle on which the new dockyard is situated is very narrow, and about two miles in length; it is principally composed of rock, with patches of mould intervening; the surface, at the time we visited it, was overgrown with small cedars, dwarf palmettos, and a variety of indigenous shrubs and herbaceous plants.

The difficulty, labour, and perseverance presented, and necessary in the formation of cambers, quays, &c., here proved much greater than could have been imagined from the situation of the place, in a remote corner of the internal water. The works have been near thirty years in progress and are not yet completed, and the effects of the hurricane of September 1839 will cause further delay; but the persevering determination to conquer all difficulties must ultimately obtain the object, and the completion of the depôt will present a monument of the skill, industry, resources, and wealth of the nation, that could devise and execute, under great obstacles, such a vast undertaking!

The insular pier on the reef will insure a smooth water inner anchorage, which is here essential to the speedy fitting of ships, and I hope that sheers will be, if not already, erected; and also that tanks on a large scale will occupy a portion of the surface of the island; as a matter of precaution, an apparatus for distilling sea water would relieve anxiety in those years when continued drought occurs. I may enquire, whilst on this subject, if a trial has ever been made, of obtaining water in the main-land, by means of those circumscribed borings called "Artesian wells." There is no knowing what success may attend such experiments;—a perennial spring of sweet water would there be invaluable.

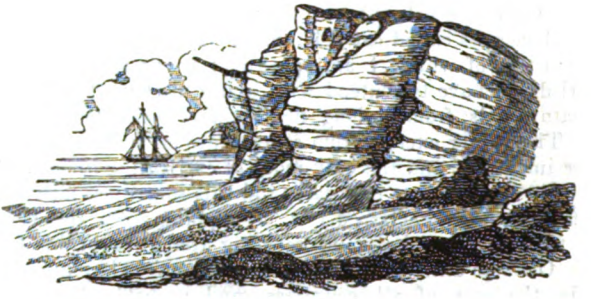
The sea-cliffs about St. Johns Hill, are as remarkable as they are picturesque; the action of waves has hollowed out caves in some por-

tions of their vertical surfaces; and the break, occasioned by the Cove, enables a person to descend to the base of those to the westward for a short distance, where one of these caverns is situated. Whilst examining the huge layers of slate I observed an immense animal of the *cephalopoda* tribe, as large as a good sized Pembroke table, with immense eyes, and long arms or feelers; its colour was dark brown-green, spotted; the belly was dirty white. So hideous was its appearance, that it at once arrested my steps; and I stood silently gazing on the curious object for some time. It was spread out to the full of its circular extent, apparently enjoying the bright sunshine on a shelving projection of the rock, and as I had come down leisurely, and without noise, it remained motionless at its station for some time before it perceived me; the instant it did so, it sprang off the rock, with surprising energy, and sank in the depth below. On the shores of the Mediterranean, and the West India islands, I have seen some of the smaller varieties—the cuttle-fish tribe of the former; those of the latter the sailors and negroes called cat-fish; but I have no where observed one so large as that of which I am speaking: it is a sort of animal which the pearl divers have to contend with, and a most powerful and formidable creature it is, from its long flexible prehensile tentacular appendages. The horror excited from an embrace of such a monster, may easily be imagined, and the only mode of extricating himself which the diver has in his power to exercise, (and this sometimes fails when both his arms happen to be clasped,) is, by ripping open the body of the animal with a sharp knife, or severing the arms of his formidable enemy. Of these animals the *Brit. Cyclo.* says "They are abundantly found in the seas of all countries, and probably larger and more numerous in those of warm latitudes, where marvellous stories are related of their gigantic structure; they, however, are so much involved in ignorance and mystery, resting only on the uncorroborated testimony of incompetent judges, that though we are not in a position to contradict them positively, we are unwilling to receive them as well-established facts. Not that we absolutely reject the possibility of much we have heard respecting their being large, for every instant of our existence brings to light new discoveries in the animal kingdom, elucidating the phenomena of Nature; and we have constantly had occasion to remark, that marvellous as many of the tales of olden times at first appeared, they more or less have originated in a simple matter of fact, distorted or magnified, by subsequent narrators, and disguised at all times by ignorant credulity, which eagerly adopts that which cannot easily be disproved.

"We are, however, as we have just stated, cautious without being incredulous, never forgetting that Bruce's Abyssinian beefsteaks drove him from society, and broke his heart by slow degrees. We have also the assertion before our eyes of a recent delightful writer, who says he is really fearful that his truth would be doubted, if he were to state some of the scenes he had witnessed; and he has actually confined his information to such only as know his integrity, leaving future travellers to confirm his assertions. We can fully appreciate this feeling, and honour it; but were all mankind to be actuated by similar delicacy, no progress would be made in elucidating the phenomena of Nature,—

science must cease to advance, and ignorance become perpetuated."

The road, or rather bridle path, from St. Johns Hill to Hamilton town is extremely romantic, winding through a succession of cypress groves; the branches of these beautiful trees, in some places nearly spread across the way, and form a canopy overhead, which renders the walk cool and pleasant to the pedestrian. There is also a delightful and refreshing fragrance from the cedars, the latana or wild sage, and other odoriferous plants, that abound in these retired spots. At every opening, neat white-washed cottages appear, graced with the sturdy palmetto, and dark foliaged orange; the earth is clothed with a short running grass, and soft verdant moss; and the blue, and the red birds, contribute by the richness of their plumage to heighten the beauty of the scenery.



The Fishing Ladder near St. Johns Cove.

The remarkable tranquillity, the seclusion, the picturesque effect of the little glens, and their neat white abodes,—the birds, the bright sunshine and clear blue sky, the cooling sea breeze gently rustling the trees, and the delightful odour of the plants, all conspire to render this tract, an extent about a mile and a half, one of the most attractive in the island. I thought of the Bard of the "Green Isle," who, perhaps, had stopped here himself to admire the picture,—a miniature Arcadia, most appropriate is a couplet of one of his songs, which no doubt originated in such a scene.

"And I said if there's peace to be found in the world,
A heart which is humble might hope for it here."

And no doubt many a humble heart here enjoys that blessing to as great an extent as it is possible to obtain it, in a place which though admirably suited for its attainment, is, nevertheless, subject to the mutations of time and circumstances, as other less favoured spots. An account which we have recently seen, informs us, that even the pure air of these sea-girt isles cannot at all times indemnify the temperate inhabitants from epidemical diseases, or save their animal food from distemper. It states that, the cattle have been afflicted with distemper resembling yellow fever! and fish, chiefly what are called the blue

fish, have been thrown ashore in such quantities, that meetings of the inhabitants had been called in different parts of the island for the purpose of having them interred; some contagious disorder being dreaded from the effect arising from their decaying carcases. Several of these fish have been opened immediately after life was extinct, when it has been discovered that the liver and viscera were in a putrescent state. It goes on to say, that "in alluding to that island a few weeks since, we had occasion to mention that the contagion which prevailed there in 1819, was marked by a similar character;—in thirty hours after a person had been assailed by the fever, he could not be lifted into his coffin, except by means of a sheet!" The latter assertion has been doubted by a writer, (we believe Mr. Beaumont, of Jamaica, an American of the States by birth,) who says, that he was at Bermuda at the time, and saw nothing of it. At all events, both circumstances are curious, although there may be some exaggeration in the account, and are worthy of investigation. Without pretending to give a solution, we may be permitted to ask, whether in one case sub-marine volcanic eruption might not account for the state in which the fish were found, at least we have heard of the wholesale destruction of the finny tribes by such agency,—and may not the transit of a cholera vein or whiff, (according to the new theory,) afford a clue to the other?

But it is clear from the inquiry into the diseases of the army that, little is actually known of the causes of the disarrangement of health in human beings. All our general pre-conceived notions on this head being found at variance with facts! It necessarily follows that the doctors, although they may be very clever in arresting a malady, will have to learn anew the origin of those afflictions which assail humanites.

Quitting the groves, the inlet called Pagets Port breaks unexpectedly upon the sight: the town consists of a uumber of straggling houses along the beach, extending nearly to the head of the port, which terminates in a swamp.

The opposite shore, Paget and Warwick, has a verdant and pleasing appearance: many islets are grouped about this part of the sound, and most of them are inhabited. I went with some officers in a fisher's boat, to one of those little insular spots, to pay a visit to the owner, a kind-hearted friendly gentlewoman, and was very much gratified. Such a delightful scene of rural simplicity, peace, and domestic comfort, I had nowhere observed in the larger islands, although almost every where, the absence of noise, and bustling activity of occupation, are striking enough. As we landed, the good lady met us close to the beach, amidst an incredible number of her importunate dependants!—She was literally surrounded by a host of poultry of all descriptions, every one of which seemed in eager expectation of the accustomed feed of Indian corn; indeed, they would scarcely brook the delay which necessarily took place at our interview, clamourously jumping and flying up towards their mistress's hands, demanding with many a chuckle to be instantly fed; stopping when she stopped, and proceeding when she resumed her walk:—well! thought I, the anxiety for food seems not to be restricted to the *rationale* alone—the blue jacket and the pale faced native, but to pervade even the fowls! What a hungry land

must this be? yet, the flocks before me were evidence that, according to the old adage, "where there's a will there's a way," I must acknowledge after all I had heard, seen, and felt, that such unlooked for abundance surprised me exceedingly; and it struck me at once that here at least, there was one wise head, determined to provide against want by being always surrounded with plenty. We found the old lady and her family, very agreeable persons, apparently, and I believe truly, living in the most happy and contented manner, free from all those artificial troubles, jealousies and perplexities, which afflict mankind in the upper and more public walks of life,—here a spacious and comfortable mansion, delightfully clean and cool, enjoying an extensive prospect of very romantic scenery, afforded them shelter; a spacious garden, and well stocked yard, abundance wherewith to support life; and the many smiling sable faces which we saw, showed that assistants in the domestic duties were not wanting. Owning every inch of the little blooming oasis of the blue waters—what are the joys of the giddy crowd in the midst of the gay festivities of the great world, compared to the heartfelt delights of the calm and peaceable life enjoyed by these unostentatious daughters of Eve.

"Why from the crowd must pleasure still be sought,
When calmer scenes alone can bliss bestow?
Why from wild mirth the transient smile be caught,
When pure affection wakes a brighter glow?"

Near the dwelling we were shown a rope-walk, which had been a source of profit to the owner; but from some cause or other, it appeared not to have been used for a very long time, as it was overgrown with weeds, grass and moss.

Near Hamilton I paid a visit to an o'd seafaring gentleman, who, having renounced the perils of the ocean, was living at ease on his property. He appeared an eccentric character, and like most seamen was blunt, honest, and hospitable. He showed me a lime-kiln, which with great patience and industry he had excavated in a solid rock; it was a curiosity, and displayed an instance of persevering ingenuity and purpose, not commonly to be observed among the Bermudians. An inverted cone had been formed near the edge of a quarry of lime-stone, and the rock blasted, broken into pieces. When the excavation was completed, and an orifice made at the base on the side of the quarry to admit a draught of air to pass upwards, the prepared stone with layers of faggots were placed in the cone, aad ignited, the stone calcined, and when cool was slaked in the kiln, which, at the time I saw it was full to the brim with excellent white lime. The old gentleman calculated the worth of his labours to amount to 1,000*l.* currency, (600*l.* sterling). As the whole of the labour was performed by his own people without extra charge, the entire value would be the profit without deduction; and not a little proud was the old seaman of the speculation, as, well he might be, for it was an example of energy and skill highly creditable in a land where exertion and the profitable employment of time and means are little understood or practised.

I was introduced into a very extensive with-drawing room in his comfortable mansion, I should think about sixty feet in length, and proportionately wide and well furnished; the floor-cloth covering it was

of one entire piece, manufactured by Mr. Hare of Bristol. For the purpose of obtaining this painted carpet the old tar had undertaken a voyage to England, where he remained until it was completed, an arduous undertaking at his time of life, which forcibly displays the activity of his mind, and for which he was probably indebted to his early familiarity with the stirring scenes of a sea life.

In the vicinity I observed some negroes planting potatoes; a trench was dug with a hoe, into which they placed a layer of small dry sticks, this was covered with a little earth to within four inches of the surface, and the potatoes placed upon that, the trench was then filled up. Such is their simple mode of culture, and we may imagine from it, that the crop would not be very abundant.

In the cultivated grounds I observed the banana, prickly pears, cassava, arrow-root, Indian corn, castor-oil tree, and yams; also the medicinal plants—Bermudiana, ipecacuanha, and stramonium. Geraniums, roses, and balsams, were among the flowers of the garden. Whilst speaking of the production of the land, I must not omit to mention a singular sub-marine plant, a specimen of which almost every visitor to the islands carries away with him. I allude to the *sea-rod*; it is obtained from the rocks by the fishermen; the plant is a mere collection of long round shoots, about the size of a swan-quill; black, elastic, and of a substance resembling horn, which bears a very high polish; it is said to be peculiar to the rocks of these islands—never having been met with elsewhere; this however may be considered uncertain. It is poisonous, and the use of it in striking animals is prohibited.

Removal of the Remains of Napoleon Bonaparte* from the Island of St. Helena.

The following paragraphs appeared in the prints of the time on this subject.

The remains of Napoleon.—In the French Chamber of Deputies on Tuesday, the minister of the Interior said "that the king has commanded his son, the Prince de Joinville, to go to the island of St. Helena (bursts of cheering interrupted the sentence,) and to take from there the ashes of the Emperor Napoleon, in order that they may find their resting place in France." (Repeated cries of bravo.) "Our magnanimous ally," continued the minister, "in this circumstance has wished to efface the last trace of past animosity; if any existed it ought

* August 15th, 1502, St. Helena Island.—On this day, (or as some say on the 21st of May,) a small rocky island, situated in the Atlantic Ocean, about 1,000 miles from any other land, was discovered by John de Nuova, a Portuguese navigator, on his return from the East Indies. This discovery happened on the anniversary of the festival of St. Helena,—he called the island by her name. It has been uninterruptedly in the hands of the English ever since the year 1674, and its situation and supply of pure fresh water, have gained for it the notice and patronage of the East India Company. St. Helena will attract particular notice to the end of time, as the sequestered spot to which the late Emperor Napoleon was consigned as an exile. He sailed from Plymouth Sound August the 8th, 1815.

to be buried in the tomb of Napoleon. The frigate charged with this precious deposit will arrive at the mouth of the Seine, and another vessel will bring the ashes to Paris, where they will be placed in the Invalides, and a solemn ceremony worthy of the country and of the occasion will take place. Napoleon was legitimate sovereign of this country, and at his return he must reign and command still. His sword will be placed on the monument to be erected in this glorious and silent asylum of his former comrades in arms. For an important monument must be erected, accompanied *d'ombre et de silence, (verbatim.)* The project of law we propose is to ask a million of francs for the removal of the ashes, the ceremony, and the erection of the tomb. (Cries of 'bravo, bravo.')" M. Hermoux rushed to the tribune, and proposed to vote with enthusiasm the money asked for. The president said he was equally inspired by this generous impulse, but the regulation of the chamber required twenty-four hours for the representation of a new law. The deputies quitted their seats, and for a quarter of an hour the business was suspended.

The following are the remarks of the *Courier Francais* on the ministerial proposal to bring home to France the remains of Napoleon:—"In restoring the remains of Napoleon to France, the last wish of that great man is accomplished. The king has charged his son with this pious task. The Prince of Joinville will receive from the hands of England the precious deposit. The old companions of the Emperor's exile, Gourgaud, Bertrand, and Las Cases, will accompany him. A million of francs, voted by the chamber, will raise up a tomb beneath the vaults of the Invalides. It was on the 5th of May, the anniversary of his death, that the French Government ordered its ambassador at London to claim the ashes of Napoleon. Ere ten days had elapsed M. Thiers learned by an official despatch from Lord Palmerston, that England, without hesitating and with generous haste, was ready to meet the wish of France. The minister read this despatch at the Tribune, and it does the greatest honour to the government which dictated it. The British Cabinet hopes that the remains of that national hatred which so long divided France and England, may be buried in the tomb of Napoleon. This noble wish shall not be disappointed. England and France have the one destiny to fulfil,—no other than the advancement of civilization. Their discord must henceforth be a calamity to Europe, and a crime in whosoever would assume the responsibility of such a breach."

October 13th, 1815.—Napoleon Bonaparte, who "bestrode the majestic world like a Colossus," arrived at St. Helena, as an exile prisoner," affording a striking instance that if "vaulting ambition" can raise a man from the lowest station, it can also prostrate him from the highest. A declaration ascribed to this captive chief is full of wisdom, and offers a salutary lesson to the wicked "rulers of mankind."—"I have sinned against the liberal ideas of the age, and I am fallen."

On the same day that the exiled emperor landed from the Northumberland man-of-war at St. Helena, Murat whom he had raised to the throne of Naples, was shot at four o'clock in the afternoon, in the fortress of Pizzo Calabria, Italy.

May 20th, 1799.—Bonaparte raised the seige of Acre,* after failing in a twelfth assault on it, made over the putrid, unburied, and about 2,000 of the worst of his wounded men, having first massacred his Turkish prisoners in cold blood.

May 5th, 1821.—Died at Longwood, a villa six miles from James town, St. Helena, in the sixth year of his exile, and the fifty-second year of his age, that celebrated personage, Napoleon Bonaparte. He was buried in a romantic spot, near a crystal spring of water, and beneath some beautiful willow trees. On the 4th, the island was swept by a most tremendous storm, which tore up all the trees by the roots. About six in the evening, Napoleon having pronounced, "*Tête d'Armèe*," passed for ever from the dreams of battle.—*Family Library*.

* This name is so intimately connected with a gallant naval officer now no more, that we are tempted to annex the following.

March 30th, 1799.—The gallant Sir Sidney Smith repulsed Bonaparte in a violent attack on the fort of St. Jean d'Acre. This once noble city, now only a heap of ruins, is situated on the Levant, (the eastern part of the Mediterranean Sea,) north-west of Jerusalem, and about thirty miles south of Tyre. It was several times taken and retaken by the Infidels and Christians in the holy wars; our valiant Richard the First was in possession of it in 1191, and it was here that Edward the First, (then prince) received a wound from a poisoned dagger, which his amiable and heroic consort cured by sucking the venom out of it, at the risk of her own life. St. John was a tutelary saint of Acre,—christianity was early established here, for it was at this place, then known by the name of Ptolemais, that Paul visited the saints in his way to Jerusalem.—Acts xxi. 7. It has sometimes been called Acre, Accho, Acca and Ace.

The following honors were obtained by Sir Sidney Smith for his gallant defence of Acre.

1802. Sir Sidney Smith.—The king has been graciously pleased, in consideration of the signal and very distinguished services performed to his Majesty and his Ally, the Ottoman emperor, by Sir William Sidney Smith, knight, commander and grand cross of the Royal Swedish military order of the sword, a captain in the Royal Navy, and representative for the city of Rochester in the Parliament of the United Kingdom, and to evince the sense which his Majesty entertains of the great ability and heroic perseverance manifested by him the said Sir William Sidney Smith, upon divers occasions, and more especially of his able and highly distinguished conduct in the defence of the town of St. Jean d'Acre, in Syria, in the year 1799, to grant his royal licence and authority, that he may bear the following honourable augmentations to the armorial ensigns born by his family; viz. on the cheveron, a wreath of laurel accompanied by two crosses calvary; in the angle a breach, and on the sides of the said breach the standard of the Ottoman Empire, and the union flag of Great Britain, as then displayed, and for crest, the imperial Ottoman cheleng or plume of triumph upon a turban, in allusion to the highly honourable and distinguished decoration transmitted by his said imperial Majesty to Sir William Sidney Smith, in testimony of his esteem and in acknowledgment of his meritorious exertions in the aforesaid defence; and the family crest, viz. a leopard's head collared and lined, issuant out of an oriental crown. The said arms and crests to be borne by him the said Sir William Sidney Smith, and by his issue, together with the motto, "Cœur de Lion." And although the privilege of bearing supporters be limited to the peers of the realm, the knights of his Majesty's orders, and the proxies of princes of the blood royal at installations, except in such cases wherein, under particular circumstances, his Majesty has been pleased to grant his especial licence for the use thereof. Yet, in order to give a farther testimony of his Majesty's particular approbation of the services of the said Sir William Sidney Smith, he has been graciously pleased to allow him to bear for supporters to his arms a tiger guardant, navally crowned; in the mouth a palm branch, being the symbol of victory, supporting the union flag of Great Britain, with the inscription "Jerusalem, 1799," upon the cross of St. George, and a lamb murally crowned, in the mouth an olive branch being the symbol of peace, supporting the banner of Jerusalem. The said armorial ensigns being first duly exemplified according to the laws of arms, and recorded in the Herald's office,—and also to order, that this his Majesty's said concession, and especial mark of his royal favour be registered in his college of arms.

On the afternoon of the 7th of October, a signal was made of a French brig-of-war coming to the anchorage. Of course all hands on shore were on the *qui vive*, thinking she might be a vessel from France, or a vessel coming to tell us that the Belle Poule was close by. When she was sufficiently close she sent a boat on shore, and proved to be the Oreste, Capt. Doret, from Brest, bound to Buenos Ayres, but ordered here with despatches for his Royal Highness the Prince de Joinville, (who had sailed from France twenty-four days before the Oreste,) in command of the Belle Poule, having the Favorite, Capt. Gayet, in company. On the following morning there were three sail in sight, two of them apparently keeping company, and seemed vessels of war. They proved to be the long expected French squadron, despatched for the purpose of removing the remains of Napoleon Bonaparte. Owing to light and variable winds they were a long time getting in. The Prince de Joinville took entire charge in bringing his ship, the Belle Poule into the anchorage, which he did in very good style—he gave every order himself. He was waited upon by many heads of offices, and also by Mr. Saul Solomon, as Agent Consulaire, but none of them remained very long on board.

This evening, some of the officers and passengers came on shore for a short time; the passengers in the Belle Poule were General Bertrand, Gourgaud, Count Las Cases, the younger, Mr. Arthur Bertrand, son of the General, Count de Chabot, who had the entire management as Commissaire de Roi, and a priest of great note, L'Abbe Felix de Cocquereau, who came out to officiate in the exhumation, and five of the domestics of the late Napoleon. Marchand was on board the Favorite. On the Belle Poule anchoring she was saluted by the Dolphin, an English vessel-of-war, with 21 guns, which was returned. The Belle Poule then saluted the island with the same number, which was returned from the batteries at Ladder Hill. On the following morning the 9th, the Prince went on board the Dolphin, where he was well received. Salutes were again exchanged, and yards were manned, as an honor due to their distinguished visitor. He afterwards, with his staff, and all his passengers, landed about 11 o'clock, when he was again saluted, which the Belle Poule returned. His Royal Highness was received upon the wharf, immediately on his landing, by Colonel Trelawney, and all the functionaries, both civil and military, the officers of the local militia, and a guard of honor from the 91st Regt. He went to the castle, which had been prepared for his reception, and then dismissed the guard of honor. Whilst here he was waited upon by many of the most respectable inhabitants, who were presented to him. The Generals Bertrand, Gourgaud, and Count Las Cases here met many persons whom they knew when they were at St. Helena upon a former occasion. From the castle the party went to the tomb, and to Longwood; and afterwards waited upon his Excellency the Governor, who unfortunately was unwell at the time at Plantation House; from thence they returned to the castle, where a large party had been invited to dine to meet his Royal Highness, who afterwards returned on board. The fine band of his Royal Highness had been previously landed, and were playing during the dinner. All the Island was of course *out of doors*, to hear and see every thing.

On the 10th, Bertrand, Gourgaud, and young Las Cases, the old

domestics, and many of the officers of the several men-of-war were on shore; the former visiting those whom they knew before, very affable, and making themselves very agreeable; the latter also were very pleasant people, and did all they could to leave a good impression behind them, in which they have succeeded. Numbers of persons went on board to see the famed Belle Poule. The prince this day dined with the governor, and returned on board at night. From this time to the 14th, the prince came once on shore, and sketched the tomb; during these days the officers of the squadron were a good deal on shore at different times, riding and walking into the country, and amusing themselves. The passengers also did the same, visiting old friends, and making new ones. However, all that had been done, was nothing to what was now to do.

On the night of the 14th, Bertrand, sen. and jun., Gourgaud, Las Cases, Marchand, and all their servants, the Count de Chabot, the captains of the Oreste and Favorite, and one or two others from the French squadron; Colonel Trelawney, Capt. Alexander, R.E., and the whole of his department; the Judge, and some one or two others, went to the tomb; guards had been placed all round, to prevent persons who had no business there from being in the way. Every preparation having been made in getting up tools and necessaries before the frigates arrived, operations were commenced at twelve o'clock at night, the Abbe being there officially. After great labour and trouble the coffin was got up about ten o'clock the following morning, and was found in a very good state. A tent having been prepared on one side, it was at once taken into it, and in the presence of the Commission appointed for the occasion, was opened, when they at length came to the inner one, that was cut open, and the doctor of the frigate, who was present on duty, lifted up the inside lining at the feet. The jack-boots, (which Napoleon had on when interred,) were found in good condition; the feet part rather mouldy in appearance, but the upper leathers were quite black. Upon the whole of the covering being removed, the body was found to be much more perfect than any one could have expected; the eyes were gone, the nose had a little fallen, the lips were perfect, and the countenance altogether good.

I am told that any one who once had seen Napoleon, would have immediately recognized the clay before them. The left hand was very perfect, the right one not quite so much so. The urn with the heart was there; the cocked hat, coat, and breeches were all in good order, but the colors had faded. The different "orders" were there: they and the epaulettes were very much tarnished. The body was kept exposed for a very few minutes,—and very few can boast of having seen it.

The coffin and pall which had been prepared in France for the purpose, had been previously sent up in a hearse, made for the occasion; after waiting a long time, the signal gun was fired from the alarm house, that the procession had moved: minute guns were immediately fired from High Knoll. Some of the respectable inhabitants now retired, having taken the first opportunity they could to leave the procession; from these we learned that it was close to the town. Shortly after this, the advanced guard of the militia made its appearance, and

formed a line on each side of the street, leaving some others to keep the place clear. Next came the procession itself. It consisted of the remaining portion of the militia, the 91st regiment, (the part of it here) the hearse, with the sarcophagus, covered with the elegant pall, drawn by four horses, covered with black; the Governor and suite, the pall bearers, Bertrand, Gourgaud, Las Cases, and Marchand; the Priest, with two lads bearing censors; the Count de Chabot, as chief mourner; many of the civil authorities, and the French gentlemen who went up to see the exhumation. The sarcophagus itself was very handsome, and was covered with the pall; it was of course of black, and a breadth of white silk, satin or velvet was let in lengthways and breadthways, which formed the cross, it was completely covered with gold bees, and four very elegant gold eagles were embroidered, one on each corner. Minute guns were being fired during the time; the Belle Poule, Favorite, and Oreste, with the French merchant vessels (2) in the roads, had their national flags half-mast, and their yards *au travers*. The band of the militia attended the procession, playing the dead march, and in this way it went directly to the wharf, the line gates being shut the moment it passed through.

His Royal Highness the Prince de Joinville was waiting there to receive it, with a large party from the different vessels-of-war. When the body was about fifty yards from the quay, the Priest went in advance of it, and spoke to his Royal Highness, when they both returned a short way, where they were met by the Governor, who had advanced a short distance from his party, when the two, the prince and the governor, conversed for a short time, and the body was then given over. After this, the governor, staff, and the 91st, which had accompanied the corpse to the wharf, withdrew, and left the French by themselves. Capt. Alexander, the Port-captain, the Consular Agent, and a very few of the inhabitants, alone remaining to see the corpse put into the boat, a large launch prepared for that occasion, with two large eagles on the quarters, and one on the bow. The line guns had in the meantime fired a royal salute, and the Dolphin fired minute guns.

The French not easily getting the sarcophagus with the body into the boat, the beachmaster assisted them in slinging it, that it might be lowered by the crane. The moment it reached the launch, an elegant French flag, (a standard,) was displayed upon a high mast in the launch, and the three men of war had their masts instantly squared, and flags were displayed from all their masts, the national colours being hoisted chock up. Previously to this, the four pall bearers, the priest, the two captains of the Favorite and Oreste, and his Royal Highness and suite, were in the launch, and the rest of the French officers were in six other boats. The band, which had landed played several airs during the time the ceremony before spoken of was being performed; the moment the water procession was formed,—three boats on each side with the launch a little in advance, but between the line of boats with the band close by playing, the men-of-war commenced firing a salute, and the procession moved on; two other salutes were also fired. It was really a beautiful sight, being nearly sunset, and the flashes from the number of heavy guns, 32-pounders, added much to the effect; and at

the same time the yards were manned of all three vessels. This ended the affair of the day.

What took place in getting the body on board the Belle Poule, (where a chapel elegantly fitted up had been prepared in France to receive it,) we do not know. Next morning grand mass was to be performed on board the Belle Poule, when Mr. S. Solomon as agent Consulaire, was invited to be on board,—and a boat by order of his Royal Highness was sent for him; he was the only person from the island there; this gentleman describes the ceremony as being very grand: it lasted two hours. The ship was then again thrown open to the public.

Very little worthy of note occurred after this. The Fantome brig-of-war came, and was visited by the Prince, who expressed himself much pleased with the interior arrangements of that vessel. He was of course saluted as a Prince of the blood royal of France, which was returned by the Favorite,—the Belle Poule not firing a gun after the body of Napoleon was on board. On Sunday, the 18th, the squadron got underway, at about half-past 8 A.M., and when about a mile out, the brig saluted his Royal Highness as Captain of a division, and took her leave for her station, the other steering for France, it is said for Cherbourg.

The old outer coffin, the slabs which covered the grave, and the inner one which covered the coffin, with many other relics from the tomb, have been taken to France. I have visited the tomb since, and nothing is left but one end of the iron railing, one tree, and the chamber which contained the coffin,—to remind us of the spot which contained the remains of the once "Grand Monarque!"

The Prince sent a silver medal to Mr. Saul Solomon, as a mark of his sense of the attention shown by that gentleman to his Royal Highness and suite.

His Royal Highness the Prince de Joinville is a fine, gentlemanly looking young man, about six feet three or four inches high, rather slender; he speaks English very fluently, but is rather deaf; he appeared much liked by the officers and men. Of the frigate I will only say that she is a fine sixty gun-ship; and every one who went on board appeared pleased with the courtesy with which they were treated. The principal English officer who acted on this memorable occasion was Captain Alexander, who was presented with an elegant snuff box; —Colonel Trelawney had also a very handsome fowling-piece given to him,—both by the Prince. A great number of medals were given away; the Prince left the handsome donation of £300 to be divided amongst the poor, and gave the men who were employed in digging up the coffin, £200. There was, in fact, a great degree of liberality in everything done by his Royal Highness.

On the Longitudes of the principal Maritime Points of the Globe.—*By Lieut. Raper, R.N., Sec. R.A.S.*

(Continued from p. 113.)

137. *Salango Id.* Summit.

W. extr. Espin. 74° 30′ 40″ or Sum. about 74° 30′ that is, 58 W. of Guayaquil — 80° 51′ 0″

Bel. D.L. *Pt. St. Helena*, 12ch. 11d. 7′ 30″ / 12ch. few d. 7 45 } 7′ 37″ E. — 80 52 33

(By our presumed position of Pt. St. Helena, 80° 51′ 41″)

We adopt 80° 52′ 35″

138. *Atacames*, Town.

Esp. I. p. 151. 73° 24′ Cadiz, or 1° 6′ E. of *Salango*.

Bel. D.L. *Salango*, 10ch 3^{m} 52·3^{s} or 0° 58′ E.

This quantity 3^{m} 52·3^{s} is from some cause, an error. By comparing the positions of St. Ignatio, Morro Id. off Tumaco, Gorgona Id., and C. Guascama, the discrepancies in these positions, as referred separately to Atacames and Taboga differ from 6′ to 8′ by our presumed positions, and from 8′ to 10′ by the adopted position of Puna. The mean or 1° 7′ agrees nearly with Espinosa, and we shall adopt it: hence

D.L. *Salango* 1° 7′ E. — 79° 45′ 35′

(By our presumed position of Salango, adding 1′ 27″, 79° 43′ 4″)

We adopt 79° 45′ 8″

139. *Morro Id.* Opposite the Town of Tumaco.

Kellet, 1836. D.L. *Atacames*, 10ch. 1° 4′ 21″ E. — 78° 29′ 12″

D.L. *Taboga*, 8ch. 0 50 0 E. — 78 42 16

The latter being preferable, we adopt it (+1′ 16″) or 78 43′ 32″

140. *Gorgona Id.* Playa Blanca.

Mid. Esp. I. 71° 57 40 or 1° 15′ 5″ E. of Taboga — 78° 17′ 11″

Kell. D.L. *Atacames*, 7ch. 1 34 49 applied to our supposed position — 78 8 52

Sum. D.L. *Tabogo*, 9ch 1° 22′ 10″ do. — 78 10 6

We adopt 78° 11′ 11″

141. *C. Corrientes.*

Esp. I. p. 151. 71° 6′ Cad. or 2° 4′ E. of Panama, — 77° 27′ 0″

Bel. 1837, D.L. *Taboga*, 12ch. few d. 2° 3′ 30″ E. — 77 28 46

We adopt the latter, adding 44″ or 77 29 80

142. *Morro de Puercos.*

Esp. I. p. 152, 74° 5′ or 55′ W. of Panama, — 80° 36′ 0″

Which we adopt.

143. *Quicara Id.* [South of Quibo.]

Esp. I. p. 152, 75° 28′ or 2° 18′ W. of Panama, — 81° 49′ 0″

Which we adopt.

144. *Malpelo Id.*

Krus. 81° 10′

Belch. 1837. D.L. *Taboga*, 2ch. 12d.	1° 59′	81°	31′ 16″
D.L. *C. Corrien.* 2ch. d.	4 5	81	33 46
We adopt	81 32		

145. *Santa Rosa.*
Mid. Espin. I. p. 77, 107° 47 30 114° 5″
Krus. 1835, by Lieutenant Ponafidin's obs. 115 6

146. *Socorro.*
Espin. I. p. 77, 103° 53′ or 110° 10′ which with Admiral Krusenstern, 1835, we adopt.

147. San Francisco. Yerba Buena Cove.
Beechey, 1826, at the Fort, 22 obs. of Moon Culm.

	Stars, [21′]	122°	27′ 23″
	Occult. 76 Cancr.	122	30 7
	611 lunars.	122	29 13
Lt. Belcher,	10 do.	122	30 46
Lt. Wainwright	580 do.	122	31 36
	2 obs. Jup. Sat.	122	29 36
1827,	2nd Sat.	122	29 4

According to Capt. Beechey, the diff. long. between the cove and the fort is 4′ 16″.

Capt. Belcher obtained seventy observations of moon culminating stars here. These, by comparison with the Nautical Almanac gave 122° 24′, or very nearly the same as above. As the real value of these results can be deduced only from corresponding observations we shall not involve this determination, and shall adopt for the sake of a round number 122° 24′ 0″ for the observatory, which differs but a few seconds from Capt. Beechey's.

148. *Monterey.* Fort.
Espinosa adopts 115° 35′ (Cadiz) or 121° 52′
Beechey, 1827. D.L. *San Franc.* Ob., by obs. of Moon Culm. stars, } 31′ 0″ 121° 5′ 30″
Belcher, 1838, D.L. *Do.* by Chron. 30′ 12″ }
We adopt 121° 53′ 0″

149. *Benedicto* Id.
Esp. I. p. 77. 103° 37′ 30″ or 109° 55′ Green. Admiral Krusenstern, (1835,) adopts from Captain Colnett, which we follow. 109° 52′ 0″

150. *San Blas.* Arsenal.

Malasp. 1791, Apr. 7, em. I. Sat. Jup.	Plaza Mayor	105°	14′ 31″
	The arsenal 1′ 54″ W. of Pl. May.	105	16 25
Captain Hall, 1822, May 1826, Occult. A. Leo, from which M. Oltmanns adopts		105	15 20
	By 51 lunars, E. and W.	105	17 9
Capt. Beechey, 1827—8, Jup. Sat. from 105° 18′ to 105° 13′		105	15 24
	By lunars	105	15 6
D.L. *St. Francisco* 17° 8′ 35″		105	19 25
Bel. 1833. D.L. *Panama*, 25 44 16		105	16 31

These determinations agree very nearly. We shall adopt for the arsenal 105° 15′ 24″ the received position. This gives for the Plaza Mayor 105 14 34.

151. *Tres Marias.* N.W. one, highest rock.

Sp. Officers.	D.L. *San Blas*, City,	1° 24′ 37″	106° 39′ 11″
Beechey,	D.L. *Do.*	1 23 50	106 38 34

We adopt the latter.

Description of the Musquito Coast.—*By Capt. R. Owen, R.N.*

(Continued from p. 80.)

About seven miles to the southward of Blewfields Bluff there is another entrance into the Lagoon round the south end of Deer Island, a long narrow island running north and south, and forming the eastern side of the Lagoon. This entrance is only fit for canoes, as it has a shallow bar across the mouth, over which the sea generally breaks. The opening is a mile wide; the land on the south side of it projects in a point to the north-eastward.

Guana Cay is two miles and a half north-east of the point; it is a very small cay, about forty feet high, with red cliffs, and covered with vegetation. The space to the westward and southward of this cay is very foul, full of rocks and shoals.

Pigeon Cay is four miles and a half S.b.E. ½ E. of Guana Cay. It makes from the eastward like a saddle; the southern part is 110 feet high. About a mile to the eastward there is a small detached breaker, and half a mile to the north-westward there is a white rock fifty feet high, with some trees upon it. There is a green point on the main about one mile and a half to the westward of Pigeon Cay, from whence the coast trends S.S.E. for twelve miles, to a very prominent bluff point, where the coast turns in abruptly to the westward. This, I think, is Punta Gorda of the Spaniards, although the Columbian navigator places it thirteen miles more to the south-westward.

There are two small cays called the Sisters, about three-quarters of a mile off the coast, two miles to the southward of Pigeon Cay; and a dangerous detached coral patch, one mile and a half to the eastward of the Sister Cays.

Frenchmans Cay is nearly five miles south-east of Pigeon Cay, it is about ninety feet high, with a reef running out from it to the south-westward for three-quarters of a mile. There is a clear channel inside of Frenchmans Cay, but it is recommended to keep to the eastward, as it is very foul ground to the north-westward off the Sisters and Pigeon Cays. Frenchmans Cay lies about four miles off the coast, there is not any danger to the eastward of it.

Punta Gorda is a bluff promontory, with a succession of rocky points and small sandy bays, all round it. The land at the back is mountainous, and covered luxuriantly with vegetation. There are three bluff rocky points on the eastern side of the promontory. The northern one is a black bluff, ninety feet high, with red cliffs extending from it to the north-westward for nearly a mile. The centre point projects in a red conical hill, about 100 feet high. The coast between these northern points is foul for about half a mile off shore.

There is a small cay half a mile E.b.S. of the centre point, well

wooded, and steep to all round, with four fathoms between it and the point. There are also two similar cays about a mile to the southward of the south point, with three fathoms inside of them.

Between Punta Gorda, and Point Arenas, at the entrance of the river San Juan de Nicaragua, the coast falls into a deep bight, called the Bay of Matina. The northern part of this bay, for about six leagues from Punta Gorda is formed into a number of smaller bays, with prominent rocky points, and a sandy beach between. There are several small cays or islets close off the shore in this part of the bay, varying in height from thirty to one hundred feet, covered with vegetation; and one remarkable islet called Paxaro Bovo, standing out about four miles from the coast. It is 135 feet high, steep to all round, with six fathoms close to it. It bears S.S.W. $\frac{3}{4}$ W., six miles distant from the south-east extreme of Punta Gorda. There is a clear channel with from three to six fathoms between it and the coast.

West four miles from Paxaro Bovo is the mouth of the Rama river; there is a bar across the entrance, with five feet water, over which the sea generally breaks. Just within the mouth on the south side, there is an Indian village.

Monkey Point is four miles and a half S. $\frac{1}{2}$ W. from the Rama river. This is the Punta Gorda of the Columbian navigator. It is a prominent point projecting to the southward, the coast beyond it turning sharply to the westward.

The rocky points terminate in the bight of the bay of Matina, about four miles and a half S.W.b.S. of Monkey Point, from whence there is a sandy beach, and nearly a straight coast down to San Juan de Nicaragua.

About six miles and a half south of the last rocky point, (close off which there is a small islet sixty feet high,) is the Corn river; it has a bar across the mouth, that breaks with the least swell; the river is seldom accessible, even for canoes. Here the coast begins to trend to the south-south-eastward.

Five miles to the southward of Corn river there is a remarkable double hill near the beach, that makes from the offing like an island. Spanish creek is two miles and a half, from this hill, and twelve miles beyond Spanish creek is the entrance of Indian river, a small river about five miles to the north-westward of the village at San Juan.

The river San Juan de Nicaragua empties itself into the Caribbean sea by three mouths. The principal one is in the south part of the bay of Matina, where there is a harbour formed by a narrow strip of land projecting a few miles to the westward from the rounding point that forms the south-east part of the bay. The western extreme of this neck of land is Point Arenas. The mouth of the San Juan lies one mile S.S.E. of this point. The whole of the neck of land that terminates at Point Arenas, is said to be subject to considerable changes from the heavy floods that occasionally come down the river from the lake of Nicaragua, and particularly the point itself, which is composed entirely of loose black sand.

There is a village on the southern shore of the bay just outside the river's mouth, about a mile and a quarter S.b.E. of Point Arenas, where a Jamaica trader of the name of Shepherd, has established a factory,

The best anchorage (except during the strong Norths) is about three-quarters of a mile N.W.b.N. of Shepherd's village, in four and a half fathoms dark mud, with Point Arenas N.N.E. about three-quarters of a mile. During strong north winds vessels may find snug shelter to the south-eastward of Point Arenas, towards Point Mandeville, a bluff woody point, nearly half a mile W.b.S. of Point Arenas. To gain the anchorage pass about a mile to the northward of Point Arenas upon a south-west course, and when the houses of the village bear S.E.b.S. steer for them, and anchor when in four and a half fathoms, as above directed. The soundings are extremely regular, shoaling very gradually towards the shore.

TIDE OBSERVATIONS IN THE NORTH SEA.—*Verification of Professor Whewell's theory.*

H.M.S. Fairy, Harwich, August 31st, 1840.

SIR.—On the 24th instant, being in latitude 52° 27′ 30″ north, longitude 3° 14′ 30″ east, with light breezes and smooth water, I deemed it a fitting opportunity for making a further trial on the rise and fall of tide in the middle of the North Sea; and although I was then many miles both to the northward and eastward of the spot, near which Mr. Whewell had previously expressed his wishes that the experiment should be made, yet I thought that if good observations by any means could be obtained at the above position, they would, at the least, serve to shew in some measure the truth or error of that gentleman's theory; either in the one case by a sensible diminution of the vertical movement of the tide, when compared with the known rise and fall on the shores of England and Holland, or in the other by ascertaining the rise and fall beyond a doubt to be so great, as to throw some doubt on the correctness of the theory in question. But, as I apprehend that Mr. Whewell's theory is founded mainly upon the fact, that the tide waves to make high water on the opposite coasts of England and Holland, come from different directions, namely, on the former round the northern extreme of Great Britain, &c. working its way along the eastern coast, and on the latter through the straits of Dover, and running thence along the coasts of France, Belgium, and Holland, and that it might be reasonably inferred that these waves gradually diminish in importance as they recede from their respective shores, or approach each other, there would be left a broadish space about the middle of this part of the North Sea, where no rise and fall exists, and that therefore the waters between the two opposite shores, would assume a convex form at low water by the shores, and a concave one at high water.

Allowing this view of the foundation of Mr. Whewell's theory to be correct, (and I have not his book at present near me to refer to,) this line, or more properly speaking "broad belt," of no rise and fall, would doubtless run for a considerable distance in the north-easterly direction into the North Sea side of the straits of Dover. It would therefore follow, that the fact of my being to the northward of Mr. Whewell's position, would of itself be of no material importance, and by reference to the chart, it will be seen that the longitude places me not many miles to the eastward of the "broad belt" above alluded to. Having

thus reflected, I came to the conclusion that, if Mr. Whewell's views were correct, true observations made in this position would exhibit some indications thereof, and I accordingly made the necessary dispositions.

A rise and fall by the shore is a case which falls immediately on the conviction by the sense of sight; but to ascertain the fact of a vertical motion of five or six feet, in the middle of a great sea, and out of sight of land, is a solution of no small difficulty, and requires the exercise of many precautions to arrive at anything like true results. In making an observation of this description, we find two important obstacles in the way of obtaining these, namely, the stream of tide and the undulating character of the surface of the ground. Under the influence of a strong stream of tide it is utterly impossible, except in very shallow water, to take a strictly correct depth from the vessel, or a boat at anchor, (and therefore a fixed point,) for the line *will* assume a curved form in the act of descent, and after all, from the want of perpendicularity in the line, a large allowance in a depth of nearly twenty fathoms is necessarily left to the exercise of the judgment, and both of these may amount to considerably more than the "rise and fall" sought for. On the other hand, the undulation of the surface renders it essential that the depths should be always taken *over* some discovered elevated spot. The stream of tide, and the undulations of the ground, are therefore alternately opposed to the making of observations, from which direct results can be derived. I experienced on this, as on the former occasion, considerable difficulty in overcoming these obstacles, but I soon found myself compelled to resort to the former plan, (with the addition of such precautions as experience then gave me,) namely that of mooring one boat and taking the depths in another.

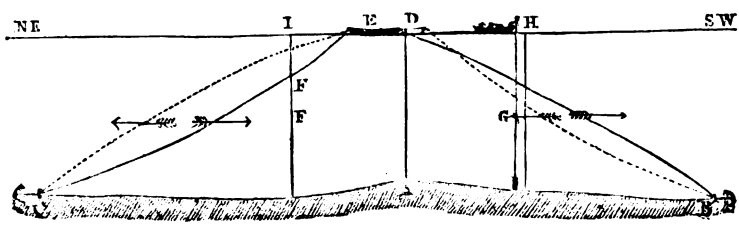
The accompanying diagram will assist my account of the plan pursued. The ship was anchored in twenty-one fathoms and a half, and on searching a convenient rise in the ground, A, was soon found near her, over which there was exactly eighteen fathoms three feet by a well measured line. The second gig, (of twenty-six feet,) was then moored "head and stern," in the direction of the strength of the stream, (north-east and south-west,) so that she should be as nearly as possible over the overfall A. This was accomplished thus, I prepared a coil of one inch and a half rope, and fastened a grapnel at either end. The first grapnel was let go at B. The whole of the line was then veered away, and the second grapnel was let go at C. The gig was hauled along the bight of the rope, until it was found by repeated trial, that the summit of the overfall was exactly abreast the foremost rowlock of figure D. at about six feet from the boat, while the north-east stream was running. She was then secured. At the turn of the tide to the south-west, it was found that the weight of the stream F had operated so powerfully on the bight of the north-east line, as to draw the boat from D to E, so that the summit of the overfall which was before under the foremost rowlock, was found to be eight feet on her bow. On the return of the north-east tide, its operation (G) upon the bight of the south-west line, again drew the gig ahead to her former position D, and the summit of the overfall was found as before, under the foremost rowlock.

It will then be evident that at each change of tide I knew exactly where the overfall was to be found, while taking the depths; and thus prepared it only remained to get the *least*, and *exact vertical* depth over the summit of the overfall, at the intervals determined upon, and which were every half hour. With the north-east stream running I dropped the lead from the other gig about the point H, and exactly in the stream, which I knew would drift her at the proper distance of six feet from the moored boat; the lead was constantly lifted off the ground, so that the line was perfectly straight and perpendicular; and the undulations of the ground carefully observed until the lead passed over the summit of the overfall where the depths were strictly noticed and recorded in the accompanying Table. The boat on this stream was allowed to drift to the point I, and terminated at H, using the same observances and precautions until 5h. 30m. P.M. of the 25th, when the appearance of the weather required my removing.

It will be seen that the observations recorded on the afternoon of the 24th, are not so regular as those of the following day. I attribute this to some degree of *uncertainty* on account of a long swell, perhaps of one and a half or two feet rise, interrupting the observation at the moment of passing over the overfall, but this little swell had nearly subsided on the 25th, and the depths were then recorded with much satisfaction. It will also be noticed that the turn of the stream about noon of the latter day, the depth had increased to eighteen fathoms ten feet, and went on uniformly so, but I investigated the cause of this on the spot, and found that the wind having increased to 2· from W.b.S., and therefore operating upon the starboard bow of the boat, had sidled her a few feet to the south-eastward, so as to bring the eighteen fathoms three feet under her; and that by observing the same distance from the boat while drifting past her, (and which was always on her larboard side,) I obtained eighteen fathoms four feet instead of eighteen fathoms three feet.

From the care and pains taken in these observations, and that under favorable circumstances, I do not entertain a doubt of the correctness of any one of the depths over the summit of the overfall as recorded on 25th, but as this interesting result of observations on an unexpected theory may no doubt give rise to a strong desire for further observations as corroboratives, I shall not fail to make such when I find myself in a position and circumstances to do so with any prospect of success. It is a difficult observation, and can be made but seldom. In the meantime I would offer my congratulations to Mr. Whewell on these results, should they prove in any degree gratifying to him.

WILLIAM HEWETT, *Captain.*



	Times. H.	M.	Depths. fms. ft	Direct (Comp)	Rate. Kts.	Winds. (Comp)	Force.	Remarks.
August 24th, 1840.—Lat. 52° 27 30, Lon. 3° 14' 30" E ☽ age 26·6.	1—		18—3½	N.E. ¼ E.	1·5	SW.	2	
		30	18—3	N.E.	1·4	"	—	
	2—		18—2¾	N.E. ¼ N.	1·2	"	—	
		30	18—2¾	N.E. ½ N.	1·0	"	—	
	3—		18—2¾	N.E.b N.	0·7	"	—	
		30	18—2	N.E.	0·5	"	—	
	4—		18—1	N.E.b.E.	0·3	"	—	
		30	18—1	East	0·3	"	—	
	5—		18—1½	Slack	0·0	S.SW.	—	
		30	18—2	W.b.S	0·3	"	—	
	6—		18—2½	SW.bW.	0·7	"	—	
		30	18—3	SW. ¼ W.	1·4	S.bW.	—	
	7—		18—3¼	"	1·5	South.	—	
		30	18—3½	"	1·5	S.SE.	—	
	8—		18—3½	"	1·6	SE.bS.	—	
		30	Too	dark	for	observations.		
	9—							
		30						
	10—							
		30						
	11—							
		30						
	12—							
		30						
	1—							
August 25t. —Same Station, ☽ age 27·6.	5—	30	18—3	Slack	0·0	Calm	0	
	6—		18—3	SW.bS.	0·5	"	—	
		30	18—3	SW.	1·7	"	—	
	7—		18—3	"	1·0	W.b N	1	
		30	18—3	"	1·3	"	2	
	8—		18—3	"	1·5	"	—	
		30	18—3	"	1·3	"	—	
	9—		18—3	"	0·2	"	—	
		30	18—3	"	0·9	"	—	
	10—		18—3	"	0·5	"	—	
		30	18—3	SW.bW.	0·2	"	—	Tide slack from 10 45 to 11 0
	11—		18—3	Slack	0·0	W.b S.	—	
		30	18—3	NE.	0·3	"	—	
	12 noon		18—4	"	1·9	"	—	
	P.M.	30	18—4	"	1·3	"	—	
	1—		18—4	"	1·6	"	—	
		30	18—4	"	1·6	"	—	
	2—		18—4	"	1·6	"	—	
		30	18—4	"	1·6	"	—	
	3—		18—4	"	1·3	"	—	
		30	18—4	"	0·0	"	—	
	4—		18—3½	"	0·5	"	—	
		30	18—4	"	0·3	W.SW.	—	
	5—		18—4	Slack	0·0	SW.	—	
		30	18—4	S.W.	0·2	"	—	

Excursion to the Lake of Nicaragua up the River San Juan.—*By Mr. George Lawrance, Assistant-Surveyor of H.M.S. Thunder, Com. E. Barnett, in March,* 1840.

(Continued from p. 43.)

Monday 16*th*.—The morning broke serene and beautiful, disclosing all the objects on the lake sufficiently clear for our purpose. The beach is chiefly composed of finely triturated basalt, micaceous, and impregnated with spiculæ of iron, as shewn by the magnet. The beach extends right and left to a great distance has no wharfs or jetties, although very shallow, and exposed to much surf. Here we saw hundreds of women employed in washing and bleaching clothes from daylight till dark. Our instruments and mode of observing excited their curiosity to such a degree that we were rather incommoded by their crowding round us as if they were inclined to mob us for magicians, or something worse. The spot of our astronomical observations was one hundred fathoms south of the old semi-circular fort.

I gave the Ramas a dollar each, with permission to take a stroll through the town of Grenada, all dressed in their new frocks and trowsers, (made on board,) with which they seemed to be highly delighted. Leaving the chronometers in charge of Demeritt, with a strict injunction not to allow them to be touched, nor to suffer the canoe to be moved, Mr. Scott and I were on our way to Mr. Baily's, when we met the Padrone, who informed us that the second magistrate or Alcalde had detained the Indians, and would not allow them to walk about the town, expressing a wish also to see me. Accompanied by Mr. Bailey who kindly profferred to interpret for me, I was conducted to the town-hall, where I found this functionary with his coadjutors, seated in all the plenitude of authority, but certainly without the most remote semblance of what I expected. He requested to know the object of our visit to Grenada, and complained with an air of offended dignity that I had not informed him, nor any of the public officers of my arrival; to which I responded in suitable terms, but finding that all my endeavours to explain the matter were unavailing, I requested him to send to the Gefê Politico for the letter which I brought from San Juan, and then he would see who and what I was. After much hesitation and apparent suspicion that I was not what I seemed to be, he at length consented to have it produced, and to my very great surprise and amusement, I found that this great character at the head of the table before whom I was arraigned like a criminal, could not read his own language, but handed the letter over to one of the others, who after much bother of spelling, &c., managed to make it out, but not to their satisfaction. The Ramas were liberated, but I was requested not to leave the town until this momentous affair had been further deliberated upon.

I ought here to remark that the central Americans and new Grenadians have long apprehended an irruption of the Musquito Indians, to whom these Ramas are in some way connected, and knowing that our government have recognized the former as a nation, they, the authorities in Grenada, might very probably suspect that our visit to this unfrequented

place had some sinister view, as among other questions they appeared anxious to know whether or not I was a military officer.

An hour had scarcely elapsed after the above ridiculous scene when I was again summoned before this august tribunal, and requested to deliver up my observations, to which not unreasonable demand, I replied that "although I had them not about my person they were extremely welcome to a copy of them." After a deal of delay, without further insisting upon my papers, they consented to my departure, and to prevent a repetition of another interruption, I requested to be provided with a passport to Nicaragua, which they declined, saying "It was not necessary;" and neither did I afterwards find any occasion for one. Before they would, however, allow me to leave this inquisitorial court, in which they could elicit nothing to alarm their apprehensions, they made a demand upon my purse for four dollars, being, as they said, "a debt owing to some one by our Padrone;" which I agreed to pay on condition that they would give a receipt to Mr. B. Such petty annoyances as this, are, I am told, every day occurrences: instead of assisting and forwarding the views of merchants, and other foreign visitors, on their arrival in this town, they throw every impediment in their way, and sometimes practice shameful extortions.

On our return to the beach we found our gallant Ramas all dead drunk, stretched around the canoe as if they were so many corpses. Like all other Indians who have had intercourse with Europeans, and above all, I am ashamed to say, with our own countrymen and selves, they have acquired a fondness for ardent spirits, to which they make the most deplorable sacrifices of life, limb, and property.

The town or city of Grenada is situated about half a mile from the Lake, and about one hundred feet above its level; the only conspicuous objects on approaching from the eastward are the cupolas of the two principal churches, viz. the parochial and the Guadeloupe, which with the town-hall and barracks, situated in the plaza or square, are the chief buildings in Grenada: the houses, with one exception, are all of one story, built in the old Spanish style, and so arranged that the streets run at right angles to each other; the latter are roughly paved, but not much trodden, so few people are to be seen moving about, and there is such an apparent absence of shops and stores that the stranger would be led to conclude that the place was almost deserted, and trade completely at a stand still. But I am told that a considerable business is carried on in a clandestine manner, owing to the existing anarchical state of the country where there is little or no security for property, the traders who are generally foreigners, finding it politic to make as little display as possible, in order to elude the exactions of a rapacious government.

The population of Grenada is estimated at 9,000, of whom only 300 can call themselves the legitimate descendants of the old Spaniards, and they are not entirely white; all the rest are a spurious progeny, called in the language of the country Ladinos or Mestizos, of whom it is said as of all the inhabitants of the state of Nicaragua, that they are grossly ignorant and depraved, even the most enlightened of them are quite apathetic to everything connected with their civil polity, the principles of which they neither understand nor respect. Central

America as one republic, can hardly now be said to have any virtual existence, as the federal states have all revolted from each other, and are struggling for an independence which must eventually terminate in their total annihilation. In the present disorganized state of things, it were vain to look for order or regularity in any department of the government, and therefore, any statistical information I might have attempted to glean respecting its finance, commerce, &c., could not be obtained, or at least relied upon for its authenticity.

The exports from Grenada chiefly consisting of indigo, hides, and Brazil wood, are conveyed in bongos down the Rio San Juan to the settlement of that name, where they are deposited in warehouses or transhipped as often as opportunities offer to Jamaica, New York, and other places. At present a Genoese vessel is waiting at San Juan for a cargo of indigo. Coffee, cacao, sugar, maize, sesamum, &c. are cultivated in the vicinity of this town, but not in sufficient surplus quantity to constitute articles of commerce, although in days of Spanish dominion they were all exported.

The nearest mines are in the district of Segovia, distant about forty leagues from Grenada. Of their operations I had no time or opportunity to learn any particulars. The regular troops are I am told few, and badly equipped,—the militia more numerous, but as many may be supposed still worse appointed, continually employed skirmishing about the country in this endless war of independence. They are seldom quartered for any length of time in one place; at present there is not a soldier to be seen in the town of Grenada, and all its military defences (if it ever had any,) are completely abandoned and gone to decay. The old semicircular battery on the landing place might as well be called by any other name, for it does not contain a single piece of ordnance of any description.

Of the ecclesiastical establishment, I know nothing more than that there are five Catholic churches in this town, formerly in the care of Franciscan Friars, but now under the pastoral care of rudely educated colored men, who for want of a bishop of their own, are ordained by some episcopal authority in Carthagena. There was once a bishopric, but now there is not one in the whole republic. All the lands belonging to the convents prior to the revolution, are at present in the possession of the government, and distributed as the government thinks proper. The only existing nunnery is at Guatemala. Realejo is the only good harbour on this side of the isthmus, capable I am told of admitting vessels of considerable size and numbers, and might in the event of a better communication with San Juan, and a more peaceable state of this distracted country, become a place of great commercial importance, but its distance from Grenada being about fifty leagues, is a serious objection. The nearest part of the Pacific Ocean to Grenada is a small bay called Laceres, where there is neither anchorage nor settlement,—one day's journey across the country.

Leon, the capital of the state of Nicaragua, is distant from Grenada about forty leagues, and four leagues from the shore of Lake Managua, inhabited chiefly, if not altogether by colored people, who bear a notoriously bad character. This lake is about sixteen leagues long, thirty-five in circumference, from twelve to fifteen in width; in depth

not so great as that of Grenada, and its level is said to be twenty-eight feet three inches above the latter; its nearest approach to the Pacific is ten leagues in a direct line. According to Mr. Bailey, I understood Captain Belcher visited this part of the country about eighteen months or two years ago; his information will of course be more authentic.

On the road to Leon, about three leagues from the town of Grenada there is a remarkable brackish pond called Apoyo, apparently contained in the crater of an extinct volcano, which does not ebb or flow, and is not sensibly diminished by evaporation. In the vicinity of Massaya there is also a small fresh water lake; they are both, no doubt, the result of volcanic agency by which this part of the isthmus has often been violently convulsed.

The Lake of Grenada, or Nicaragua, is connected with that of Leon or Managua, by the river Panaloya, which according to Mr. Bailey's survey has its entrance into the former in latitude 12° 10′ N., longitude 85° 50′ W., bearing N. 25° E. (true) from the battery of Grenada, from which it is distant fifteen miles and a half; its exit from the latter, or Lake Leon, is in latitude 12° 15′ N., and 86° 3½′ W. longitude.

This communication between the two lakes, which in Roberts's Narrative is asserted to be effectually shut up by an effusion of lava, varies in its width from twenty-five to one hundred fathoms, and has a depth of from three to eighteen feet in the navigable parts of it. Mr. Bailey makes it eighteen miles long, including all its windings, but as the distances in his survey of San Juan were found to be rather short, I think we may fairly allow an additional mile or two, making its actual length inclusive of all sinuosities, to be twenty miles.

It is navigable for canoes as far as the village Pasquel, situated three miles and a half from the Lake Leon, beyond which for the distance of nearly a mile the channel is so superficially imbedded by a stratum or ledge of rocks, that in the dry season the stream is confined to a few water-worn fissures; but after a continuance of rain, the channel is overflown, and the water rushes over the rocks with great impetuosity.

Near the village of Tipitapa, not far from Lake Leon, there is also a fall of nearly thirteen feet, so that if ever a navigable communication is to be effected between these two lakes, this part of the Panaloya is not available in its present state. Adjacent to it there are several settlements.

Viewing these lakes as the grand reservoirs of numerous mountain torrents, and rivulets, from which the river San Juan is the only outlet, it must necessarily happen that their depths will vary with the change of season; accordingly we find by Mr. Bailey's registration that there is a difference of six feet six inches in the depth of Lake Nicaragua between the wet and dry season, but of course this is not invariably the same.

The evaporation over an area of nearly 3,150 square miles, where the temperature ranges throughout the year between 75° and 90°, in conjunction with the continual efflux by the river, will effectually keep in check any extraordinary overflow, and must be taken into account in making a pluviometric calculation. Before leaving Grenada I must again express my thanks for the attention we received from Mr. Bailey

and his friends. To him I am chiefly indebted for the little information I have been able to pick up, and only regret that our stay had not been longer.

Temporary Rudder.

H.M.S. Mastiff, Orkney, Oct. 26th, 1840.

Sir.—Of all the accidents to which a ship is liable the loss of her rudder is allowed to involve the most serious consequences, and although many ingenious expedients have from time to time been devised to remedy this evil, yet owing to complication in the construction of the means, or difficulty in application, the question still remains open for useful inquiry; this, I tender as my excuse for troubling you with the following plan for shipping and securing a temporary rudder at sea; and if you consider it deserving a place in your valuable periodical, you will oblige me by its insertion.

I am, Sir, your obedient servant,

A. D. Jolly,

To the Editor of the Nautical Magazine. *Mate.*

Fig. 1.

Fig. 2.

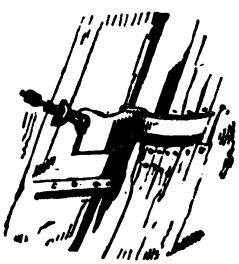


Fig. 3.

Let all ships before being undocked be fitted with four eyebolts in the sternposts, as in Fig. 1. *Chains* about the size of the ship's topsail sheets to be rove through each; they, until wanted, may be stopped neatly up the sternpost, and the ends brought inboard through the rudder hole.

Let two pieces of iron, or *temporary gudgeons*, be forged in the form of Fig. 2, to be held in charge as part of the ship's stores; the circular part to be of sufficient size to slip easily over a spare topmast of the particular rate, and the jaws to be of the exact model for the reception of the sternpost; these are the precautions necessary, now for their application.

Let a temporary rudder be constructed according to the plan proposed by Sir Thomas Pakenham, agreeing in every particular with the exception of calling into use a lower cap; the temporary gudgeons to be built into the rudder at distances corresponding with the bolts in the sternpost: the chains to be shackled to the jaws of the gudgeons on their respective sides, and their remaining ends to be led, the lower to the main and the upper to the mizen channels.

When the rudder is lowered into the water it will be evident that, with a hawser to its head to bring it through the rudder case, and the *sure* direction given it by the chains to the sternpost, the operation of shipping it is rendered both easy and certain.

Fig. 3, represents one of the gudgeons in its proper position, the length of the neck serving to keep the rudder clear of the old gudgeons, and broken pintles; the depth of the jaws keeping it steady on the sternpost, and the circular part embracing the spare topmast, which will revolve freely, rendering the steering of the ship as simple and correct as with her proper rudder, &c.

Voyage of H.M.S. Beagle, on a Survey of the Coast of Australia.—*By a Naval Officer.*

(Continued from p. 39.)

On a subsequent visit, we had the pleasure of meeting with, and sharing the hospitality of Mr. Curr, and received much useful information from him; among other things he spoke of the local attraction, which he, as well as ourselves had observed. Our observations gave the variation several degrees different from what it was at the last stopping place, which we knew was near the truth, and also was at variance with those taken on board.

Mr. Curr first observed this in erecting fences, and for some time was puzzled to account for the deviation from a parallel line of those he was them employed about, and the ones formerly put up; so by this it would appear, that the metal is in larger quantities in some parts of this promontory than in others. And this is the more remarkable, for in no other part of the strait we had yet visited, was anything similar found to exist. The spot which we observed on was immediately under the cliff, on the north side of the head.

The almost incredible size of the trees near Circular Head is well worthy of remark; Mr. Curr mentioned having seen one thirty-six feet in girth, in the hollow of which six people had taken up their abode, and had sufficient room to sit round a table and enjoy their meals.

Those of from twenty to twenty-five feet girth, were common within a short ride of the establishment.

From the hill on which the town is situated, the land slopes gradually to the northward, and terminates in a low spit, off which are sunken rocks to the distance of a mile or more. It was on a part of this reef we grounded, and I should recommend a good berth being given to this point in rounding, as the full extent of these dangers is not at present accurately known.

The necessary observations being completed, we left Circular Head, and with a fresh south-west wind stood away for the river Tamar, which we entered the following day, and came to an anchor in Port Dalrymple, off a white buoy on the west side of the channel, two miles from the Low Head.

As the principal object of touching here was to measure the meridian distance between it and Port Philip, there was not sufficient time to visit Launceston, the principal town, miles from the entrance; but from all we could learn, it was like most of these settlements, making rapid strides. Ships of four hundred tons now reach within a short distance of the town.

George Town on the right bank of the river about four miles from its mouth, was once the head-quarters of the regiment, which gave it some importance; but since its removal to Launceston, it has become of little note, and has now more the appearance of a village falling into decay, than the sea-port of a flourishing colony.

The river Tamar is difficult of access, in consequence of the rapid tides which set directly across the banks; but the pilot is generally in readiness to board vessels when about a mile from the entrance. The

Hebe reef, two or three miles W.b.N. from the low head is the only outer danger, and must be given a good berth to in passing, for in moderate weather it does not shew until close upon it, and there is no buoy to point out the spot.

There is an excellent lighthouse situated on the Low Head, a hundred and fifty feet above the level of the sea. It is painted white, and shews in good relief against the dark green behind, serving readily to point out the entrance to the river. By night it exhibits a bright revolving light.

On the 22nd at daylight, we weighed from Port Dalrymple, and with a fresh south-westerly wind stood across the strait towards Port Philip, carrying tolerably regular soundings from forty to fifty fathoms, over a mixed bottom of mud, sand, and shells. At noon the following day we passed Point Nepean, and stood up the west channel with three and a quarter fathoms, (the least water,) and at 7 P.M. came to an anchor in Hobsons Bay in four fathoms, with Point Gellibrand bearing south half a mile distant.

Hobsons Bay is a tolerable anchorage, so long as it does not blow strong between south and southeast; with the wind in this quarter, a short chopping sea quickly gets up. We were told that the Rattlesnake, twenty-eight, pitched her forecastle under during one of these breezes.

Vessels of three hundred tons and under, may bring Point Gellibrand to bear S.b.E., but even then, boat communication is at times cut off with Williams town, off which is the anchorage. This is denominated the seaport, it is situated on the north side of the abovenamed point, and at present consists of about a dozen houses, including the government stores. Scarcity of fresh water is a considerable drawback to this becoming a populous town; but as no vessel of burthen can pass up the river in consequence of the mud flats at its mouth; it may in time become of importance, and means will be found to remedy the evil that at present exists. The only danger in entering Hobsons Bay is from a ledge of rocks running off Point Gellibrand:—a white buoy is now placed on the extreme.

As we had heard a great deal about the town of Melbourne much pleasure was anticipated in visiting it; accordingly the morning after our arrival, parties were formed for the purpose; some chose the walk between it and opposite where the ship lay, others preferred the view of the river Yarra-Yarra, and went up in boats, all arrived however at the same spot; were highly gratified by their visit, and found that the flourishing state of Melbourne had not been exaggerated.

It is situated on the right bank of the Yarra, just above where the salt water joins the fresh, and abreast of a ledge of rocks, called the Falls, that interrupt the course of the stream, at this point about thirty yards in width.

The number of inhabitants it is scarcely possible to ascertain, owing to the constant arrival of settlers from Sydney and Van Diemens Land, perhaps at this date fifteen hundred may be near the mark, but if the rapid influx goes on in its present ratio it will shortly become a place of considerable importance, (its locality being so advantageos) and a valuable acquisition to the crown.

The authority at present is vested in the hands of the Police magistrate, Capt. Lonsdale of the 4th regiment; but some one holding higher rank and power is daily expected to take the reins of government; this indeed is becoming highly requisite.

The whole country in the vicinity of the river is low; and some parts are said to be flooded during the rainy season; particularly that between Melbourne and the anchorage. The soil is rich and fertile, and has a pleasant appearance when connected with the surrounding, and not very distant mountains.

During our stay here the weather was generally fine, with fresh south-westerly winds; we had once to endure a suffocating breeze from the north-west similar to those so frequently experienced at Sydney, it rose the thermometer, and the following day an equally cold wind came from the same quarter.

How, and what can cause these extraordinary changes? We were constantly annoyed with them on the northern coast last summer; but then the wind was from the south-east. This would rather militate against the existence of an inland sea, and lead one to the idea that the interior of this tierra incognita is a sandy desart, somewhat similar to the continent of Africa.

We sailed from hence on New Year's day, and with a fresh southerly wind worked down to the outer harbour of Geelong, and in the evening came to an anchor in three fathoms and a half, with Point Henry bearing west a mile distant. This extensive bay was found to be much incommoded by sandy flats running off the low northern shore, and several tacks had to be made where we supposed a direct course could be shaped from the former anchorage.

From Point Henry, a grassy bluff with a small lawn-like plot, at its foot, a bank stretches across to the opposite shore, this bar has twelve feet on it at ordinary springs, and with little trouble a sufficient space may be cleared to admit vessels of moderate burthen to the inner harbour. The town of Geelong is at present in its infancy, but from its situation on the banks of the Darwin river, where the soil is good, and extensive cattle runs being adjacent, the settlers prognosticate a large and populous town, arising in the course of a few years.

Connecting this part with the former work, detained us the next four days; when we returned to Hobsons Bay to forward dispatches to England. The same difficulty was experienced in getting out of this place as when going in; but it appeared that by keeping the Indented Head shore aboard, the only deep water was to be found leading to Geelong. We had not sufficient time to make a complete plan of this harbour, indeed as our principal work lay with the Straits, it was considered a loss of time to attempt it.

I received here the pleasing intelligence of being confirmed to the rank of master, which, although long deferred, was nevertheless welcome, and served in some degree to improve my health, which for some months had not been so good as it was, previous to my being wounded on the north-west coast.

On the 6th of January, taking advantage at four A.M. of the land wind, we stood towards Arthurs Seat, with the view of passing out to sea through the south channel, but the wind coming strong from the

south-west, we brought up in Capels Sound, a league to the westward of Arthurs Seat.

It blew a hard gale the two succeeding days from the south-west with heavy hail squalls; so that it was not until the morning of the 9th that we passed through the channel before-mentioned with a light easterly wind. The depth of water varies from four fathoms at the eastern end (which is formed by two narrow sand spits,) to seventeen, and even twenty-four fathoms as you approach Point King; from thence towards the entrance to the port, it shoals again to ten, and seven fathoms; the bottom being irregular, the tide sets rapidly through this passage, and *across the banks* at the eastern extreme. If ever Melbourne become of sufficient importance to have large ships trading to its port, this is the channel that must unavoidably be used, and in my opinion for outward-bound ships from Hobsons Bay, it is far preferable to the western one, now generally used, for with the prevailing wind a ship can lie along this channel, whereas in the other it is a dead beat through, with only a quarter of a mile space in one part, and the whole is over shoal ground.

ÆOLIAN RESEARCHES.—No. IX.

(Of the seventeenth century. Continued from p. 784, of vol. for 1840.)

WE find by experience that some winds produce very odd effects in many sorts of animals and plants; and others convey into the air spirits so subtil and penetrating, which dissolve the hardest of metals. That inquisitive Jesuit, in his natural history of the West Indies, gives us an account of the iron grates, which in those parts were so much rusted and consum'd with the winds, that by only pressing them between your fingers they dissolv'd into powder. Which has likewise been observ'd of the air about London (whether from those corrosive salts, or the great quantity of sulphur contain'd in the sea-coale) that it does not only spoyl tapistrys, and beds, tarnish the most polisht silver plate, fowl linnen and paper, and sully all sorts of household-stuffe, with it's fuliginous steams, but has a very sensible operation on the iron or brasse in their chimnies and windows; which it corrupts, and causes to rust much sooner then in the country. I shall not undertake to philosophise concerning the cause of the former phænomenon, unlesse wee were better acquainted with the situations of those places in the West Indies: Only wee are sufficiently inform'd, that in some of the American kingdomes, the earth exhales very noxious vapours, that occasion a strange contagion in the air; though impartiall nature has recompenc'd this inconvenience with many blessings which the old world did never enjoy: In the plains of Peru they have a wind which kills men (if wee may give credit to the Spanish writers) without the least sense of pain, and afterwards by it's extreme subtlety and cold preserves them from putrefaction. Since the first discovery of Almagro, great numbers of persons have been found dead in those desarts; some lost their feet and hands, that were rotted by these virulent blasts, which happened to the generall Costilla, and many others of the

christians who travelled in those parts: Insomuch that the Spanyards, who formerly us'd to passe over the plains between Peru and Chile, rather undertake a laborious voyage by the sea-side, then hazard the disasters which they might otherwise expect from these winds. But I insist not upon instances, for which wee have no further evidence of truth, then the credit of the relators: yet wee must suppose that there is quite another face of nature in those remote climates; therefore wee ought not to explode all things as false, that are only different from such observations, to which wee have been accustom'd in these parts of the world.

The winds neare Serra di Lyone, where the neighbouring mountains abound with many putrid and sulphureous exhalations, breath out in such venemous blasts, that they breed pestilentiall feavers, and other diseases in the inhabitants. So very considerable are their influences, not only in other regards, but to the benefit, or prejudice of human life: For a kind temperature of the heavens, serene air, and wholesome winds, which is the atmosphericall dyet, are full as necessary to the health and welfare of mankind, as good meat or drinke.

Those likewise which have their origines from such subterraneall caverns, that exhale noxious fumes, like the killing damps in deep pits or mines, must needs by this means, mingle a great allay, and adulterate the purity of the air, when the virulent particles are carry'd and disperst by the winds: what can wee expect but a mortall and unwholesome vapour from such places, as the Denne of Charon near Naples, where the deadly venom transpires insensibly through the pores of the earth, and suffocates all animals that enter at the mouth of the cave. Empedocles, by stopping up one of these poisonous caverns, and hindring the eruption of the winds from thence, is said to have cur'd an epidemic sickness which they had occasion'd in all the citys thereabout. And in all other recesses under ground, where the pregnant womb of the earth is stor'd with so many severall sorts of minerals, and salts, if they ascend from thence, they must needs fill the atmosphere with as great diversity of vapours: And therefore those winds, which are generated in the sulphureous soil of Puteoli, smell of brimstone a great distance from thence; and those which come from infected places, propagate the contagion, and bring death along with the infectious air.

Thus wee see winds are not all vested with the same qualities, nor alike friendly, or injurious to human life; but they sometimes are replete with those arsenicall and deleterious corpuscles, that convey into our blood the seeds of diseases; and otherwhile with such agreable juices, that recreate and cherish our spirits, and contribute to longevity and health.

But the wonderfull effects of winds are more obvious to reason, then perceptible by the justest criteriums of sense; since the invisible agents are diffus'd every where; and the air is as the common vehicle of all things, where so many different sorts of saline and minerall spirits are continually floating, and driven to and fro in the atmosphere: So that, I believe much of that naturall magic, by which distant bodys act upon each other (though wee usually ascribe it to occult qualities, or certain sympathies and antipathies in matter) to proceed from no

other cause then the secret operations of winds: For they are the carriers of the universe, and transport from one place to another odors, diseases, fertilising salts, the seeds of animals and plants, and most other things, of which wee can give no account how they came there; as vegetables, that spring on the tops of houses, or those which are observ'd to grow on the walls of castles, and ancient theatres; nay sometimes whole groves and vast forrests have at first had no other planters then the winds.

But to attempt a full collection of all their properties and effects, must be the work of posterity; which possibly may require many ages e're it be brought to perfection: And to complete the many desiderata of this phænomenon in an universall history of winds (for wee have only the outlines of this vast design in Sir Francis Bacon,) it would be adviseable to make an exact table or ephemeris, for many years together, and so dayly compare the observations of their prognostiques, the quarters whence they blow, their duration and properties; how farre they agree or differ from what has been already delivered in books. Many of this nature are set down by the Lord Verulam, but for the most part collected out of Aristotle and Pliny, though with lesse improvement then might have been expected from that illustrious person. However, since the learned world has been so long impos'd on by tradition; we ought, in the first place, to be throughly informed concerning all matters of fact, and afterward consider to what hypothesis they may best relate: and because that must be the result of long experience, and observation, I can only commend this province to those curious persons, who have leisure, either to make such new discoveries of their own, or detect the vulgar errors of former times.

It should first be examin'd what influences they have upon human bodies; in relation to their sickness or health: and those who are inclin'd to gowts, catarrhes, infirmities in the sight, distempers of the lungs, epilepsies, deafness, &c. might be able to collect observations of this nature; what inconvenience they are sensible of from any sort of winds.

Those celebrated aphorisms of Hippocrates concerning their medicinal qualities, ought to be considered; how farre they are found experimentally true and consonant to the observations of the moderns: For if we rightly understood the different temperatures of the air and winds, and how to apply this remedy to many distempers, it might possibly prove the most successfull part of physic.

Next, as to the diversities which arise from the quarters whence they blow: whether the east and north betray not in these countries continuall symptoms of siccity and cold; and the south and west, of heat and moisture. Likewise, as to their effects upon animals; Since the south has a thousand malignant influences; and, according to our English proverb, the wind at east, is neither good for man nor beast. Then, which of them are most agreable, or inauspicious, to the vegetable life; what observations of this nature can be drawn from agriculture, and gardening? which are those winds that are most favourable to the sowing and ripening of corn, or most pernicious for breeding worms in plants, or for blasting and destroying their fruits.

What directions this doctrine might afford to architects, in choosing

the situations of dwellings: whether the air of many houses might not be meliorated by giving a freer admission to the winds; since it has been observ'd, that severall dwellings here in England, which were environ'd with huge woods, or sometimes had only a clump of trees standing towards such a quarter, have been always obnoxious to sickness, till they happen'd to be cut down,and the places render'd pervious to the winds: Sometimes only the changing of a window, or door, from the south, and exposing it to the north, has done a great cure. It is well observ'd in the relation of my Lord Howard's voyage to Constantinople, that, at Vienna they have frequent winds, which if they cease long in the summer, the plague often ensues; so that it is now grown into a proverb: that, if Austria be not windy, it's subject to contagion.

In the next place, what advancement might be expected from hence to the art of navigation, since, I am confident that more ships perish, by our ignorance of the winds and currents, then by any other disaster which happens on the seas: If the masters of ships were oblig'd to give in journals of their voyages to all parts of the world; and these for many years compar'd with each other, we should not only be able to collect a complete history of the trade winds, and monsoons, and their variations in the severall latitudes and meridians, (which would be of very great importance) but should find, that there are many anniversary tempests which might be very certainly foretold by the seasons of the yeare, and provision made accordingly; beside other usefull circumstances of the annuall motions, and reversions of the seas, according to the declination of the sun (which hitherto most of our seamen have thought to proceed purely from chance) might be reducible to so regular observations, that, beside the great improvements which would redound from hence to philosophy, and all naturall knowledge; it would be of no small advantage to the interest of trade and navigation. This noble art is worthy of philosophers and mathematicians, and the mechanical part ought to be esteem'd the least, that should accomplish a skilfull seaman. So that, men of letters ought not to dispise this, as a rude and illiberall profession; to which we must be beholding for the most considerable discoveries of nature.

Then, as to their continuance or succession: It has been noted that if the winds change conformably to the motion of the sun; as from the east to the south, from the south to the west, &c. they seldome return thither again, at least for no long time: But, if there changes happen in a contrary manner to the course of the sun, as from west to south, from south to east, &c. they usually revert back again to the former points, before they complete the whole circuit of the compasse: We have this remarque in my Lord Bacon; and he disdain'd not to borrow severall observations of this kind, from husbandmen and sheapherds; who are lesse within doors, and more concern'd in all the vicissitudes of the yeare, whether or no they are like to expect kind seasons for their corn and flocks.

(Continued from p. 53.—CL crew lost. CS crew saved. d drowned.)

VESSELS.	BELONG TO.	MASTERS.	FROM.	TO.	WRECKED.	WHEN.
Abbotsford 212	———	———	Sundrlnd	Oldhaven	ShoeburyN	Dec. 21 cs
Active	Brixham	founderd	at her an	chor off	Yarmouth	—— 31 cs
Agnes	———	Myles	Forth	Dundee	Off Dundee	—— 27 cs
Albion 215	Rochester	Price	Sundrlnd	Rochestr	run down	—— 31 cs
Alert	———	Beale	———	———	Nab Light	Aug. CL
Alexander	Sunderland	———	Yarmoth	Sundrlnd	Flambro' H	Jan. 10 cs
Alice	S. Shields	Scotland	London	———	Blythe	—— 8 cs
Barbara	Newcastle	Dove	Newcastl	Woodbrg	Woodbridg	—— 4 cs
Beverley 220	St. John	Brewer	Quebec	Liverpool	Redwf S.	—— 4 cs
Blucher	Newport	———	found'red	in bay of	Biscay	Nov. 30 cs
Boyne	St. John	lismast'd	waterlgd	abandn'd	Off Sable I.	—— 30
Brilliant	Shields	part of	her stern	picked up	at Filey	Dec. 22
Clyde	By fire	———	Newcastl	Gibraltar	Corunna	—— 19 cs
Cunningham 225	———	Gladson	Kertch	Falmo'th	I. Zea	Nov. 27 1 d
Druid	Whitby	Shaw	Hartlep'l	London	Foundered	Dec. 31 cs
Edward	———	Darnston	Sundrlnd	London	Bull Sand	Jan. 10 cs
Elizabeth	———	———	Seaham	———	Gunfleet	Dec. 18
Emma	Newcastle	Clark	London	Newcastl	Scarboro'	Jan. 10 cs
EmmaHudson 230	———	———	———	———	Odessa	Dec. 1 CL
Fidler	———	———	London	by fire	Thames	—— 25 cs
Francis Lawson	Hull	Barker	N. Scotia	Liverpool	Abandoned	Nov. 28 cs
George and Mary	———	Golightly	Calcutta	London	Andamans	Aug. 5
Guernsey Lily	Guernsey	———	Southton	Jersey	Minquiers	Dec.
Henry Biggs 235	———	———	———	Africa	Conflict R.	Nov. 25
Hesperia	Scilly	———	———	———	Christ'nsnd	Dec. cs
Indian Oak	———	———	———	———	Formosa	Sept. cs
Isabella	———	Brodie	Glasgow	Liverpool	Horse Bank	Jan. 3 cs
Jean Gordon	Ayr	Simpson	Cork	Ayr	Pt. Patrick	—— 3 3 d
Janet Andrews 240	———	———	Africa	London	Chausey	Oct. 22
Kilmarnock	———	Champln	———	———	Blythe	Dec. 19 cs
Kite.	Newcastle	———	———	———	Ningpo	———
Lady Middleton	Ipswich	———	———	———	Cross Sand	Jan. 1 3 d
Leonidas	Belfast	Arnold	Quebec	Dublin	Abandoned	Dec. 7
Linnet 245	———	———	Gefle	Hull	Gothland	Nov. 26
Lord of the Isles	———	———	Londerry	Quebec	St. Peters	Sept. 21
Mary Walker	Glasgow	———	Demrara	Glasgow	Girvan Bay	Jan. 4 cs
Matchless	———	Ditts	London	Gambia	Red Bank	Nov. 25
Mersey	Yarmouth	———	Yarmoth	Shields	Flambro' H	Jan. 10 cs
Myrtle 250	St. John	Passed	abandond	off Sabl I.	———	Nov. 30
Odessa	London	Hall	Shields	London	Hasbro' S.	Dec. cs
Osnaburgh	———	Snook	Renfrew	Newcastl	Sunderland	Jan. 5 cs
Penzance Packet	———	———	Cork	Penzance	Abandoned	Dec. 20 cs
Permit	———	———	St. David	Pernamb	Gravelines	Jan. 2
Robt. Symons 255	———	———	———	———	Odessa	Dec. 1 4 L
St. Patrick	———	———	Portugal	Crbonear	Maden I.	Nov. 26
Sarah	St. John	———	———	———	Snoddy H.	Nov.
Schooner	wreck seen	sunk	off the	Dudgeon	14 miles	Dec. 29
Schooner	———	———	———	———	Abersytwth	Jan. 4
Snowden 260	apparently	a part of	her stern	picked up	at Filey	Dec. 22
Thames	London	Gray	Dublin	London	Scilly	Jan. 4 60L
Unknown	Brig	seen sunk	under	Salt H.	Wells	Dec. 22
William	———	———	Kiel	London	Dogger B.	Nov. 27 cs
William & Maria	London	Drewett	Cork	London	run down	Dec. 18 cs
W. Symington 265	London	Hurst	Hull	London	Foundered	—— 29 cs
Zena and Harriet	Barnstaple	White	Newport	———	Mort Sand	Jan. 5 cs
Zephyr 267	Newcastle	abandond	passed	———	48N., 37W.	Dec. 14

Houtman's Abrolhos, *Australia.—Extract of a letter from a Naval Officer.*

The Abrolhos Islands are divided into three distinct groups, the southernmost has been named Pelsart group, the middle Easter group, and the third the Northern group; they are separated from each other by broad channels, in which no dangers appear to exist; that which separates Pelsart from Easter group is nearly five miles wide, and was sailed through by the Beagle.

On Pelsart group we found great quantities of wrecks, some apparently very old, being probably the remains of the Batavia, Pelsart's ship; and on one of the north-western islets of that group, which agrees with the Dutch description of the place where the Zeewyk was wrecked in 1729, we found a brass 4-pounder swivel of singular construction, and many ornamental gilt articles for harness, also two Dutch doits bearing date 1707 and 1720; and from the number of bottles, pieces of glass, pipes, &c. that were found on this islet, it is, no doubt, that upon which the crew of the Zeewyk remained so long, while building a sloop from the remains of the wreck, and in which they put to sea, by the channel through which the Beagle sailed; it has, therefore, been named Zeewyk passage.

Each of these groups form a lagoon of circular shape, or more resembling a horse shoe open to the northward; they afford good anchorage on their northern sides in from fifteen to twenty fathoms water, and in the lagoons formed by Easter and North groups, are two excellent harbours.

Their western boundaries are formed by a barrier reef upon which the sea is always breaking heavily. On this side they are very steep, as at four miles distance we could not get bottom, with nearly two hundred fathoms of line, whereas to the eastward the greatest depth does not exceed thirty-five fathoms across to the main land.

The islands of the two southern groups are very low, being in no place over twenty feet high, but generally from seven to ten feet. The two principal islands of the northern group are much larger and higher than those to the southward, being in the highest part fifty feet; they are covered to a considerable depth with a sandy soil, which is composed chiefly of decomposed shells and coral, and nourishes a stunted brushwood, which in some places is very thick, and in which we found a great number of Wallabi, a small species of Kangaroo, affording an ample supply of fresh provisions to the crew. Fish also were abundant at every anchorage, but we were unsuccessful in our searches after fresh water, several wells were dry, and after sinking a few feet our progress was invariably stopped by a bed of hard rock, being a calcareous stone which forms the base of all these islands, and is very similar to that of which Rottenest Island is formed.

Houtman's Abrolhos occupy a considerable space north and south, extending nearly N.N.W. and S.S.E., between the parallels of 28° 15′ and 29° 0′ of south latitude, being some miles more than that given to them on the charts. East and west they are not nearly so extensive, the whole being contained between the meridians of 113° 32′ and 114° 05′ of east longitude.

Merchant Seamens' Fund.

Mr. Editor.—In your valuable Magazine for March 1839, there appeared the first petition from myself on this important subject presented to Parliament by Sir Edward Codrington, G.C.B., &c. Several petitions have since been presented to a similar purport, numerously signed by sea-going owners, masters, mates, and seamen.

The following is a copy of a petition now receiving signatures in London; petitions to a similar purport are at several of the out-ports.

You would materially assist a cause that you have at all times advocated, if you would give a place to it in your valuable journal. The recommendation and suggestions of the Select Committee of the House of Commons are so just that they cannot be too universally known, nor too highly appreciated by those who wish justice done to the worn-out mariner, the widow, and the orphan.

The Committee suggested certain alterations, namely that the pensions be equalized, except in the cases of seamen and widows, who were entirely disabled, to whom a more ample allowance ought to be made, also to orphan children, than to those who had a surviving parent. That the balances should be safely invested, and applied in maintaining the existing rates of pensions to all present pensioners, when such rates should exceed what would be their share in a general dividend, and applied hereafter to the relief of those widows, who do not come within the conditions prescribed by the Act; or to the establishment of schools for orphan children. The Select Committee also recommend a change in the existing law, on a conviction of the insufficiency thereof, and that the election of Trustees be vested exclusively to sea-going owners, masters, and mates.

In reference to that part of the petition, "or any British Colony from sources similar to those supplied to British Consuls;" permit me to observe that seamen wrecked in a British Colony obtain no relief. As a case in point, suppose a seaman wrecked in the river St. Lawrence, on a fall voyage from Canada, and fortunate enough to reach Quebec, there he may beg or starve through the winter. Suppose a seaman wrecked in the White Sea, and gets to Archangel, there he is supported through the winter by the Consul, and has a passage provided for him to England in the spring.

I remain, &c.

Green-street, Stepney, Feb. 12. Samuel Baker.

To the Honourable the Commons of Great Britain and Ireland in Parliament assembled.

The petition of the sea-going owners, masters, mates, and seamen of the United Kingdom of Great Britain and Ireland.

Most humbly sheweth—

That your petitioners are truly grateful for the inquiry which your Honourable House has caused to be made into the appropriation of certain monies contributed by them to the Merchant Seamen's Fund, for the support of worn-ont and disabled seamen, their widows, and orphans.

But your petitioners regret that the Select Committee appointed by your Honourable House to investigate into the appropriation of this fund, did not

deem it fit to recommend the immediate introduction of a bill to remedy the defects which they acknowledge do exist.

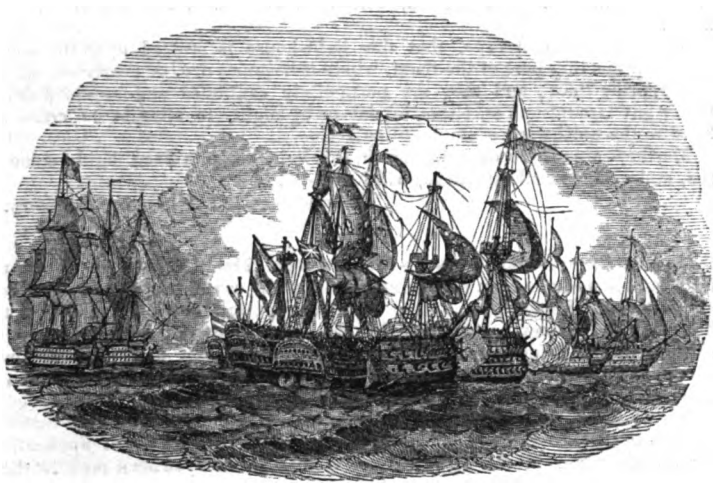
That many of your petitioners have paid for a considerable length of time to this fund, under an impression that they would have been provided for when unable from old age or infirmity to persue their vocation.

Your petitions humbly pray that your Honourable House will take into your consideration the injustice done to the seamen in the merchant navy, in appropriating any portion of the proceeds of this fund towards the relief of the general poor rate.

And they further humbly pray that immediate steps may be taken to facilitate the introduction of such a measure as will enable them to obtain efficient relief under any emergency in England, or in any British Colony, from sources similar to those supplied to British Consuls, and finally that they may be able to ascertain in the fullest manner possible the actual receipts and outlay of the institution, through a distribution of the annual returns in the various outports.

And your petitioners will ever pray, &c.

BATTLE OF ST. VINCENT.—In our last volume we noticed the appearance of Colonel Drinkwater Bethune's account of the Battle of St. Vincent,* and recommended those of our readers who keep authentic collections of such records to add it to their stock, more especially as it is accompanied with diagrams shewing the positions of the hostile fleets at different periods of the action. It will be seen by the following spirited view that the Colonel has spared no pains or expense in his work. The view represents H.M.S. Captain boarding the San Nicolas.



NOTICES TO MARINERS.

LIGHT AT SAVANNA, *Georgia*.—Custom-house, Collector's-office, Dec. 18th, 1840.—To mariners having ingress and egress with this port, notice is hereby given, that a light boat has been moored between Martin's Industry, south-east

* Published by Saunders and Ottley, Conduit Street.

point, and the north bank of Port Royal entrance, and will be lighted up on the first night in February next.

The bearings of this light are as follow, viz.—North Point, Trench's Island N.W.¼N.; Bay Point, N.W.b.N.; Tyber light-house, W.S.W., distance about eighteen miles. Depth of water, six fathoms and three-quarters at half ebb. Shows one bright light, which is elevated about twenty-two feet above the surface of the water. Distance from nearest land about eight miles.

Light at Genoa.—The following notice, issued by the Admiralty at Genoa has been received at Lloyd's from their agent at that port:—

Navigators are advised that from the date of the 15th of January, 1841, and after, the illumination of the Pharo of the Grand Lantern of this port, which is built on the extremity of the promontory of St. Benigno, in lat. 44° 24′ 18″ N., long. 6° 34′ 6″ will be effected by means of lenticular apparatus of the first order. The flashes of light and eclipses will succeed each other from minute to minute. The elevation of this light is found at 114 metrical measure above the level of the sea, ordinary tide. Its appearance in clear weather will be visible at the distance of ten marine leagues. The less brilliant fixed fire in the intervals between the flashes will be clearly distinguished at five marine leagues, and the eclipses will not be total but beyond the said distance.

Light-house on the Maplin Sand.—Trinity-house, London, Jan. 14th.—Notice is hereby given, that the light-house, which has been for some time past in course of erection upon the Maplin Sand, is nearly completed; and that the light therein will be exhibited for the first time, on the evening of Wednesday the 10th of February next; at which time the light, hitherto shown on board of a vessel moored off that Sand, will be discontinued, and the vessel taken away.

Mariners are to observe, that this light-house is erected upon the south-eastern projecting part of the Sand, where it becomes dry, or nearly so, at low water spring tides; and they are particularly cautioned and enjoined never, under any circumstances, either by day or by night, to attempt to cross the Sand to the northward of the building.

Mariners are also to observe, that in this light-house, a fixed light, coloured red, and visible in all directions, will be exhibited.

By order, J. Herbert, *Secretary.*

Grinez Light.—Boulogne-sur-Mer, January 21st, 1841.—Sir.—From the information we have been able to collect from the captains of the three vessels wrecked at Ambleteuse, it appears evident that they were *all* misled by the light on Cape Grinez. It is clear that the light in question resembles in all respects that of Dungeness; and nine captains out of ten who have the misfortune to run ashore on the coast of Ambleteuse declare that they believed themselves to be on the English coast, from the fact of the lights alluded to being so much in resemblance to each other. We are well aware that this statement of those captains is correct, and we know that incessant applications for an alteration in the light at Cape Grinez have as yet been made without effect.

A small light has been added, but it is of no use, as it is not visible at a short distance from the coast.

By a recent application our Chamber of Commerce has obtained an inquiry to be made upon the subject, and the result is that all the captains agree that the two lights in question are not sufficiently distinctive from each other.

If we may be allowed to give an opinion upon the subject, we should most certainly say that, if the underwriters of Lloyd's were to request the British

government to apply to that of this country, it would have the desired effect; and the light on Cape Grinez would undergo an alteration such as to avoid in future the loss of property on this coast to such an extent as of late, and particularly since the existence of the light alluded to.

We remain, &c.,

To W. Dobson, Esq., Sec., Lloyd's, London. ALEX. ADAM & Co.

PORT FLEETWOOD-ON-WYRE HARBOUR LEADING LIGHTS.—Bearings—Magnetic.—Fleetwood-on-Wyre, Lancaster Bay, November the 1st, 1840. The Directors of the Preston and Wyre Railway Harbour and Dock Company, hereby give notice, that the harbour improvements having been so far completed, under the plans of Com. Henry Mangles Denham, R.N., F.R.S., as to permit a straight course direct from sea into the harbour, the same will be denoted, on and after the 1st day of December next, by the exhibition of Two HARBOUR LIGHTS, from which date the shore beacon, known as Wyre Mark, will be discontinued. These lights (of fixed white character,) will appear to the mariner in upper and lower order when brought in line upon the bearing of south, to which bearing their brilliancy is limited, and will guide him right up the sea-reach of Wyre according to his draught and time of tide, instead of depending on daylight for navigating the buoyed but serpentine deep The said light-house structures are in addition to the Screw-pile light-house, erected at the western point of entrance last June; and present for a day leading-line two columns of the relative altitudes of 104 and 44 feet above half-tide level. The inner and higher column rises conspicuously from the town site, is of red sand-stone colour, and when in line of the lower light appears between the custom-house and the sea-view hotel, with a spired church half a point westward. The lower light-house stands at high-water mark 850 feet in advance of the higher light-house; it is of a light-coloured stone, springing from a square colonnade, and makes out in relief when in line of the higher column. The two lights by night, or a black ball at the lower column of the two by day, indicate at the present stage of harbour improvements nine feet water right up, which increases to eighteen upon neaps, and twenty-five feet upon spring tides; whilst in the buoyed deep eighteen at half-tide, twenty-four at high-water neaps, and thirty-one feet on high-water springs. The relative height of lights is so arranged, as to dip the higher below the lower when you have passed through the new cut, and may haul south-eastward for the mooring buoys, where twenty feet water is retained at low-water springs. Two black buoys mark the eastern side of the cut, and a black and white chequered buoy the western side. The cut lies at the inner, *i. e.* southern, portion of the leading line of lights.*

H. M. DENHAM, Consulting Marine Surveyor.

N.B.—Whenever the above shore light-houses are obscured from the entrance by haze during day tides, the lamps will be lighted to assist the Mariner's eye.

HARBOUR OF COCHIN.—*Malabar Coast.*—The following notice respecting the establishment of a light at the Port of Cochin, and the removal of the buoys appears in Fort St. George Gazette, of the 23d of April last:—

Malabar Principal Collector's Office,
Calicut, 12th April, 1839.

Notice is hereby given, that the Buoys, hitherto laid down at the mouth of the Cochin River were withdrawn on the 1st inst., from which date a light has been shown from the flag-staff at that port, about (111) one hundred and eleven feet above the level of the sea.

* Vide "Denham's Sailing Directions for Port Fleetwood," published at Mawdsley's Liverpool, and Bate's London.

The proper place for ships to anchor outside the bar is in five fathoms and a half, muddy bottom, with the flag-staff bearing E.N.E.

The leading marks for ships running into the river is the northernmost of the three churches up the harbour at Anjicaimal, on with the Vypeen point.

A pilot is employed at Cochin, who will board any ship hoisting the prescribed signal, according to Marryatt's Code.

A plan of the harbour of Cochin is annexed.

W. E. UNDERWOOD, *Actg. Princl. Coll. Malabar.*

Ballast Office, Dublin, 12th Nov. 1840.

VALENTIA HARBOUR LIGHT-HOUSE, *West Coast of Ireland.*—The Corporation for preserving and improving the Port of Dublin, hereby give notice, that a light-house has been built on the north-east point of Valentia Island, from which a fixed white light will be exhibited on the evening of the 1st of February, 1841, and thenceforth will be lighted from sunset to sunrise.

Specification given of the position of the tower, &c., by Mr. Halpin, the inspector of light-houses.

The light-house is erected within the old building of Cromwells Fort, on the western side of the principal entrance to Valentia harbour, and bears from Reenadrolaan Point S.E.b.E. distant one and one-eighth nautic miles, Doulus Head S.S.W.¼W., one and a quarter nautic mile, and Clacka-vallig, (sunken rock) W.b.S., one and three-quarters cables length.

The light will be a fixed white light, open to seaward, from north west to S.S.E.¼E. and elevated fifty-four feet above the level of high-water springs, and sixty feet above the mean level of the sea.

The light, kept open, will lead clear of Reenadrolaan Point, and also of the Harbour Rock within the entrance.

Shelving rocks, partly covered at high water, extend three-quarters of a cable's length from Cromwell's Fort.

The bearings given are magnetic. Var. 28 ¾ W.

By order,

H. VEREKER, Sec.

COMMANDER LE HARDY, R.N., *on the Jessie Rocks off Berehaven.*

Castletown, Berehaven, County of Cork, Jan. 22d, 1841.

SIR.—The barque Jessie, Miller of Liverpool, having lately grounded on a patch of rocky ground, scarcely known till lately to the Berehaven pilots, and this being the second vessel within the last two years and a half, to which a similar accident has occurred, I trust I may be excused drawing your attention to the circumstance.

I have no means in this remote district of consulting the late surveys, nor of otherwise ascertaining if this danger is well known, I have therefore thought it right to take a rough survey of its position, the results of which I beg to submit to you.

The patch lies at the west extreme of the haven immediately off Danish island, the western extreme being quite open.

Danish island 360 yards.—Nearest point of Bere island 540 yards. There being thirteen feet and a half on it at low water (springs) immediately to the south the water deepens to six and seven fathoms muddy bottom, shoaling from that very gradually to the Bere island shore: to the north there is four and a half and five fathoms, muddy, shoaling to Danish.

The bearings are Western Redoubt, Bere Island, S.W. ½ S.; Corryglass rock, entrance of Castletown harbour, N.b.W.; Manaan island, sheep-house, east,—compass bearings.

I would beg to observe that at all times large vessels should avoid anchoring with the west entrance open, and if entering at low water by inclining to the Bere island shore, at all times the safest, they will avoid this danger.

You will probably at once perceive, Sir, that I am unacquainted with late surveys, I will only beg to add, that should you be pleased to furnish me with them, it would afford me pleasure could I be of use in adding any remarks that might suggest themselves, and my duty calls me so frequently afloat in the tenders, both in Bounty Bay and the Kenmure river, that I have good opportunity.

I have the honor, &c.

T. P. Le Hardy, *Commander.*

To Capt. Beaufort, R.N., Hydrographer. *Insp.-Com. Coast-guard.*

Naval Gunnery.

The following is too good to be lost, and we take the opportunity of doing justice to Capt. Smith in his claims respecting the original establishment of the Excellent.

Extract of a letter from a naval officer, dated off Beyrout, Oct. 1st, 1840:—A most beautiful manœuvre was successfully performed this morning. You must know that a bright look out is kept for deserters from the enemy, who are anxious to get on board our ships, and if they are caught before they can get down to the beach, they are killed. This morning, a poor fellow was observed by us, sitting down under some rocks, and at the same moment it was discovered, that two fellows were hurrying down with drawn swords to despatch him, and two others were posted on a point, to shoot him, should he take to the water. In two minutes, the poor fellow who had deserted, would have had their swords through him, or else his head cut off, and he was conscious of their proximity to him, when a nice little 32-lb. shot, fired just over the head of the victim, put to route the pursuers. He was perfectly aware that the shot that had passed over him, was meant for his protection, and couched as closely as possible to be out of the line of fire. A boat was immediately manned and armed, and sent to the spot the man was on, but before she reached, another attempt was made by the Egyptians, to get at the fugitive; the same kind of messenger was again sent flying over boat and man, right at the soldiers, and in a few minutes, the life of a fellow creature was saved, who was compelled to serve a tyrant he detested. When he got on board, he said he felt secure when he he found that the guns of the English ship were pointed at them. It is a proof of the perfection at which Naval Gunnery has arrived; and another proof was given yesterday—three guns were ordered to be pointed at a hole in a castle, not more than four feet in diameter, through which three fellows were looking out, to fire upon our boats in-shore; the whole went off as one gun, and every shot went slap into the hole. We found out afterwards from a deserter, that it broke one man's back, knocked another's leg off, and killed the third.

The following is Capt. Smith's letter, to which we have alluded:—

Sir.—Having been promoted to the rank of captain on being superseded by Capt. Hastings in the direction of the gunnery establishment on board Her Majesty's ship Excellent in 1832, I naturally felt some inclination to notice a paragraph in *The Times* of November 23rd, which stated that the *precision* of the fire from the ships at Acre was owing to the practice in naval gunnery *first* taught by Capt. Hastings; subsequently other papers implied the same thing, and that the establishment originated under the present board of Admiralty. This would have remained unnoticed had not a letter appeared in the *Times* of the 9h inst. from Portsmouth on the subject.

In 1830 I was directed by Sir George Cockburn to point out on the Admiralty chart where a ship could be moored in Portsmouth-harbour, and fire shot in practice without danger or inconvenience. The plan was then decided on, Sir George conferring with Sir Byam Martin, the able Comptroller of the Navy, who was pleased to give me a *carte blanche* to choose any old ship fit for the purpose, under the sanction of Sir George Grey, the Commissioner of Portsmouth dockyard. The Excellent happened to be moored precisely in the spot I had pointed out, and she was selected for the purpose (the appropriateness of the name being remarked at the time.) Thus commenced the present establishment, which has since been most beneficially enlarged and improved, first by Sir James Graham, and especially by the present Board of Admiralty, Captain Sir J. Pechell taking it under his immediate care and direction; he was the first to follow the gallant Sir Philip Broke's system, marked out as worthy of adoption by the Shannon's line of vital fire on the side of the Chesapeake. It need scarcely be repeated that Capt. Sir Thomas Hastings deserves great credit for the perfection it has attained, as it now happily realizes all that that accomplished artilleryst, Sir Howard Douglas, contemplated in his able work on naval gunnery, in which he labours (though himself a soldier) to provide us in the event of war with future Shannons.

In the *Naval and Military Gazette* of September 7th, 1839, is a corroboration of the account I have given of the origin of the Excellent, with the addition of a flattering allusion to an invention of mine, the "Moveable Target," for teaching seamen, by an inboard exercise, to fire with precision, without expending powder and shot in the instruction, adopted in the navy by Admiralty order in 1826; so that I trust I am not arrogating to myself too much in saying that to me in a two-fold degree may be fairly attributed the merit of establishing a general system in the navy by which the nicety of *Tangent* practice may be taught, having in the first place introduced the moveable target, and secondly, having been *the first* to establish a depôt of instruction on board the Excellent, which ship was placed by me expressly in a position in which she would be at rest, so that, to quote the letter of the *Times* of the 9th inst., "the knowledge of the value of precision, as well as how to take aim, might constitute the chief value of the admirable system of instruction on board the Excellent:" that these have been attained is proved by our gallant seamen-gunners at St. Jean d'Acre, as theirs may fairly be termed target practice.*

* The Rodney, 92, when formerly in the Mediterranean, under Captain Hyde

It is gratifying to find that up to the present time the great "*tour de force*" on board the Excellent, and the ships of the fleet is dismounting and mounting a 32-pounder, on a plan suggested and practised by me, and was left with many other plans, an heir-loom to the Excellent establishment. The Britannia made this plan available when required to send her lower-deck gun-carriages on shore from Spithead, and in remounting the guns.†

Palmam qui meruit ferat is a well-known motto, especially hallowed among the profession of which I am a humble member. My object in writing this letter has originated in that principle, and I am confident that Capt. Sir T. Hastings, with whom I served in her Majesty's ship Undaunted, under Capt. Sir T. Ussher, would be the last man in the world who would wish to appropriate to himself the merit which properly belongs to another.

I have the honor, &c.

GEORGE SMITH, *Captain* R.N.

Royal Naval Club, Bond Street.
12th Dec., 1840.

HERO OF ACRE.—The following has been transmitted to us as the production of a boatswain's mate on board of one of the ships under the command of the gallant officer whose deeds it celebrates: it does infinite credit to Jack's talents and spirit, and above all to his genuine affection for his heroic chief.—*John Bull.*

Pull Sultan, pull Pacha, pull devil, pull baker,
Your fame is eclipsed by the hero of Acre;
Each town on your coast, every place on the map here,
Resounds with the glory of Commodore NAPIER.

Here's to the hero of Acre and Sidon,
He battered their walls, and the breach was a wide one;
With his sword in his hand, and his hat on his rapier,
How fierce was the onset of Commodore NAPIER!

No honors or pensions can possibly cancel,
The wisdom of STOPFORD, the valour of MANSEL;
They formed and they fought, and they stormed every gap here,
Yet, what are these heroes to Commodore NAPIER!

With his bombs, shells, and cannon, his muskets and fuses
He slew the Egyptians and helped the brave Druses:
Even Mehemet Ali, a terrible chap here
Confessed he was nothing to Commodore NAPIER!

The crafty old Pacha, as wise as a Solon,
With grief saw the current of victory roll on;
In spite of his wisdom he fell in the trap here,
And owned he was diddled by Commodore NAPIER!

Here's a health to LORD PALMERSTON, STOPFORD, and ALI,
They have had a good tussel and ended it gaily,
The battle is gained, and the Sultan is happier,
And all of it owing to Commodore NAPIER!

Parker, may be cited as among the ships which profited by practice at the moveable target: the men fired their 32-pounders proverbially like riflemen.

† A 32-pounder, 56 cwt., was fired with shot and dismounted under my direction by thirteen men in fifty-five seconds, in the presence of Sir J. Graham, when First Lord of the Admiralty.

Longitude of Arcona.

Sir.—As I see you have honored my last letter with a place in your Magazine, I am desirous of referring once more to the longitude of Arcona, for since I wrote to you I have seen Lieut. Raper's book, and in his Table of Longitudes find he gives the light-house 13° 26′ 5″. This induced me to refer again to my chart, (Blachford's of the Baltic,) where it is placed in 13° 37′. I have since seen another chart of the Baltic where it is placed in 13° 26′ 30″. Now here is a difference of about ten miles between the two charts. Which is right?

I certainly did put faith in the longitudes given to me at the Observatory, thinking they were likely to be correct. The weather was too hazy when I was there to admit of observations; but as it is an important point of land, I hope some of your friends will inform us as to the real position. I am, &c. Scrutator.

[We recommend our correspondent to consult the account of Lieut.-General Schubert's expedition in 1832, the whole of which he will find in the Geographical Society's Transactions for 1836.—Ed.]

Com. Quin whose death is recorded as having taken place at St. Helena, on 22nd Nov. last, entered the Service in Oct. 1805, in H.M.S. Woolwich, under the command of Capt. Beaufort, and served in her in the East Indies, South and North America, and Mediterranean stations till 31st May, 1809, when he was transferred to the Blossom, under the same distinguished officer, till Sept 1810, on the North coast of Spain and the Channel, at which time he followed Capt. Beaufort into the Ville de Paris, with the flag of Rear-Admiral Freemantle, in the Mediterranean, and then to the Frederichstein, to the command of which ship Capt. Beaufort then removed. He served with this officer till Oct. 28th, 1812, when he was appointed to the Sea-horse under Capt. Sir James Gordon, on the West Indies and Channel stations, till Jan. 1813, when he was promoted to Lieutenant, and in June 1813, was appointed to the Kangaro, Commander W. S. Hall, in Baltic, Channel, North Spain, Lisbon, Halifax, and Gibraltar, till 1815. He commanded the Britomart, on the African station, from 1835 to 1837, during which period he conferred such signal benefit to British trade, that he was presented with an elegant and costly piece of plate, by the merchants on the coast. He was promoted to the rank of commander in 1837, again selected for service on the African Coast, and appointed to the Persian, in which command he died in the highest esteem of his officers and ships' company, for his kind, humane, and generous conduct.

War in Syria.—*Vote of Thanks.*

House of Lords,—4th February, 1841.

The Earl of Minto said he rose, in pursuance of the notice he had given to move that the thanks of their lordships' house be given to Sir Robert Stopford, and the officers and men who served under him in the recent proceedings on the coast of Syria. He should detain their lordships but a very few moments on the present occasion. The events were so recent that it was unnecessary for him to enter into any detail of matters that must be fresh in all their lordships' memories. It was perfectly true that on many former occasions the British fleet had been called upon to contend with more formidable enemies, and to engage in more sanguinary conflicts; but he was quite sure their lordships would agree with him in saying, that throughout the whole of the operations on the coast of Syria, there was abundant evidence to be found of the skill, of the bravery, of the resources, and of that originality of enterprise and character, which had always eminently distinguished the British Navy,—(Hear, hear.) But there was one peculiar feature distinguishing these operations, to which he must be allowed to call their lordships' attention,—he meant the singular rapidity of execution, and the small space of time within which we accomplished

so many brave and gallant enterprises, ending in such important results. It was on the 9th of September, after having received the refusal of the Pacha to accept of terms that had been offered to him, that Sir Robert Stopford arrived before Beyrout, and without the loss of a single day, he might almost say of a single hour, launched Commodore Napier on that career of victory and success which he had continued to pursue undiminished to the last. It was on the same day, the 9th of September, that Commodore Napier was landed at D'jouni, and succeeded in taking the place in spite of a much superior force; and on the 3rd of November the contest was brought to a glorious termination by the reduction of the fortress of Acre. In the meantime the mountaineers had been armed, magazines put in readiness, and post by post—every town throughout the whole line of coast, from Tripoli to the extremity of Syria,—reduced by one or other of the detachments of our naval force. Commodore Napier, besides his purely naval services, had twice marched on shore to oppose the Egyptian forces, on both of which occasions he had defeated and dispersed the enemy; and between these two actions he had succeeded in landing at Sidon, at the head of scarcely a thousand men, Austrian and British, being opposed by about 20,000 men, and took the place by storm, bringing away in his train about 3,000 prisoners—(cheers.) He, (Lord Minto,) had dwelt a little on the extraordinaay rapidity with which these operations had been conducted, because in this contest time was every thing. It was not only most important to the success of the operations themselves, but it must be obvious to their lordships that, if the contest had been protracted to another campaign, it might have been attended with the utmost peril to the peace of Europe. If he wanted another example of the promptitude and skill which had characterised those operations, he would refer their lordships to the despatch of Sir Robert Stopford, of the 3rd and 4th of October, in which the gallant admiral stated that he had just received the instructions of the government, for the reduction of the fortress of Acre, an enterprise on which, he said, he had already been engaged; that the resolution so to do was taken on the 29th of October; and that on the 31st, the admiral wrote all his arrangements were completed, that he was prepared, and, in fact, that he actually did sail on that day; and in three days from that date this important fortress had yielded to the talent and power arrayed against it. The admiral was most ably and gallantly seconded in all his operations by Admiral Bandeira, commanding the Austrian squadron, as well as by the Archduke Frederick, and also by the Turkish officers. In his account of the affair at Sidon, Commodore Napier spoke in the very highest terms of the conduct of the Archduke, who, at Acre, landed during the night, along with the marines of the squadron, in order to secure the safety of the town and fortress. To Admiral Walker, too, much credit was due. He had been in every action, and in all he had exhibited most distinguished abilities, and sustained that high reputation which had ever attended British valour, and had proved himself eminently qualified for that high post which he occupied at the head of the Turkish fleet.

He (the Earl of Minto) felt certain that it was unnecessary for him to add one word more in order to induce their lordships to concur in the vote of thanks which it would be his duty to conclude by proposing; he would only once more state, that throughout the whole of the operations, and more especially in the last, the attack upon St. Jean d'Acre, the precision and accuracy of the British fire had proved that we had added a new element of strength to the British navy, in the talents and skill of every man employed in it. He trusted that their lordships and the country would receive what had been done on this occasion as an earnest of what could be effected by our fleet should it unfortunately be on any future occasion called upon to enter into operations with more formidable opponents: and he thought the bravery and energy of our officers and sailors had given the best answer to all those cavils and complaints of the degeneracy and decay of the British navy which had been made in many quarters during the last year. On that head he would not add one word more; all must feel that the brave men in the fleet had given a better answer to the calumny, originating, he believed, in jealousy, than any which he could do. He had no

doubt but their lordships would willingly concur in giving the thanks of the house to Admiral Stopford, and the officers and men employed under him on the coast of Syria, for the bravery displayed by them in the operations terminating on the 3d of November last. The noble lord concluded by moving successively the following votes of thanks:—1st, the thanks of this house to Admiral Sir Robert Stopford, G.C.B., for his gallant conduct during the operations carried on on the coast of Syria, terminating with the successful and decisive attack upon Acre on the 3d November, 1840.—2nd, thanks to Sir Charles Napier, K.C.B., and the several officers of the fleet, for their brave and active co-operations in those operations.—3d, that this house acknowledges and highly approves of the services of the seamen and marines employed on this service.—4th, thanks to Major-General Sir Charles Smith, and the officers of the Royal Artillery and Engineers, employed on the coast.—5th, that this house acknowledges and highly approves the conduct of the men of the Royal Artillery and Engineers so employed.—6th, thanks to Rear-Admiral Baron Bandeira, commander of the Austrian fleet, for his valuable assistance and active co-operation in this expedition.—7th, thanks to Admiral Walker, in command of the naval force of the Sultan, for his gallant co-operation.—The concluding resolution was, that the Lord Chancellor communicate the said resolutions to Admiral Stopford, with a request that he would signify them to the officers and men under his command.

NEW BOOKS.

TROTTER'S MANUAL OF LOGARITHMS, *and Practical Mathematics.—Edinburgh, Oliver and Boyd; London, Simpkin and Marshall.*

A useful little set of Tables intended for students, engineers, navigators, and surveyors, but more calculated for the civil engineer and surveyor, than the seaman. It contains an epitome of mensuration and mechanics, and many useful miscellaneous tables.

THE PRACTICE OF NAVIGATION AND NAUTICAL ASTRONOMY.—*By H. Raper, Lieut. R.N., Secretary to the Royal Astronomical Society.—Bate, London.* 1840. *(Concluded from p. 138.)*

Professor Lax, in his "Requisite Tables," published in 1820, remarks, "that few are aware of the great labour which is required to construct a table of this kind,* and how much care and consideration are necessary, to determine what authority ought to be selected." Lieut. Raper, avowedly, under the same impression, prepared a paper divided into five sections, which was read at the evening meetings of the United Service Institution, and afterwards appeared in the pages of the Nautical. In that paper, the reader will find the principles which ought to guide him in his choice of authorities, ably discussed, and directions given, which will be hereafter found useful, both to those who have the determining of longitudes, as well as those who have to construct such a table. In the fourth section some appropriate remarks are made, upon the superior advantages that a steam vessel, properly provided with chronometers, has over a sailing vessel, for ascertaining the meridional difference of longitude between any two places, by affording a rapid transit from one place to another. And although we are not without our doubts as to the deranging effects on chronometers of steam-vessels generally, still, if such effects do exist, they should be ascertained, and some favorable opportunity might be taken of following out the the suggestion, of supplying a steam man-of-war with about seven good chronometers as a preliminary experiment to further results.

It appears to us, that the advantages which may be derived from ascertaining correct differences of longitude, have not been as yet sufficiently appreciated. For instance, how often that knowledge might be useful for the purpose of rating chronometers. As an example, we shall take the West Indies, and suppose between any two of the islands, say Trinidad and St. Thomas, the *difference* of longitude was known within *two* seconds of time. This might easily be the case, as determining the difference is a far simpler matter than

* Maritime Points.

determining with the same degree of accuracy, the actual longitude of two places. Now, a vessel touching at St Thomas, with merely sufficient time to get an observation with the artificial horizon, and then to do the same at Trinidad, would obtain a difference of longitude between these two islands, which being compared with the true one, the rates of the chronometers would be ascertained, although the actual longitude of neither places were accurately known. The rates here found would be far preferable to what could be obtained while lying at anchor, for the going of the watches when actually at sea has been already ascertained, and this it is well known in general differs from the rate when in harbour. Under these circumstances, we would recommend, that in future editions of this treatise, the author should insert a table of meridional differences of longitude, between those places that have much direct communition with each other, and where it has been ascertained within two seconds of time. Such a table as we have already shown, would be of considerable utility to seamen, and would also excite those who are supplied with the requisite instruments to furnish data, to increase our knowledge of the relative positions of maritime places.

While we are urging Lieut. Raper, to devote still more of his time to these discussions and tedious compilations, we do think that every seaman will join with us, in thanking him for what he has already done in this important matter. Whether it is exactly fair in a great commercial country like this, whose ships may be said almost to cover the seas, to throw the construction of a table that can only be derived from actual observations, (and those often taken by the officers employed by government,) upon a private individual, who may conscientiously desire to render his work as perfect as possible, is a point which does not fall within our province to discuss.

We have now given some general account of Lieut. Raper's work, and although want of room, (for the subject is really almost interminable,) has prevented us from explaining many parts and from doing full justice to its peculiar merits, yet we hope that enough has been said to enable every one interested in the subject, to form some idea of the important boon which has been presented to the public.

It is we think due to ourselves to state, that we should consider it our business to point out any errors or faults in a treatise, which professes to teach a science on which the lives of thousands depend; and we should have done so in regard to Lieut. Raper's work, if we could have detected any which called for our particular notice. No doubt there are some minor points in which we differ from the author,—for instance, he gives the table of the sun's declination which is hardly necessary, as the Nautical Almanac is now so generally used, and there are a few other arrangements where perhaps improvements might be introduced. Of absolute mistakes we have detected none, otherwise we should have pointed them out;—and further than this, had we found any want of simplicity or clearness, any practical question not fully answered, or any attempt to evade a direct solution of a difficulty, we would assuredly have been most anxious to call attention to any such defects. Those who are in the habit of reviewing, if they act candidly and fairly, will have much difficulty in proving statements to be erroneous in treatises, which like the one now before us is composed by an author, not merely competent by previous study, but having every advantage that the happiest combination of circumstances can possibly give. Whatever fair and honourable pride we may and do feel, because the author of this work is a sailor, yet we must distinctly state that so far from having any improper bias on that account, it only rendered us the more inclined to be critical and severe, from the consideration that, all treatises which relate to nautical affairs, if undertaken by seamen, ought from their superior opportunities, to be more correct and perfect than those which have been generally given to the world:—on this subject a few further observations will not be out of place.

Those who have only witnessed our seamen when emancipated for a short time, from the regular routine of their lives on board of a ship, and plentifully

supplied with money, are apt to form unfavourable ideas of their utter recklessness and want of reflection. But nothing can be more erroneous than to suppose that "They that go down to the sea in ships, and occupy their business in great waters," can ever be really and permanently thoughtless. So far in general from those who have passed their youth at sea having such a turn, observation and experience prove the very reverse to be the case. When the general peace arrived, and great numbers of our naval officers were thrown out of their proper occupation, and deprived of that employment which they had been accustomed to from their boyhood, there were few who were content to live in thoughtless idleness, victims of discontent and *ennui*; the greater part turned their minds and talents into some new channel.

One portion of our naval officers have taken a high walk, having sedulously given themselves to study, and to the scientific avocations connected with professional knowledge. Some of these officers are now reaping their reward, by holding important situations, highly to their own honour and with great advantage to their country; whilst others, again, are receiving that credit which their useful labours have gained for them. Of this class Lieut. Raper is one of the brightest ornaments, and he has clearly shown in this work that the mere science of the mathematician, however profound, cannot accomplish what has now been achieved by the scientific and practical sailor. In the preface to the work that we have been examining, we are promised by the author another volume, in which the mathematical theory from which the present treatise is derived will be entered upon, and laid down, in order that the whole subject may be fully studied by those who have sufficient elementary knowledge. This is proceeding upon the right principle, and such a volume will be a most valuable acquisition to all those, who not content with working by what is vulgarly called "the rule of thumb," wish to be enabled to understand the processes by which they do work. Thus we shall have the important departments, of the theory and practice of navigation and nautical astronomy systematically treated, and in all their bearings fully and clearly explained. There is, however, a large field as yet unoccupied. The nautical steam engine still wants an author; a thorough investigation into the new system of naval warfare by the aid of steam is a desideratum.—Marine surveying, and many other subjects are in the same predicament, none of which can receive full justice, except from a professional author, and if he brings some of Lieut. Raper's deep study and acquirements, adopting the same systematic principles for his guide, he will most assuredly succeed, and will send forth to the world something very different, from the superficial works which have as yet been produced on these subjects. "Of this kind of half knowledge we have had too much, the present state of science which affords such ample means, seems to demand, that whatever is now done, should be well done."*

Before concluding, we would again call attention to the general state and condition of practical navigation; notwithstanding its great importance, and notwithstanding the thousands of British vessels that constantly navigate the ocean, the knowledge of many who are actually engaged in the business, is we fear at a low ebb. There have been various speculations and calculations made to ascertain the number of merchant vessels which are yearly lost, by the ignorance of the art of navigating in those to whose charge they have been entrusted, and in the pages of the *Nautical Magazine* that subject has been often treated. We believe that the lowest computation assigns one-third of the shipwrecks to this cause; even in the navy, where the officers have in general the advantages of a better education, and more leisure than the great body of mariners, many instances of gross ignorance have fallen under our own cognizance; and we could mention some that should scarcely be credited, of islands being sought for and missed.

Now, we would ask, to what cause are we to refer these deficiencies; hydrography is rapidly progressing under able superintendence,—our surveying-

* Instructions of Capt. Fitzroy, from the Hydrographical office.

vessels are employed in every direction, determining longitudes, and fixing the relative positions of points on coasts hitherto almost unknown, and with a precision not before even attempted; above all, the government plans and charts, thus almost daily arriving, are published as soon as possible, and may be obtained at the price of the paper, and the expense incurred by printing them. Nautical instruments are not only better but cheaper than formerly; a chronometer that used to cost one hundred guineas, may be now purchased for forty-five pounds; and the Admiralty are aware of the necessity of improving the scientific education of our young officers. This is all right, and there can be no doubt it will ultimately produce due and proper effects; but, unfortunately in the mean time, except to the well educated, good charts themselves are of little avail, and the chronometer itself, however excellent, is yet to him who cannot fully avail himself of its advantages, frequently calculated to mislead. In short, it appears to us, that this ignorance must be ascribed to that which we have already alluded to at the commencement of this article, namely, the defects of our treatises on navigation. It is no argument against our statement to refer to the number of excellent navigators to be found both in the navy and commercial marine. Those who have had good teachers, and those who have joined to habits of industry some preliminary knowledge of mathematics, must always, if they do themselves common justice, acquire a competent proficiency. But the great mass of our seamen are either totally or partially without these advantages;—their excuse for professional deficiency may often be the want of proper books. That excuse no longer exists, for by the aid of the work which has been the subject of this notice, all are to a certain extent put upon an equality; all may now not only acquire a sufficiency of that knowledge, which is requisite in order to conduct with safety their ships from port to port, but they may acquire as great a precision in their navigation, as those who have had the opportunities of studying the theory from which this science is derived. But there must be no mistake on this point, Lieut. Raper's book is not intended to supersede, but to call forth personal diligence. No royal road to proficiency in navigation, either has or will be discovered,—industry and application are as necessary as ever. What is to be had without labour, the mariner may be assured is not worth having when obtained. This difference certainly exists—formerly all the diligence of the seaman, if unassisted, might turn out unavailing; now, it is his own neglect if he fails in acquiring that knowledge of navigation of which he is in search, and of which he stands in need.

One word of parting advice to those who intend to take advantage of Lieut. Raper's work, and then we have done. To all such we would say, do not merely look out for some problem that you find here solved with fewer logarithms than you have been in the habit of employing; recollect it is a systematic treatise that is now before you, adopt it therefore as a whole, adopt it as a system, pay the same attention to its slightest injunctions as to its most elaborate rules; and if a long experience has given us any right to judge, we can with safety say, that with you at least the opprobrium of ignorance need no longer remain, and that being thus enabled fully to master the subject, you may be confident in taking charge of the lives and properties of others, that there will be no deficiency on your parts, in a perfect knowledge of the science of practical navigation.

NEW CHARTS.

(*Published by the Admiralty.*)

PENANG *or Prince of Wales Island.—Surveyed by Lieut. Woore, R.N.* 1832.

A chart of this island on a scale sufficient for navigating the channel inside of it, is an important addition to our eastern hydrography. The scale of the present chart an inch to a mile, is sufficient for this purpose, and our men-of-war need no longer be apprehensive for their safety with it on board.

THE ANAMBAS ISLANDS.—*China Sea.—By M. Paris, Ensigne de Vaisseau, in the Corvette La Favorite.—Capt. La Place.* 1831.

Combining we may also add the surveys of the French frigate Thetis, Capt. Bouganville, in 1828, and a chart which no ship should be without in the China Sea.

ACRE.—*Syria.—Surveyed by Mr. G. Biddlecombe, Master of H.M.S. Talbot, Capt. Codrington.* 1840.

A neat little plan, shewing the approaches to Acre for about two miles round, and highly creditable to its author.

EAST COAST OF SOUTH AMERICA,—*Sheet* 6,—*From Rio de la Plata to the Rio Negro.*

EAST COAST OF SOUTH AMERICA,—*Sheet* 7, PATAGONIA.—*Rio Negro to Cape Three Points.*

EAST COAST OF SOUTH AMERICA,—*Sheet* 8, PATAGONIA.—*Cape Three Points to the Strait Magellan.*

EASTERN ENTRANCE TO MAGELLAN STRAIT.

The above four very neat charts are the first we shall record of the results of Capt. FitzRoys long and valuable labours assisted by the officers of the Beagle. With such charts we may pretend to know something of a coast which has been a *terra incognita* to us since the early voyages of the Spaniards, and our own navigators, the fame of whose deeds there was all they had left us. They are invaluable little charts, enriched with all the details of information required even in these days of steam navigation.

ADMIRALTY ORDERS.

Admiralty, Jan. 1, 1841.

The Lords Commissioners of the Admiralty having had under their consideration the Regulations for the appointment of Acting Masters' Assistants, both as regards the required period of their servitude in the Royal Navy, or Merchant Service, and their general attainments in Seamanship and Navigation, are pleased to direct, with reference to the 27th Art. Cap. 3, of the Regulations for Her Majesty's Service at Sea, that the qualifications for the appointments of Acting Masters' Assistants in the Royal Navy, shall in future be as follows:—

He shall have been at Sea either in Her Majesty's Navy three complete years, or in the Merchant Service four years, (one of which as Mate or Inferior Mate); or for combined periods of two years in the Royal Navy, and two in the Merchant Service; or one year in the Royal Navy, and three in the Merchant Service, and shall be full sixteen years of age.

He will be required to have a thorough knowledge of Practical Observations of the Sun, Moon, and Stars, for ascertaining the Latitude; to work double Altitudes; the Longitude by Chronometer, and to keep a Ship's Reckoning by the common Rules, usually denominated a day's-work. He will also be required to produce Certificates of Servitude, and Regularity of Conduct.

Candidates for Acting-Masters' Assistant, are to be strictly and carefully examined in the presence of the Captain or Commander, by a Master and Naval Instructor, and when there shall not be an officer of the latter class, by two Masters, touching their abilities in Seamanship, Navigation, &c. The Certificates of Qualifications are to be signed by the Captain or Commander, as well as by the examining officers; and all Candidates who shall be found qualified, agreeably to the before-mentioned provisions, will be considered eligible to be appointed by their Lordships as Acting Masters' Assistants in Her Majesty's Navy accordingly.

By command of their Lordships,
R. MORE O'FERRALL.

To all Captains, &c.

Admiralty, Jan. 29, 1841.

The title of "Physician-General of the Navy," has been abolished, and replaced by that of "Inspector-General of Naval Hospital and Fleets."

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

LIEUTENANTS—A. L. Kuper, late *Pelorus*, to the rank of commander. Commission to be dated from the 27th of July, 1839. E. W. Matthews, to death vacancy of J. Conway, of *Modeste*.

MATES—L. G. Heath (of the *Excellent*) has obtained the half-yearly Lieutenant's commission, as being senior in proficiency of mathematics, &c., prior to the Christmas vacation at the Royal Naval College. J. H. Woolward, to the rank of Lieutenant.

CLERKS—C. Dealy, of the *Seaflower*, and H. H. Chimmo, of the *Cleopatra*, to the rank of Purser.

APPOINTMENTS.

CAPTAINS—C. Wyvill to *Cleopatra*. G. Elliott (acting) to *Volage*.

COMMANDERS—T. J. Clarke (acting) to *Columbine*. T. R. Eden to *Persian*, v. Quin deceased. E. S. L. Cannon, to *Calcutta*. A. S Pearson to the *Royal Sovereign* yacht, for service of packets at Port Patrick.

LIEUTENANTS—W. G. Mange of the *Indus* to the *Phœnix*. J. P. Dennis of the *Phœnix* to the *Indus*. J. Sanderson to *Excellent*. L. G. Heath to *Impregnable*. R. Tucker to *Ocean*. G. Vincent to *Indus*. J. B. West to *Powerful* from *Beacon*.

MATES—H. de Lisle to *Phœnix*. H. Chads to *Endymion*. A. C. Key to *Excellent*. D. M. L. Mackenzie to *Iris*. Mr. E. Hill to *Indus*. L. P. Pigott to *Impregnable*. W. A. Bridge (of the Excellent,) and G. H. H. Greathead to *Indus*. C J. F. Ewart of the Excellent to *Monarch*. L. C. H. Tonge to *Vernon*, O. Borland and J Borlase to *Excellent*, —the latter to take charge of the artillery duties on board that ship. W. Moorsom to *Excellent*. C. S. Dunbar to *Lizard*. J. Borlase, (*b*) E. Hardy, E. Lacy, and W. A. R. Lee to *Excellent*, from Naval College as Gunnery Mates. H. B. Mottley to *Impregnable*. J. F. B. Wainwright, E. B. Hawke, T. H. Forster, and P. W. May to Royal Naval College for instruction.

SECOND-MASTER—J. Scarlett, (acting) to *Queen*, for her tender.

VOLS. 1ST CLASS—H. Parker to *Lizard*. H. Rundle to *San Josef*. G. Stratton to *Indus*. F. M'Kenzie Fraser to *Inconstant*.

MASTER'S ASSISTANT—J. Matthews (acting) to *Victory*.

ASSISTANT-SURGEONS—R. Hayward to *Edinburgh* v. Plimsoll. D. H. Gamble to *Revenge*, v. Baker. T. K. Beattie to *Stromboli*, v. Houghton. D. O'Callaghan to *Phœnix*. T. C. Miller to *Queen*. C. Daniell (of the *Phœnix*) to *Apollo*. A. L. Emslie to *Queen*. J. Jackson (acting) to *Caledonia*.

Mr. Doyle, clerk of the *Apollo*, and Mr. Parminter, clerk of the *Phœnix*, have passed their examination for Pursers.

NAVAL INSTRUCTORS—J. Moncur to *Endymion*. W. Johnson to *Monarch*.

CHAPLAIN—M. Beebee to the living of Simonburn.

COAST-GUARD—*Commander*—J. Cammilleri to be Inspecting Commander.

Lieutenant—H. A. Finucane to be chief officer.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

APOLLO, (troop ship) Mr. A. Karley, 19th January left Portsmouth for Cork, 24th arrived.

ATHOL, 28, (troop ship) Master-Com. C. P. Bellamy, 12th of January left Cork for Corfu and Barbados.

COMET, (st. v.) Lieut. F. C. Syer, 19th January left Falmouth for Bristol.

ENDYMION, 38, Capt. Hon. F. W. Grey, 2nd February sailed for Cape and East Indies.

FERRET, 10, Lieut. W. S. Thomas, 19th January left Falmouth for Africa.

INCONSTANT, 36, Capt. D. Pring, 2nd February left Plymouth for Mediterranean.

ISIS, 28, Capt. H. Nurse, 18th Jan. arrived at Deal from Chatham, 20th arrived at Portsmouth, 28th sailed for Plymouth, 30th arrived on way to River Gambia.

LIGHTNING, (st. v.) Lieut.-Com. R. A. Williams, 19th January left Harwich for northward, returned to Woolwich.

LIZARD, (st. v.) Lieut. W. G. Estcourt, 30th January at Portsmouth, on way to Mediterranean.

NAUTILUS, 10, Lieut.-Com. G. Beaufoy, 19th January left Shields.

NIGHTINGALE, Mr. G. Hicks, 17th January at Leith, lost two men by the capsizing of a boat.

PELICAN, 16, Com. C. G. E. Napier, 18th January at Deal, 20th arrived at Portsmouth.

PHOENIX, (st. v.) Com. R. Stopford, 20th January left Portsmouth for Devonport.

PLUTO, (st. v.) Lieut.-Com J. Lunn, 16th January arrived at Portsmouth, going to Plymouth, intended to accompany African expedition to the Niger.

SATELLITE, 18, Com. J. Robb, 14th February arrived at Spithead from Bermuda, having sailed 8th January.

SHIPS IN PORT 10th February.—*At Spithead*—Pelican, Satellite.

In Harbour—Queen, Victory, Indus, Excellent, Royal George yacht, Tweed, Rapid, Alban steamer.

AT PLYMOUTH—*In Harbour*—Caledonia, San Josef, Lizard, Pluto, Carron. *In Barnpool*—Raven.—*In the Sound*—Impregnable, Belle Isle, Iris.

ABROAD.

ALECTO, (st. v.) Lieut.-Com. W. Hoseason, 3rd January arrived at Malta.

BLAZER, Lieut.-Com. J. Steane, 12th December left Madeira for Barbados.

BRISK, 3, Lieut.-Com. G. Sprigg, 18th November at Cape from St. Helena.

BRITANNIA, 120, Capt. J. Drake, 31st December sailed from Gibraltar for Marmorice Bay, 7th January arrived.

BRITOMART, 10, Com. O. Stanley, 4th September arrived at Port Nicholson, New Zeeland.

CALLIOPE, 26, Capt. T. Herbert, 14th October at Toonkoo.

CASTOR, 36, Capt. E. Collier, 31st December left Malta for Marmorice, 7th January arrived.

CHARYBDIS, 3, Lieut.-Com. E. B. Tinling, 22nd December arrived at Jamaica from Bermuda.. She was also out thirty-six days from Port Royal to Halifax, having been eighteen days on the coast, and only arrived there on the 16th of November, with loss of boats, bulwarks, stanchions, &c., with a detachment of the 6th regiment on board.

CLEOPATRA, 26, 23rd December arr, at Barbados from Antigua.

COLUMBINE, (st. v.) 24th November arrived at Bermuda from Halifax.

COMUS, (st. v.) Com. E. Nepean, 23rd November arrived at Honduras from Onesa, 26th sailed for Sisal.

CURLEW, 10, Lieut.-Com. T. C. Ross, 3rd November arrived at Cape from Quillimane, 16th sailed from eastern coast.

DRUID, 44, Capt. Rt. Hon. Lord J. Churchill, 14th October at Toonkoo.

EREBUS, Capt. J. C. Ross, 5th September at Hobart Town.

ESPOIR, 10, Lieut.-Com. J. T. Paulson, 7th January arrived at Lisbon with damage.

GANGES, 84, Capt. B. Reynolds, 28th January arrived at Malta from Levant.

GRIFFIN, 3, Lieut.-Com. J. G. D'Urban, 7th January left Barbados. Mr. Pearce, R.N., an officer of the Linnet packet, who had been placed on board the Penelope, of Glasgow, at Grenada, in consequence of the death of the captain and illness of the crew, has himself died recently, within two days of taking charge of the vessel.

HERALD, 26, Capt. J. Nias, 9th Oct. arrived at Sincapore, 13th sailed for China.

HOWE, 120, Capt. Sir W. O. Pell, 31st December left Gibraltar for Marmorice, 7th January arrived.

HYACINTH, 18, Com. W. Warren, 14th October at Toonkoo.

HYDRA, (st. v.) Com. R. Stopford, Dec. at Acre, saving stores of Zebra.

JASEUR, 16, Com. F. M. Boultbee, 7th January at Gibraltar.

LARK, (s. v.) Lieut.-Com. T. Smith, 23rd November arrived at Havana from Belize.

LOCUST, (st. v.) Lieut.-Com. J. Lunn, 24th December arrived at Gibraltar, 27th sailed for Malta, 2nd January arrived at Malta.

ORESTES, 18, Com. P. S. Hambly, 28th September arrived at Callao from Arica.

PARTRIDGE, 10, Lieut.-Com. W. Morris, (a) 14th November arrived at Rio.

PEARL, 18, Com. C. C. Frankland, 28th October left Bahia on a cruize, 20th November arrived at Bahia from Pernambuco.

PERSIAN, 18, November 30th at St. Helena, Capt. Quin having died at that place,—to sail for Africa 1st December.

PIQUE, 36, Capt. E. Poxer, arrived at Gibraltar with loss of masts, bowsprit, and anchors,—expected home.

RACEHORSE, 18, Com. Hon. E. A. Harris, 26th December arrived at Port Royal from Bermuda.

RACER, 16, Com. G. Byng, 4th January arrived at Halifax from Vera Cruz.

RINGDOVE, 16, Com. Hon. K. Stewart, 11th December arrived at Barbados from Bermuda, 19th sailed for St. Thomas.

ROVER, 18, Com. T. W. C. Symonds, 2nd December left Bermuda, 9th arrived at Port Royal.

SAPPHIRE, (troop ship) Master-Com. G. H. Cole, 23rd January left Malta for Barbados.

SAPPHO, 16, Com. T. Fraser, 27th December arrived at Port Royal from Tampico and Havana, 29th sailed for Barbados.

SOUTHAMPTON, Capt. Sir W. Hillyer, 26th Nov. at Rio, having arrived on 14th.

STARLING, (s.v.) Lieut.-Com. H. Kellett, 22nd October left Sincapore for China.

SULPHUR, (st. v.) Com. E. Belcher, 22nd October left Sincapore for China.

TERROR, Com. F. R. M. Crozier, 15th September at Hobart Town.

WEAZLE, 10, Com. J Simpson, 14th December arrived at Cephalonia.

WINCHESTER, 50, Capt. J. Parker, 8th January at Bermuda.

ZEBRA, 16, Com. R. F. Stopford, 2nd December driven on shore in the Bay of Acre by a furious gale,—crew saved.

MALTA.—H.M.S. Howe, 120, had a most fearful passage out, and a most dreadful thing having been planned, which had it succeeded would have blown everybody up, and no person would have lived to tell the sad tale. The Gunner of her, it appears, went into her magazine, and laid a train of powder to a match which communicated with the powder in a cask through which he had bored a hole, and went into his cabin and cut his throat.—*Naval and Military Gazette.*

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 19th of January, the lady of Capt. A. T. E. Vidal, of a son.

At Pen Tamar Cottage, Stoke, Devonport, on the 10th of January, the lady of Capt. W. Walker, R.N. of a daughter.

At Titchfield, Hants, on the 24th of January, the wife of Capt. J. Anderson, R.N. of a son.

On the 8th of January, at the Royal Naval Hospital, Stonehouse, the lady of Dr. Armstrong, of a son.

At North-end, Kingston, on the 26th of January, the lady of J. Kidd, Esq., surgeon, R.N., of a daughter.

Marriages.

At Malta, Lieut. G. Hayes, R.M., of H.M.S. Asia, son of Capt. Hayes, R.N., to Mary Ann, the only daughter of T. Mansfield, Esq., of the Auditor-general's Department at Malta.

At Florence, S. J. Popham, Esq., son of the late Admiral Sir H. Popham, to Jane, daughter of Colonel A. Campbell, of Ardchattan, Argyleshire.

On the 2nd February, at St. Alphage, Greenwich, by the Rev. W. A. Soames, A.M., vicar, R. H. Forman, Esq., son of Colonel Forman, of Croom's Hill, to Frances Seymour, second daughter of Lieut. J. W. Rouse, R.N., of Greenwich Hospital.

At Portsea, Mr. W. H. Batten, R.N., of H.M. steam-vessel Alban, to Miss Mary Ann Chapman, of that place.

At Valetta, on the 24th of December, Mr. C. A. Cole, of H.M.S. Calcutta, to Margaret, youngest daughter of Mr. A. Ferrier, Ordnance department.

At Marylebone, George, eldest son of the late G. S. Wintour, Esq., Captain, R.N., to Harriett, daughter of Lieut. T. Renou, R.N.

At Kennington, Lieut. A. M. Leod, R.N., to Ellen, daughter of B. Alder, Esq. Brixton.

At Speen, on the 20th of January, the Rev. T. Pearson, curate of Stockcross, to Jane Frances, eldest daughter of the late Capt. Dale, R.N.

Deaths.

At Montrose, North Britain, retired Captain W. Mather, R.N., aged 66 years.

At his residence, at Alnwick, Captain J. Forster, R.N.

On the 28th of January, at Portpatrick, Com. J. Little, R.N., agent and commander of the government line of mail-packet steamers between Portpatrick and Donaghadee.

In Canada, Com. A. Wilson, R.N., (1812,) author of a naval history.

In Durnford-street, Stonehouse, B. Kent, Esq., Com. R.N., aged 53 years.

At Arnold's Point, New Road, aged 62, Mrs A. Dechamp, widow of retired Com. R. Dechamp, R.N.

At Nutford-place, Bryanston-square, on the 20th of January, in her 68th year, Anne, widow of the late Capt. W. S. Parkinson, R.N.

At Teignmouth, at a very advanced age, Johanna Hamilton, widow of the late Capt. W. Young, R.N.

On the 22nd of November, drowned in the Hoogley River, Mr. W. C. Walker, aged 15, son of J. W. C. Walker, Esq., of Havant.

On the 20th of January, at Haslar Hospital, Mr. J. D. Keely, Purser, (1813) R.N.

Of dysentery, on board H.M.S. Conway, Mr. C. E. Hodgkinson, Mate of that ship.

At Chatham, on the 10th of January, of apoplexy, Jane, wife of W. Standbridge, Esq., surgeon, R.N., aged 64.

At Deal, A. Folwell, Esq., Purser, RN.

At Stoke, Plymouth, aged 30 years, Elizabeth Higman, wife of Mr. Mattacott, master of H.M.S. Inconstant.

On the 18th of October, of wounds received in a conflict with the natives, while endeavouring to purchase provisions in the neighbourhood of Ning-po, Mr. Harvey, midshipman of H.M.S. Conway, which ship was employed surveying the great River Yang-tse-Kiang, leading up to Nankin

In Crawford Street, London, on Sunday the 21st of February, Mrs. Sarah Thorne, aged 85, mother-in-law of Lieutenants W. L. Sheringham, and A. B. Becher, R.N.

At St. Helena, while in command of H.M.S. Persian, on the 22nd November last, Com. W. H. Quin, R.N.

METEOROLOGICAL REGISTER.

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

From the 21st of January, to the 20th of February, 1841.

Month Day	Week Day.	Barometer.		Fahr. Ther. In the Shade.				Wind. Quarter.		Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P.M.
		In Dec	In Dec	o	o	o	o						
21	Th.	30·36	30·34	28	36	24	37	NW	NW	2	2	bc	bc
22	F.	30·35	30·23	31	39	28	41	SW	SW	2	3	b	or 4)
2	S.	30·03	30·11	37	39	33	40	NW	NW	5	3	bcpr 1)	bc
24	Su.	29·78	29·81	36	34	30	36	NW	NW	6	6	bcps 2)	b
25	M.	30·31	30·26	28	36	28	37	W	W	2	3	bc	b
26	Tu.	29·98	29·98	43	47	32	48	SW	SW	3	2	o	bc
27	W.	30·03	30·13	47	48	44	51	W	NW	4	3	bc	bc
28	Th.	30·30	30·26	36	42	32	43	W	W	4	4	o	bc
29	F.	30·18	30·17	32	42	28	43	W	N	2	3	bc	bc
30	S.	30·26	30·23	37	38	36	40	S	S	1	2	o	od (3)
31	Su.	30·20	30·19	40	34	28	42	SE	E	1	4	or (2)	os 3)
1	M.	30·35	30·25	29	30	27	31	NE	NE	2	5	ops (2)	bcps (3)
2	Tu.	30·07	29·95	25	27	23	28	E	NE	4	3	os (1) (2)	bcps (3)
3	W.	29·99	29·98	19	23	16	27	E	E	2	2	bc	bc
4	Th.	29·77	29·66	24	25	13	26	E	NE	5	5	os (2)	o
5	F.	29·67	29·67	22	27	18	29	NE	E	5	8	bc	qbc
6	S.	29·63	29·60	26	27	24	28	E	E	8	8	qo	qo
7	Su.	29·50	29·42	23	24	22	24	E	E	7	6	qo	qo
8	M.	29·36	29·36	26	28	23	29	NE	NE	4	4	o	o
9	Tu.	29·65	29·76	26	28	25	29	NE	NE	4	3	bcps (2)	o
10	W.	30·00	29·96	27	29	26	31	E	SE	1	1	o	o
11	Th.	29·84	29·73	35	37	25	38	S	SE	1	2	o	bcdr (4)
12	F.	29·66	29·72	39	47	35	48	SW	SW	3	4	o	bc
13	S.	29·65	29·53	44	44	40	46	S	S	5	5	o	o
14	Su.	29·17	29·22	47	49	43	50	SW	SW	6	5	qod 2)	b
15	M.	29·27	29·15	43	47	40	48	S	S	4	6	or (2)	qop (3)
16	Tu.	29·08	29·08	45	49	42	50	SE	E	2	2	o	o
17	W.	29·27	29·45	39	42	37	43	NW	W	3	4	or (1)	od (3)
18	Th.	29·65	29·54	43	51	38	52	SW	SW	3	2	b	b
19	F.	29·68	29·72	45	48	41	49	SW	SW	3	2	or (1) (2)	bc
20	S.	29·84	29·86	43	49	35	53	SW	SW	4	2	b	or 4)

January—Mean height of the barometer = 29·756 inches : mean temperature = 33·3 degrees : depth of Rain or melted Snow fallen = 2·98 inches.

Note.—The first ten days of February were very frosty without any intermission: on the 9th and 10th the Thames abreast of Greenwich was, at the time of high water, completely covered with large masses of ice.

TO OUR FRIENDS AND CORRESPONDENTS.

Our best thanks to Mexicano for his useful paper just received.

Argo—obliged as usual: his attention in the line pointed out will be acceptable.

S.—on Atlantic steamers in our next.

Thanks to Mr. Lang for his important communication. St. Croix shall appear in our next.

A Captain, r.n. of 1807—received.

There is nothing new in the letters of "An Old North Sea Cruizer."

We have received Mr. Sturgeon's letter.

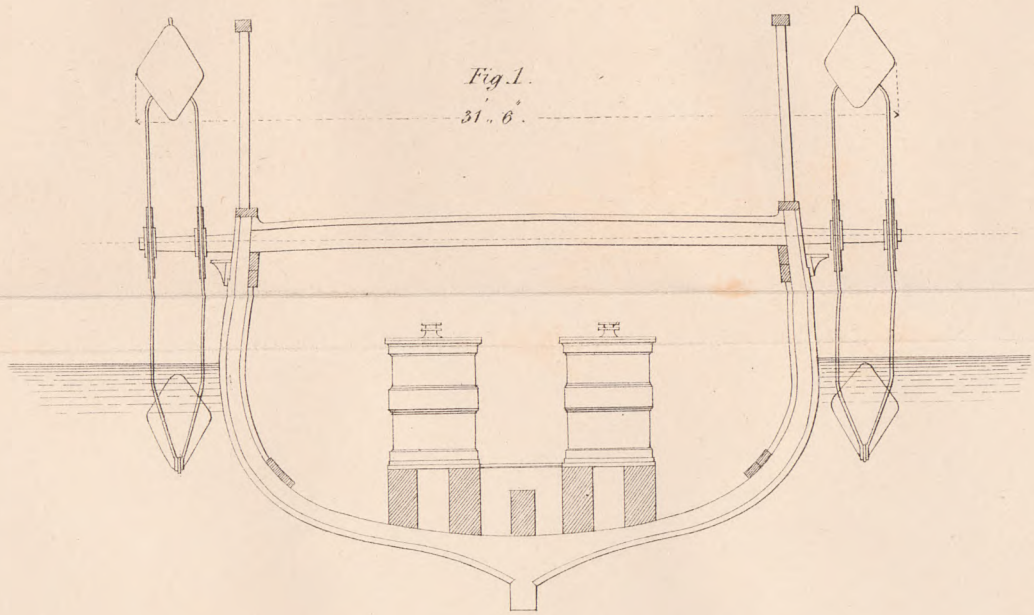
We are indebted to a friend for the *Cornwall Gazette*, Van Diemens Land. The Hydrography it contains will be found in our volume for 1837.

Thanks to another friend for the *Port Philip Gazette*.

RENNIES TRAPEZIUM PADDLE WHEEL.

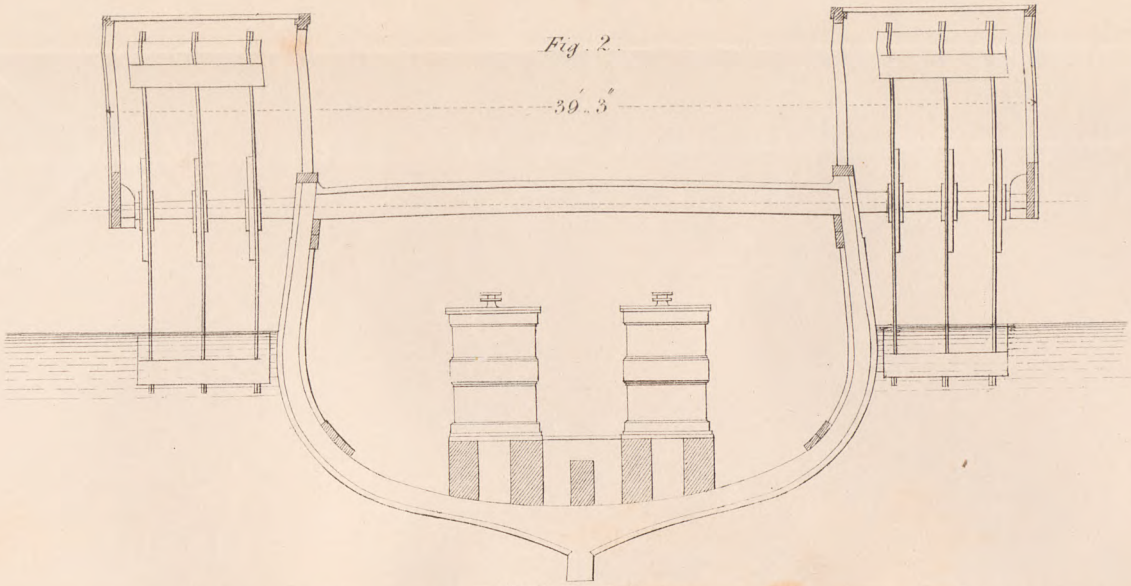
Section of Her Majesty's Steam Ship "African".
fitted with the Trapezium Paddle Wheels.

Fig. 1.

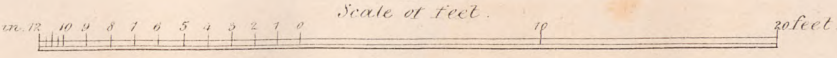


Section of Her Majesty's Steam Ship "African".
fitted with her former Paddle Wheels.

Fig. 2.



Scale of feet.



Day & Haghe Lith.rs to the Queen.

Published for the Proprietors of the Nautical Magazine, 1841.

Observations on the Navigation of the Baltic, and Gulf of Finland, to Petersburg, *with the customs of the trade.—By the Commander of a British Merchant Ship.*

While the commanders of merchantmen, employed with East and West India, American, and Mediterranean trades, have at various times, with a praise-worthy zeal for the improvement of navigation, and the information of strangers, contributed valuable information to the pages of the *Nautical;* I do not recollect since the commencement of that Magazine, any attempt at conveying information respecting the Baltic trade. Whether this proceeds from diffidence, on the part of those regularly employed in the trade, or whether they consider the Baltic so near our own shores, and so familiar to themselves, that it must be so to every one, I cannot say; but I feel satisfied, that information regarding this trade, cannot be too widely disseminated, particularly at the present time, when our mercantile intercourse with Petersburg has increased so much, and when so many vessels are now employed carrying cargoes to that port direct from the West Indies, Spanish Main, Mediterranean, &c., which were formerly carried to England, and thence shipped in the regular traders to Russia. A great many have proceeded in this manner to the Baltic, lately, quite unacquainted with the navigation and the customs of the ports;—and men of education and ability, who have successfully navigated their vessels across the Atlantic, and Pacific Oceans, have found themselves very much at a loss when entering the North Sea, on their way to the Baltic;—a place, which if they previously thought of it at all, it was with a contemptible sort of feeling for the *pond-like* sea, and all connected with it. And not only did the navigation of this sea, with its various narrow and tortuous channels, studded with rocks and shoals, give them uneasines and alarm, but the much traduced arbitrary laws of Russia, and its mis-called tyrannical custom-house regulations, all tended to harass the stranger, and make him unnecessarily timid and uncomfortable. Although not a regular Baltic trader, still I have some experience in the trade, and I have gathered, particularly on a late trip to Petersburg, from the West Indies, as much information as I could from the constant traders, some of whom, especially those from Hull, are as respectable men, and as well informed in matters relating to their profession as any traverser of the ocean. From a well informed respectable Hull trader of twenty years experience, I learned the substance of the following remarks, which I offer to the notice of your readers, trusting that they may prove of benefit to some of the uninitiated proceeding to Petersburg for the first time.

Proceeding from the English Channel, or from the Pentland Frith, or passage between the Shetland and Orkney Isles, a vessel may be steered for the entrance of the Sleeve, according to the winds, and follow the directions in the book, accompanying Norie's chart. Be particularly careful to give the coast of Jutland a wide berth, as a very strong current runs towards the Horn reef with westerly winds; the coast of Jutland is low all along, and not easily seen until the vessel is close to it. From Borenbergen however, to the Scaw, it is easily

recognized when seen, even by a stranger, from the chart and book. On the Norway side the shore is bold and rocky, and particularly about the Naze may be seen a considerable distance; approaching the coast, the vessel's position is easily recognized from the land; and various beacons, which when seen, are easily known from description.

Passing the Scaw, give the point a good berth to clear the Scaw reef, and in shaping a course for the Trindelen light-vessel, and indeed on all other occasions in the Cattegat and Baltic, make allowance for a current which is generally found *setting in the direction of the wind*, and with greater or less strength according to the duration of the wind. From the Trindelen, and steering to pass outside the Knobben be particularly careful. This is a shoal with a rock at its extreme end running about seven miles from the island of Anholt. There is a light-house on the end of the island, and a red buoy on the Knobben, but if the weather is not very clear neither can be seen in time to warn the navigator of his danger, particularly at night; and with strong south-westerly winds, a vessel bound downwards, and wishing to pass close to the buoy, to keep on the weather shore, runs great danger, as, if the weather is at all thick the light cannot be seen at the buoy. The loss of a very valuable vessel commanded by a friend of mine, took place last season from this circumstance; the wind was strong from south-west,—the vessel bound down under double-reefed topsails and courses, and a course steering to carry her outside the Knobben, but rather weatherly to avoid the Swedish coast; a bright look-out was kept, but all to no purpose; shortly after 8 P.M. she struck, and remained until 4 A.M., during which time the light was never seen; it then became visible. At daylight the vessel was found to be a very short distance inside the buoy. She beat over the reef,—was abandoned, and drifted over to the Swedish coast a wreck. This is no solitary instance, and all connected with this trade ought to petition the Danish government, and use every means in their power, to have a light-vessel stationed close to the extremity of the reef.

Running or steering upwards from the Knobben, the land, when the Narrows are approached is easily distinguished; the mountainous land about the Koll, and the high land about Nakke Head being easily known. Steering towards Elsinore Roads, strangers invariably keep too near the Swedish shore, and make an unnecessary circuit to avoid the Lappen sand. This shoal does not extend so far out as the charts lead us to suppose, and a mid-channel course will take a vessel well clear. Moreover, it is well pointed out by buoys and brooms, and if the wind is scant, time and distance may be saved by a prudent approach. These brooms are a large quantity of birch, in the shape of a common broom, fastened to the top of a pole, which is attached to the shoal. They are considerably elevated and more readily seen than buoys. If the wind and current are down so as to prevent the vessel turning into the roads, she may anchor on the Danish side, under the Lappen sand. The old absurd custom of lowering royals or top-gallant sails, on passing Cronberg Castle, is now abolished.

From England, and intending to proceed upwards as soon as cleared, a vessel should be anchored in a suitable position for getting underway, or if it be daylight she may be kept under courses by the mate, while

the master proceeds on shore and clears out. Vessels however, from the West Indies and other places, subject to quarantine, should be taken well up in the roads, above the town of Elsinore, and well inshore where the anchorage is good, and good holding ground. Opposite the town, and farther out the ground is too much cut up to hold by well, and in the strong westerly gales, which frequently occur, much damage is often done from vessels driving foul of each other. From the West Indies with cargo, on arrival, hoist a quarantine flag;—the quarantine boat will soon visit the vessel, giving the requisite orders as to the duration of the quarantine, &c. From the West Indies with sugar it is six days. This is a most absurd and ridiculous law, creating a detention and expense to the vessel quite unnecessary; it is not imposed by the Danish authorities, but by the Russian government, who are so timorous, as to require the performance of quarantine thus far from their territory. It often occurs, that the vessel placed under quarantine in Elsinore, has called at Cowes for orders, the master and crew been on shore, and sometimes a fresh crew shipped, still no abatement of the quarantine takes place. In my own case last year, I came to London with a cargo of logwood,—entered the London dock,—discharged the crew, and prepared for unloading; when the cargo being sold, and the purchaser wishing to send it to Petersburg, urged me to take it there at an additional freight,—I did so, shipped another crew, and after being a week in London proceeded to Elsinore, when the vessel was put in quarantine, and but for the strenuous exertions of the agents on shore, and my having the original clean bill of health from a loading port, I should have been detained six days. This is really too absurd, and calls loudly for redress. What infectious disease can a vessel loaded with sugar or logwood bring from the West Indies, after a sixty or seventy days passage? The only disease prevalent in these places, and that only in the few months of the rainy season, is the yellow fever, and I am confident that it could never exist in the climate of Russia, or ever linger on board the vessel so long. The matter should be represented to the British minister, at Petersburg, who certainly could point out the absurdity of the present law, and obtain redress.

Freed from quarantine, I would recommend the master of a vessel to proceed on shore in a shore-boat. They are very convenient, save time, prevent the crew getting grog, and enable the vessel's stores to be brought off at once, and in safety. The charge is moderate, and regulated by the authorities, so that no imposition can take place. At the entrance of the small harbour of Elsinore, the master will be questioned as to his port of loading, destination, &c., and receive a ticket, with which he will proceed to the custom-house, where he delivers his bills of lading and manifest. Thence he proceeds to the agent he may have chosen, who soon transacts the necessary business, and all of whom will be found very attentive and complaisant. Provisions generally, are moderate in price at Elsinore, and spirits, wine, tea, coffee, and sugar, should be purchased for the voyage, as they bear high prices in Russia. In order to induce the masters of vessels to give a true account of their cargoes, his Danish majesty allows them 4 per cent. on the amount of duties paid by the cargo.

Leaving Elsinore for the Baltic, a pilot should always be obtained

for the Grounds, a narrow channel between Sand Banks on the one side, and Salt Holmes reef on the other, and extending from Copenhagen to Dragoe. The currents in the Narrows are often very strong, and uncertain in their direction. The Mutual Assurance Societies formed amongst shipowners, on the east coast of England and Scotland, permit vessels insured by them to navigate this passage without pilots, which often leads to accidents, and I am surprised that they should pay the losses so frequently occurring through this cause. Besides, the pilotage is very moderate, and the pilots are a careful attentive set of men, well acquainted with their duty.

Being left by the pilots at the entrance of the Grounds, the navigator will proceed onwards towards the Baltic, between Falsterbo Point and Steffens Head. The former must be approached and rounded with great care, as a very dangerous reef runs a long distance from the point, and there is nothing to indicate the vessel's approach to the danger, except judging of the distance from the land. This want of a beacon or mark, has caused, and continues to cause many accidents; a light-vessel ought to be moored at the extremity of the reef, as the light-house on the point is so low, as to prevent its being seen at a sufficient distance. This light-vessel, and the one at the Knobben before mentioned, are indispensably necessary to the safe navigation of the Baltic; and considering the vast amount of British property employed on this trade, I am surprised the matter is not urged upon the Danish and Swedish governments. The land on the opposite coast of Steffens Head is bold, and may be approached with safety. There is also an excellent light on the point. Round Falsterbo a course may be shaped for the north end of Bornholm, which is bold land, and clear all round the north end; the south end is foul, and should never be passed except under peculiar circumstances. From Bornholm a course is generally shaped to sight the south end of Oland. On this course, if daylight, the land at Torhamn Head will most probably be seen; both this land however, and the island of Oland are low, and must be approached with caution, particularly in thick weather. From Oland a course is generally shaped for the south end of Gotland, this is also low land, and only to be seen at a very short distance, neither must any one trust to seeing any of the Swedish lights very clearly, or at any distance, as they are only of a second rate quality. From Gotland a course is shaped for Dagerort, the end of the island of Dago, at the entrance of the Gulf of Finland; this island is moderately high and clear. At the north-west end there is also an excellent light. It must, however, be noticed particularly, that none of the Russian lights are lighted from the end of April, until the beginning of August; it being considered that the almost perpetual daylight enjoyed during that period, is sufficient for the purposes of navigation. All the Russian lights are from lamps with reflectors, and are very good, and well kept and attended to. In shaping the course from Gotland to Dago, great care ought to be taken, allowing for the vessel's distance off the former, and the distance she should pass clear of the latter. Numberless accidents occur from courses being taken from the Books of Directions. I am confident that several of the courses given in the book I had were wrong; moreover, they are there given direct from a point in Gotland, to a point in Dago, and the navigator

sometimes forgets that he is a certain number of miles distant from the one, having it on his larboard hand, and wishing to pass a certain number of miles clear of the other on his starboard hand.

On entering the Gulf of Finland, and navigating amongst the numerous shoals and reefs with which it is studded, great vigilance and circumspection must be used; but, every dependance may be placed on the presence of the brooms and flags which point out the various shoals. So soon as the navigation is clear in the spring they are placed, and during the summer they are attended to, by vessels specially appointed. The Gulf is also remarkably well lighted, and during the season when the lights are in use they may be depended on. These beacons and lights being placed and maintained, are more for the benefit of the Russian men-of-war which are constantly cruizing there, than the merchantmen bound to their harbours. These brooms and flags are very conspicuous and well moored; the light-houses and various stone beacons are also very easily recognized, and with care and the assistance of both, the Gulf may be navigated in safety. To a stranger judging from the appearance of the chart, it appears a very difficult matter to encounter, and most American and Italian vessels bound to Petersburg, take Baltic pilots from Elsinore, for whose services they pay about sixteen pounds for the voyage up and down; in my opinion however, they may as well bring pilots from England, and I am certain they are quite as much required in the Sleeve and Cattegat, as in the Gulf of Finland. I do not say so because I have sailed up and down in fine weather, and under favourable circumstances,—on the contrary, in the very last trip I turned up the whole distance from Dago to Cronstadt, with the weather occasionally thick and unpleasant.

I rounded Dago in the evening, in the beginning of May, the wind was light and abeam, the weather fine, and a nice twilight remained during the short night. Over head it was clear, but a fog bank lay all around, extending about 12° above the horizon. Having marked the vessel's position on the chart, assured myself she was in a fair way, and shaped a course at midnight, I gave particular directions to the second-mate, who was a careful young man, to maintain the course given, and keep a very bright look-out for beacons and brooms, describing to him what I supposed they would appear like; and as the course to be steered, run the vessel well clear of all dangers, and as the wind was light, I lay down above my bed without undressing, full of all sorts of fancies, and very anxious about brooms, &c. I had dozed into a sort of sleep, when just as one bell was struck, down came the second-mate in a great hurry, calling me with "There is a broom right ahead Sir!" I instantly ran on deck and went forward, on my way calling the mate and watch below to jump up, and there, plain enough, stood the beacon as I thought, about a cable's length distant on the lee bow. I at once called out to look on the other bow: another broom was immediately seen there, and the brig was going very nicely between them, and right on a shoal. The vessel was immediately luffed to the wind, and the yards at the same time braced forward, the steering-sail tacks let run, the helm put down, and she stayed without any noise or confusion; I then told the man at the wheel to steer her exactly the

opposite course to the one we had been pursuing Astern were the brooms very distinct, and certainly within a cable's length. In half an hour, however, daylight increased, and instead of beacons they proved to be two vessels bound down, and at least six miles distant; their apparent proximity and diminished size arose from the refraction in the foggy atmosphere. During that day we saw many curious instances of the same refraction, houses, &c., at times appearing inverted above the fog bank, sometimes elevated, at others depressed, now enlarged, then diminished.*

The Book of Directions accompanying Norie's chart of the Gulf, is very good,—gives a very excellent account of the shoals, beacons, &c., and contains all that I could say on the subject. One very beneficial alteration ought however to be made in lighting the Gulf, and I am surprised those navigating it, have not already represented the matter to the Russian admiralty. Instead of having two lights on the north end of Hogland, I think there should only be one, and one placed on the south end of the island; the latter being a much clearer passage, more direct, and not having so many shoals in its vicinity as the north end, especially since a light was established on Rothscar: with a light in the south end of Hogland, vessels might pass the island with all safety. On coming upwards, and approaching the Narrows between Stirs Udden, and Dolgoi Noss, the land is plainly perceived on either side, and the shore clear; ahead the toll beacon light-house will soon be perceived, on the lower extremity of the island of Cronstadt.

Passing upwards between the toll beacon and London Chest shoal, and being guided in the fairway by the white flags on the starboard, and the red flags on the larboard hand, a look-out must be kept for the outer guard-ship, which is a frigate, riding from one to four miles distant from Cronstadt, carrying a blue flag at the fore. The guard-ship must on no account be passed, but the vessel hove to, or anchored just before she comes abreast of her. Any contravention of this law, either in going up to, or coming down from Cronstadt, subjects the party transgressing to a fine, which is invariably exacted. Having hove to, or anchored close to the guard-ship, her boat will soon come alongside to enquire into the health of the crew, &c. The officer on coming on board will sign the Sound pass, demand the bills of lading in duplicate, which he will enclose in an envelope and seal with his seal, at the same time requesting the master to seal it with his. The master will also sign an acknowledgment of the exact number of the bills of lading. All letters must also be shewn, either in the master's possession or that of any passenger, or other person on board. He must also declare whether there is any powder on board, if so, it must be delivered to the proper officer previous to entering the Mole. It must be noticed that duplicate bills of lading are indispensably necessary, but all ship-masters coming to Cronstadt, should provide themselves with a third copy, which they will find very useful in expediting the vessel's being entered at the custom-house.

* A good instance of the benefit of a good look-out in merchant vessels; the want of which is one of the many prolific sources of wreck. But our correspondent, "Mexicano," is one of those who knows the advantage of it.—Ed. N.M.

Being cleared by the guard-ship, the vessel will proceed towards the Mole, which is readily distinguished, keeping in the channel by observing the flags on either side, and on nearing the entrance to the Mole, anchor as near as convenient. The custom-house boat, and officers will soon come on board, for the purpose of sealing up the hatchways, which should be previously cleared for that purpose; loose bulkheads, and any place having communication with the hold: all parcels whether in the bills of lading or not, must be given up to be sealed up. The officers will then deliver to you a note, containing the number of seals placed on the vessel, and declare her at liberty to be hauled into the Mole. This the mate may proceed to do, procuring when he enters a pilot, to point out the vessel's berth, and to clear the way. It is advisable to cause the carpenter to nail small pieces of board over the seals, to prevent their being injured, as any breaking or even defacing of them is visited by a heavy fine.

The master will now proceed to the inner guard ship, a small hulk, lying inside the Mole, and close to the entrance on the left hand. There he must shew the Sound pass, powder note, and list of crew, quantity of ballast declared, if any, &c. He will then proceed to another hulk, adjoining the one last mentioned, which is used as a sort of branch custom-house, and occupied by the officers of customs, answering to our tide-surveyors, &c. then the sealed note containing bills of lading, letters, &c. must be given up. The master will then proceed to the office of J. Bocher, Esq., Her Britannic Majesty's vice-consul, and sole agent for all the British vessels trading to Cronstadt, and agent for all the merchants in Petersburg, receiving or shipping produce in British vessels. There, he will enter the vessel's name, port, &c. she is also put on a list, as in turn for a lighter to discharge. Next proceed to the custom-house taking with you, ship's register, list of crew, and if you have it, a third copy of bills of lading; when Mr. B's clerk will prepare the declaration, which must be done with care; and information for preparing which, had better be obtained before arriving in port. It must contain a list of all stores, provisions, &c. on board, as well as any new or unused clothes, natural or artificial curiosities, &c.; any trifling article, if at all unusual, found on board, when the vessel is searched, and not inserted in the declaration, will subject the master to a heavy fine, besides the confiscation of the article. After the lapse of a few hours, the ensign must be hoisted at the main, the officers will then come on board, and search the vessel: when this is done the discharge may be commenced so soon as a lighter can be procured. The officer on board will remove the seals from the hatchways, previous to discharging, and every day on the discharge being finished, the vessel will be visited by the proper officer, who will seal all up again. In discharging, or loading from lighters, where hatchways are sealed up, never permit any of the crew to break the seals. This must only be done by the proper officer, otherwise the vessel is subject to a heavy fine. The vessel being discharged, by hoisting the ensign at the fore the clearing officer will come on board. A strict search is now made, the declaration formerly made at the custom-house produced, and every thing on board is expected to correspond with it. If there is a greater quantity of wine, cigars, spirits, or other stores on board, than the law

allows, they will be removed to the custom-house stores under seal: at any future period, if a supply is wanted, it can, without any difficulty, be procured, by getting an order from the officer in the floating custom-house.

To be completed in our next.

SAILING DIRECTIONS FOR PORT LINCOLN, &c.—*From the South Australian Register.*

SIR.—Having been directed to sound and examine Thorny Passage, I have the honor to lay before his Excellency the soundings and observations I have been able to make, and such directions as I think may be found useful to strangers bound to Port Lincoln, or Port Adelaide.

In Flinder's chart there is a rock marked between Williams and Smiths islands, said to be breaking at times. I had a most favorable opportunity, and took every pains to discover it, but saw nothing of the kind. The master of a French whaler lying in Memory Cove, who was fishing there the last season, said, he had been through in the direction, and did not believe there was any rock between the above-mentioned islands.

North by west, one mile and a half from the north end of Thistle Island, is a large flat rock, that may be seen two or three miles from a ship's deck, and north three miles (where there is a rock marked in the chart) is a reef with six feet water on it at half tide, and does not show above water. It is therefore necessary to be very cautious, and not take the rock that is seen above water for the one on the chart, as passing that at what would be considered a safe distance, would lead a ship on the reef.

I passed through the ripple marked by Flinders, between Little and Hopkins islands, where it is supposed he lost his boat's crew. Small vessels must avoid going through it. In bad weather the sea must be tremendous; it is occasioned by the tide, and the sudden change of soundings (from eighteen to twelve, ten, and nine fathoms,) but quite clear otherwise.

About three miles from the entrance of Thorny passage is Memory Cove, where six or seven ships of the largest size may lie sheltered, and have seven fathoms within a few yards of the head of the cove.

There is also an extensive fine bay, between Taylors Island and the shore, where any number of ships may anchor, indeed there is sheltered anchorage anywhere, if required, from Taylors Island to Cape Dorington, at a fair distance from the shore.

Ships coming from the westward should run to the latitude 35° 35″ until they make Kangaro Island. If bound for Port Lincoln, and going through Thorny Passage, shape their course for Williams Island, giving Neptunes Island a berth, which may be seen four or five leagues; leaving Williams Island on the starboard hand, proceed on to the East Point, and enter the passage between it and Smiths Island; making the fair way up, by keeping the shore aboard, which is steep close to, leaving all the islands on the starboard hand, except Taylors Island, which will make a fair course by leaving it on the larboard hand. When to

the northward of Taylors island, proceed along shore for Cape Dorington. Off the Cape is a small island with a very good channel (though narrow) between it and the Cape, with five fathoms. In going through it borrow towards the island.

In proceeding to Boston bay, the south end of Boston island may be rounded pretty close; but in going through the North Passage, give the north point a berth of half a mile, as the water shoals off it in a north-east direction.

All around Boston bay the soundings are good and clear; ships leaving Cape Dorington, and bound to the westward, will find a south-east course carry them well between the shoals until they see the wedge, which they had better leave on the larboard hand and give it a good berth, as the peaked rocks run some distance off.

In running up Investigators Strait, make Point Marsden and the high land about Cape Jarvis, and keep it aboard, which will ensure a berth from Troubridge Shoal; as it is impossible to say, having Black-stairs Passage open, what may be the influence of the tide, proceed up the gulf in ten and eleven fathoms. Holdfast bay is due west of Mount Lofty; near the beach is a flag-staff rigged as the mast of a ship, this staff bearing east or opposite to it, in five fathoms, or two miles and a half from the beach, is the best anchorage for ships.

Ships bound for the port must run twelve miles higher up, taking care not to come within five fathoms, as the water shoals some distance off above Holdfast bay. The pilot station is between the bay and the bar, where there is a staff with a flag on it. When opposite this will be seen a large beacon buoy with a ball on it, pointing the fair way to the passage over the bar.

If it should be dark, or any other circumstance prevent the pilot getting on board, they may anchor, but not in less than five fathoms, which will be about two miles and a half from the beach. When at anchor in any part of the gulf, it is highly necessary to give a great length of chain in good time, and if the gale comes on, give all the chain possible, and keep from letting go the second anchor, which confines the ship in a ground swell and makes her strain. Ships not drawing more than fourteen feet may then proceed to the pilot station.

I have the honor to be, &c.,

THOMAS LIPSON, *Harbour-Master*,

Custom-house, 24th May, 1840.

To G. Hall, Esq., Private Secretary.

[Some useful remarks on Port Adelaide by Capt. Hindmarsh, R.N., will be found in our volume for 1839, p. 228.—ED. N.M.]

DESCRIPTION OF THE ISLAND ST. CROIX, *West Indies*.

THE following description of the island St. Croix, and the geographical positions by which it is accompanied from our talented Astronomer, Sir

Andrew Lang, will be most acceptable in the dearth of information which prevails in our books of direction concerning that island.

The latitude and longitude of the principal places or points in the Danish Island, St. Croix, in the West Indies.

	North lat.	Long. west.	From
1. East End point, or eastern extremity of the island.	17° 45′ 30″	64° 34′ 00″	Greenwich.
2. A. Lang's observatory or signal station	17 44 32	64 41 00	"
3. Flag-staff of the outer point battery, (Fort Louisa Augusta) at the entrance of the harbour of Christiansted	17 45 28	64 41 32	"
4. Do. of Fort Christiansværn in the town of Christiansted	17 44 59	64 41 58	"
5. Do. on pinnacle of Signal Hill	17 44 13	64 41 55	"
6. Do. of Bulow's Minde, the country residence of his Excellency Governor-general Von Scholten	17 44 33½	64 43 32	"
7. Salt River point	17 47 12	64 44 45	"
8. Highest part of Mount Eagle at a broken flag-staff	17 45 49	64 48 31	"
9. Bodkin's wind-mill	17 45 12	64 50 01¾	"
10. Hams Bluff, or north-west Bluff	17 46 24	64 52 03	"
11. Flag-staff of the fort at the town of Frederiksted, commonly called West End town	17 43 10	64 52 48	"
12. Sandy Point the south-west extremity of the island	17 40 30	64 53 48	"
13. North-west rounding of West End Bay	17 44 57	64 53 27	"
14. Buck Island is a small island, an appendage to St. Croix, of which the eastern point or extremity is in	17 47 18	64 36 40	"
The north-western point, or do.	17 47 30	64 37 37	"
The highest part of this small island is about 350 feet above the level of the sea, and is in	17 47 15	64 37 03	"

Remarks applicable to the numbers 1 to 14.

1.—Fully nine nautic miles N.E.b.E. ½ E. from this point, and about eleven nautic miles E.b.N. from the east point of Buck Island commences the eastern extremity of an extensive bank or shoal, the northern limits of which round off from thence to the north-west; soon afterwards stretches westerly, inclining at last to the southward of a westwardly direction, towards Buck Island eastern shoals, with which it may be considered as connected. The northern edge of this shoal is a narrow coral ledge of several miles in extent, on which, five and a half fathoms of water is the least depth yet found; the more common depth being six, six and a half, and seven fathoms. Along the whole line of this northern edge, and to and at the very eastern extremity of the bank, where there is not less than seven fathoms water, I have observed the sea to break in an awful manner during severe gales of wind, and sometimes also in moderate weather, during the great northerly ground swell which occasionally sets in during the winter months. A line of direction drawn from my observatory east 24° 15′ 30″ north,

passes through the shoalest parts of the northern edge of this coral ledge through its whole length, until it approaches the eastern limits of the shoal, when it rounds off to the south-east and southward, as far as the bearing east 15° 50′ north from my position. I consider its most eastern part to bear from my observatory east 17° 20′ north, which will place it in latitude 17° 49′ 25″ north, longitude 64° 24′ 40″ west from Greenwich; having there seven fathoms and a half, which in coming from the eastward you at once strike from an ocean depth, and at which spot the east end point of St. Croix is distant nine and three-quarters nautic miles, and the east end of Buck Island eleven and a half nautic miles. In approaching the northern edge of the shoal from the northward, you at once get from an ocean depth upon its shoalest part; passing which, and standing to the south, the water gradually deepens on a clear sandy bottom, during the short time taken in crossing the bank when standing in this direction.

2.—The height of this above the level of the sea is 440 feet. The latitude is true to within one second, the longitude is the result of the labour of years, and the present assumption of 64° 41′ 0″ in arc, or $4^h.\ 18^m.\ 44^s.$ in time west from Greenwich, I consider to be determined with such certainty, that I do not think the error in its determination can exceed four seconds in time, or one minute in arc, and I trust is less. I am induced to consider it the most accurately determined position in the West Indies, and the situation of some other islands and places on the Spanish main have been corrected from it. On the above data, the longitude of the other stations in the island are accurately determined,—their latitudes are certain to one or two seconds.

3.—Nearly one mile due north from the entrance of the harbour of Christiansted, is the western extremity of a reef, called the Scotch reef, which stretches from thence with its shoals fully one mile and a half to the E.N.E., rendering the approach to the harbour dangerous to strangers.

4.—This is the most northern part of the town of Christiansted. To the north of this, and between No. 3 and 4 lays the harbour, which may be considered one of the safest among the windward islands. Vessels drawing sixteen feet can be brought in with safety.

5.—This rises directly to the south of the town, and is 858 feet above the level of the sea.

6.—The eminence on which this delightful and extensive residence is erected is 593 feet above the level of the sea; it embraces a magnificent prospect of this island, and from its unobstructed situation, having no higher land in its vicinity to darken its being seen, it becomes with its numerous buildings one of the most conspicuous objects for observation from vessels at sea; a view of which to the southward it commands from S.E.b.E. to a W.S.W. bearing, and towards the north from E.b.N. to a north-west bearing. From the windows of the saloon, the horizon of the sea is distant twenty-eight geographic miles, so that in the common state of the clear atmosphere of this climate, no vessel of any magnitude can enter the harbour of the island of St. Thomas, or pass down the intermediate channel without being noticed.

7.—This is comparatively a low point, and one of the most northerly in the island. About one-fourth of a mile to the north of it is a

dangerous sunken rock, called the White Horse, on which the sea generally breaks.

8.—This is the highest point of land in the island, and is 1,162 feet above the level of the sea. Near one mile to the south-east is Blue Mountain, which is not so high as Mount Eagle by about sixty feet. They are connected together by a lower ridge which runs from one to the other.

9.—This mill is 949 feet above the level of the sea, there being no other in the island at such an elevation. It is also a conspicuous object from the sea, with its cane cultivation extending still higher.

10.—Bold to, along its high precipitous northern face and cliffs.

11.—Frederiksted, or West End Bay, is an extensive and beautiful bay, affording excellent and smooth anchorage, except when the wind has westing, when like all anchorages of that open kind it becomes dangerous.

12.—To the south of this low and deceiving point, which forms the south-west horn or extremity of West End Bay, a dangerous reef extends near a mile to the southward, and on the back or to the eastward of it, shoal water extends to a considerable distance, more deceiving in fact than the reef itself.

13.—Off this rounding, which is exactly abreast of Butlers Bay wind-mill, a shoal runs off about a quarter or one-third of a mile, and which is, in fact, the only danger approaching Frederiksted from the northward.

14.—This small island, except on its southern side, is surrounded with dangerous reefs and shoals, extending fully one mile to the W.N.W. of the north-west point of the island, fully two miles to the eastward of its eastern extremity, and about one mile to the north of the island, forming in the intervening bearings a circuitous connection of the greatest dangers which all prudent persons will avoid approaching.

From the east end of St. Croix down to my position, (or rather the hills to the south of it,) the tops of the hills are nearly equi-distant from the sea, on the north and south sides of the island; the most eastern of these hills is called the Sugar Loaf, its top near two-thirds of a mile from the east end point is, (from memory,) about 750 feet high, and is in latitude 17° 45′ 18$\frac{3}{4}$″ north, longitude 64° 34′ 35″ west from Greenwich; it is connected by a ridge to Goat Hill, which is not quite so high as the Sugar Loaf. From Goat Hill there is a sudden descent to a strip of low land, not 100 feet above the level of the sea at its highest part, which crosses the island here where it is very narrow, not being at this place 4,000 feet broad. From thence, the hills again irregularly ascend, and reach a height in some places exceeding 800 feet, forming with several spurs a connected chain to a pinnacle, (near two miles and a half to the eastward of my position,) which is 837 feet high. The land from this again descends, and the island is crossed by some low land, not 150 feet above the level of the sea in its highest part; some irregular heights here follow from about 400 to 200 feet, until about two-thirds of a mile to the eastward of my observatory, the land begins to rise, and half a mile S.E.b.S. from my position is a pinnacle of my own, 780 feet in height, on a spur of which, running out to the north-

ward, my observatory is erected ; to the westward of my pinnacle there is a hill, with a rounded summit 800 feet high. Here again the land descends to about 450 feet, forming a narrow gorge or saddle, but immediately ascending in a north-westerly direction, it unites itself to Signal Hill, which rises directly to the south of Christiansted to a height at its flag-staff as already stated of 858 feet. The land again descends, and the island is crossed about a mile to the westward of Christiansted, at an elevation of about 200 feet at its highest part. It then rises towards Bulows Minde, from whence the ridge extends with its undulations and diminutions in its height to the north-west, declining to a level with the sea at Salt River. From the westward of Salt River to Hams Bluff, the north side hills can be considered as ascending abruptly, and for more than two miles to the eastward of the Bluff precipitously from the sea. The first pinnacle to the westward of Salt River is Claremont north-east pinnacle, reaching a height of 854 feet, followed by one or two others of a similar elevation. A descent in the ridge then occurs, when it again rises to the connecting ridge between Blue mountain and Mount Eagle, the heights of which are already given. A descent then takes place to the westward of Mount Eagle, followed by an ascent towards Bodkins mill, and a pinnacle to the westward thereof about forty feet higher, from whence it again descends one or two hundred feet, forming that extensive, irregular, romantic, ridgy district, extending round Hams Bluff, passing Butlers Bay, and approaching near Frederiksted ; stretching from thence into the interior round St. Georges Hill, and towards the E.N.E., and at last rounding and returning into the heights on which Bodkins mill is built, comprehending an extent of near 7,000 acres of land, greater part of which is in sugar cultivation. To the south of this district and of those hills and ridges, already enumerated from Signal Hill to Mount Eagle,—the rest of the island is an extensive inclined plain. Sloping gently from the base of the hills to the sea, extending from Sandy Point to a direction south-east of Signal Hills, a few eminences and inequalities diversify its surface, forming good situations for some of the numerous dwellings, wind-mills, &c., &c., with which this beautiful tract of fertile country is interspersed.

Along the greater part of the south side of the island, a ledge of reefs with a few channels, practicable for small vessels, lines the coast at a distance from the shore in some places of near two miles, and although they generally break, thus showing their danger, still shoal water extends some distance to the south or seaward of them, therefore they must be approached with great caution, especially as no correct survey has ever been made of them that I know of;—this object I once had in contemplation, but it is now beyond my means. These reefs commence near the shore, at a small distance to the westward of the east end point, gradually increasing their distance from the shore according to the irregularity of the projecting points of the coast. The most dangerous part of them, and the most distant from the shore, commences in running down to the westward with an outer ledge, when you have Signal Hill flag-staff bearing about north, and continues for eight miles until you bring the flag-staff on St. Georges Hill, which is about a mile and a half to the east of the fort at Frederiksted, to bear in the same

direction, say north. Running down this space, you should keep a league off the shore, which is also deceiving from its being so very low. You have then to give a corresponding berth to the dangerous reef and the shoal water on its back, which runs off from Sandy Point, which you will be clear of, when you bring the north-west rounding of West End Bay to bear N.b.E., when you can haul up under the lee of the reef and the land.

The dangers running down on the north side of the island commence with Buck Island reefs, which are described under No. 14; keep to the north of this small island near a league, and when at this distance it bears south, steer down west, (which carries you far to the north of the Scotch reef, Christiansted harbour reef, or the White Horse off Salt River point,) until you bring Hams Bluff, the bold north-west promontory of the island, to bear S.W.b.W., when haul up to pass it, and afterwards to run along the land keeping about a mile off shore, until you pass the north-west rounding of West End Bay, when you can haul up for the anchorage. I have confined my observations to the dangers a vessel bound to West End is exposed to, by running down on either side of the island, and I have done so in consequence of the late arrangement by which the packet steamers call at West End, with the outward mails twice a month; they of course on this service come from the south-eastward. Hitherto they have run down from the south side, which is certainly nearer their direct course, and under the direction of their skilful and prudent commanders; there can be but little risk in the day time, or even at an early part of the night, if a good observation of the land has been had before evening; but if the land cannot be made before evening, and that they are not permitted to lose time by lying to, I decidedly assert, that it is safer at night to make and pass to the eastward of the East End extremity of this island, rounding the outside of Buck Island at the distance of a league, running down then to the westward, &c. as just described. I cannot divest myself of the apprehension of some accident happening about their passing Sandy Point spit in a dark night, when the land has not been previously made with daylight, and certainly the correspondence of this island alone would not warrant the risk of such valuable vessels being exposed to the attempt. The only method which occurs to me of obviating or avoiding this risk, and likewise losing not a moment of their time, which is an important object, would be for the commanders of these vessels to be instructed to stop at West End, for the delivery of the outward mail, at all times when they found they could reach Sandy Point with daylight, or could otherwise get so near the land with daylight, as to be satisfied that there was no risk in rounding it; but if they found it would be midnight before they could reach it, that then they should be authorized to haul up in proper time to pass to the eastward of this island, and afterwards to run down to West End, on the north side of the island, or at once proceed direct to St. Thomas, as circumstances and weather might warrant without stopping here, leaving the mail for this island there, to be brought over by one of the island packet boats which are crossing daily.

The steamer collecting the island mails for delivery to the packet at St. Thomas, of course calls likewise twice a month at West End,—they

hitherto have arrived there in the daytime, and I presume are so timed accordingly. They run down on this island from St. Kitts. The steamers on their return to windward call also at West End, and proceed on their voyage round Sandy Point, but this they can do in taking a departure from West End, with perfect safety either by day or by night.

When feet are given, English feet are to be understood.

ANDREW LANG.

St. Croix, December 25th, 1840.

STORMS OF THE MEDITERRANEAN.

"In science, as in the useful arts, the advantages of a division of labour are apparent in the more complete mastery which an individual obtains over a subject to which he directs constant attention; but the benefit does not end here, for unlike the proficiency which is attained by subdividing the parts of manual employment, the successful prosecutor of any particular scientific subject, is enabled to communicate the results which he requires, and thus enables others to profit by his investigations. The labours of numerous individuals, each directing his attention to a part as well as the whole of a subject, tend to perfect the science which it embraces."

IT is gratifying to find, that the philosophy of storms is engaging the attention of scientific individuals, as manifested by the lectures which have been given at Portsmouth, by a clergyman, and very recently by a physician, (Dr, Arnold,*) at Clapham. This gentleman says, "when we reflect upon the millions of property hourly committed to the perils of the treacherous element,—when we remember the thousands of gallant vessels which now proudly float upon the billows of the ocean, and when we call to mind the hundreds of enterprising and hardy mariners who are torn from the bosoms of their families, to provide for the exigencies of their wives and children,—any theory or explanation which has for its object their avoidance, or escape from storms and tempests,—those terrible visitations of Providence, by which thousands are yearly hurled into eternity, and the interest of our merchants and traders seriously affected, must be important not only to those immediately concerned, but to the philosopher, the philanthropist, and above all to the christian."

In the course of his address, the learned doctor urged the importance of indomitable perseverance, and indefatigable research to those who would unravel the mysteries of nature.

No doubt there are other individuals who are pursuing the study with earnestness, and, at no distant period, we may expect to see the theory brought as near to perfection as it is possible to be, by the sagacity and intelligence of the human mind; in the mean time it would be a gratifying piece of information, to hear that naval officers afloat had been directed, to consider the law of circular storms as an essential branch of their professional studies.

* Dr. Arnold appears to have passed the ordeal of some hurricanes in Jamaica.

That circular hurricanes are often experienced in the Mediterranean sea can no longer admit of a doubt, and it is probable that these meteors are formed in the Atlantic, and not within the area of the internal sea, at least those of considerable diameter, if not the whole. And as the Madeiras are not exempt from their ravages, we may not unreasonably consider that their transits eastwardly, take place sometimes as low as the parallel of 30° north, after the change of route in the west. It is also indisputable that some meteors curve as low as 20° north in the Mexican Sea; and it may be within probability to conceive, that occasionally a *stray* meteor shall be found directing its return course so far easterly from the point of change, as to repass over the greater Caribbees, instead of pursuing the north-easterly route along the east coast of North America.—And further, are we not justified in believing, from the transit of storms over Gibraltar, that their route has been direct to the north-east, from the meridians of the windward islands.

At Gibraltar these storms have been remarked for some years past as being of a rotary character; and it will be recollected that H.M.S. Tribune, was wrecked at Tarragona, to the north-eastward, in 1839, during the passage of a furious hurricane over that place. It appears also that on the 22nd of December, 1840, Barcelona was visited by another of large dimensions, as it occupied two days and three nights in its transit! One hundred vessels were in the port, of which ten sunk, and most of the others were more or less damaged;—three French men-of-war rode out the gale. We trust that the officer who sent a report to the Minister of Marine, extended his observations to the operation of the wind, as well as to the effects produced by it. The recording of facts like these cannot fail of becoming useful in the investigation of the subject; they are connecting links to the chain of reasoning to be exercised in the discussion, and are otherwise accessary in the developement of the truth,—no apology therefore is necessary for pursuing them.

The *Diario di Roma* gives an account of a severe storm which was experienced at the Papal metropolis, on the 5th day of January this year. It appears, that the violence of the wind was confined to an elevation under 160 feet from the level of the sea, as at the top of the Astronomical Observatory, the air was in a state of calm, during the whole time of its continuance. This fact is curious, on account of the current of air confining itself to the surface; the phenomenon is not we believe singular, as whirlwinds are often confined to the surface of the land and sea for some time after their formation. Mr. Redfield considers that at first the operation of the hurricane does not reach to any great elevation, and Mr. Ostler is of opinion, that the gyration at times, may be above the surface of the land, whereby a vacuum is formed below, towards which the air rushes from all sides.

Many of those storms which pass along the longitudinal extent of the Mediterranean, appear to find their way across the Black Sea also. On New Year's day a most destructive hurricane made its transit over that basin of the ocean, so proverbial for winter tempests. Eighteen Genoese, three English, and many Austrian, Sardinian, and Neapolitan vessels were lost; seven are reported to have foundered in the Bosphorus.

During the night of the 4th of January this year, a furious storm raged over Naples,—two Neapolitan ships-of-war were lost, and it is stated that on the same day, an earthquake was experienced at Riggio in Sicily.

From these and other notices, it appears that the transit of meteors is not confined to the upper portion of the Atlantic, but sweep across from west to east and north-east from the lower latitudes. It appears too, that the commonly received opinion of hurricanes, not occurring nearer the equator than the ninth degree north, has been refuted in at least one instance, as recorded by Captain Smith, of H.M.S. Comus, who encountered a storm of that nature on the 17th of October, 1833, on the north coast of Darien, which lasted twelve hours, the changes of wind having been from north-west to south-west; subsequently, Capt. Smith ascertained that the southern limb of the meteor had devastated the city of Panama, in the harbour of which the vessels were wrecked. As this storm was progressing due west, unless it was disorganized by the mountains, it must have passed into the Pacific, and probably pursued its course onwards to the China Sea.

Passing on to the Syrian coast, a few remarks may be made on the memorable storm in which H.M.S. Zebra, was stranded "high and dry," and Beyrout suffered so much damage. Not the least extraordinary circumstance attending it is, the curious fact of the sea *breaking* in forty-six fathoms, or 276 feet!; this is thirty-four or thirty-six fathoms more than has ever before been noticed.

As far as information is obtained from the accounts that have been published,—all deficient in the main particulars as usual, it would appear that the evening of the 1st of December was "quite fine," with little wind, but, that during the night, the storm commenced from the south-westward, attended with rain and lightning, and ended early on the morning of the third, its duration having been about twenty-four or twenty-six hours. The changes of wind are only incidentally mentioned as having been from south-west to west, and round to N.N.W. or N.b.W.; the shifts, therefore, amounted to ten or eleven points.

There is no notice when the *crisis* of the gale occurred, and the direction of the wind at the time,—which omission is to be regretted. It appears, however, that the meteor was moving to the E.b.S., and should this be correct, it follows that the height of the storm was from the W.b.N., and consequently, *after* the Bellerophon had her topsails blown away,—as the wind, from what is subsequently stated in her account, appears to have then been *southerly* of west.

The gusts are described as the "fiercest" that the narrator "ever experienced at sea, and of much longer continuance;" nevertheless, as fresh topsails were not only bent, but the fore topsail and the mizen, set with impunity on a wind, it may be inferred that the force of the gale must have been moderate, in comparison with that of a tropical hurricane, under the pressure of which, experience has shewn, that the strongest *storm-sail* set transversely to the course of the wind, would not hold many seconds; and, as to the men attempting to *bend* a sail aloft, decidedly no such thing could be accomplished, with the force of the wind as high as twelve. During the intervals of lulls, if these lasted sufficiently long, such a feat might perhaps be performed.

It may be inferred, that although violent, the hurricanes of the Mediterranean like those which pass over Great Britain, are less severe throughout, than those experienced within the tropics.

It clearly appears, that all the officers of the squadron have not yet given their minds to the study of the "law of storms,"—rotary storms; this is evident from the expression of hope, that the wind would draw round more southerly. A knowledge of the theory would have explained at once, that the wind must have been expected to veer round to the north-westward, as the meteors proceed from west towards the east. The propriety, therefore, of keeping the subject "alive," in the pages of the *Nautical*, seems sufficiently apparent. The *excellent* gunnery practice for killing men, (exemplified at Acre before the aerial contention,) is a necessity which forces itself (deplorably enough,) upon the admiration of the martial spirit, against the moral conviction of its barbarity. Should we then neglect the more imperative qualification for essaying to ensure the safety of men's lives? To this philanthropic end, the humble endeavours of one of your correspondents have been directed, and who may lay claim to as powerful an *esprit-de-corps*, as can possibly attach to any of the youthful practitioners of shot and shell.—To your exertion and talent, Mr. Editor, opposed as these are by the limited space of your pages,—all seamen must feel the greatest obligation.

Upon the whole, the squadron* appears to have escaped wonderfully well on the occasion, and if seriously considered, the event may be of great service in inducing caution with respect to vessels approaching the southern shores, and Levantine portions of the Mediterranean during that season, (November to February,) when the progressive hurricane may be expected to make its transit from westward to eastward along the entire length, or to cross it obliquely.

It is now evident that something more than good seamanship is required during a hurricane,—a knowledge of the theory; and although we have heard it called an abstruse and perplexing study, we are persuaded from practice, that it does not require an intuitive genius to master it; and we can safely assure the seaman that as a study, he will find it far more inviting than some of the dry mathematical calculations which he has to pursue in his avocation; and as in the case of the expert navigator, he will assuredly find his proficiency in it bring its own reward,—a consummation which is as attainable in the one as in the other, and this with far less compass of mind and energy of memory, when the nature of the phenomenon is clearly understood.

In a new edition of Lieutenant Raper's invaluable work, it is hoped that a chapter on "circle sailing" will be added.

S. J.

February 10th, 1841.

* Subsequent accounts inform us, that the French Algeria squadron, and merchant ships, have suffered more than the English. The *Marne* corvette was lost with fifty-seven of the crew, the captain, surgeon, and a midshipman. Acheron steamer missing; twenty-eight out of thirty-two merchantmen wrecked. Triton, eighty, seen in great distress,—not since heard of. The Jena and Neptune ninety, and Uranic frigate, suffered in masts, sails, and spars, and it is supposed they had put into Cagliari, in Sardinia.

Remarks on the present state of our Knowledge relative to Shooting-Stars, *and on the determination of Differences of Longitude from observation of those Meteors.—By Mr. Galloway.*

[From the Transactions of the Astronomical Society.]

After adverting to some of the earlier opinions which have been entertained on the nature of fire-balls, shooting-stars, and other igneous meteors, the author remarks that no very definite theory was formed respecting them till towards the end of the last century; for although the cosmical origin of the more remarkable bolides and fire-balls had been suspected, the shooting-stars were generally regarded as atmospherical phenomena, which were ascribed by some to electricity, and by others to the inflammation of hydrogen gas accumulated in the higher regions of the atmosphere. In 1794, Chladni published his celebrated work, in which he gave a catalogue of all the recorded observations of fire-balls: and, from a comparison of the different descriptions, inferred that these meteors have not their origin in our atmosphere, but are cosmical masses moving through the planetary spaces with velocities equal to those of the planets, which, when they encounter the earth's atmosphere, are inflamed by the resistance and friction, and become luminous, sometimes bursting into pieces, and scattering masses of stone and iron on the ground. This opinion was at first greatly ridiculed; but the repeated and even not unfrequented fall of meteoric stones, and the discovery by Howard that all of them present an almost perfect similiarity of constitution, widely different from that of any substance found on the earth, at length forced conviction even on the most sceptical.

From the close resemblance between fire-balls and shooting-stars, and, indeed, the impossibility in many cases of distinguishing the one class of meteors from the other, Chladni was led to ascribe a cosmical origin to the latter phenomena. At this period, however, there were no observations from which precise or certain conclusions could be formed respecting the altitudes, velocities, or paths described by the shooting-stars—the elements by which the question of their existence within or beyond the atmosphere could be solved.

In the year 1798, the first series of observations for determining these points, was undertaken in Germany by Brandes and Benzenberg. Having selected a bass-line of about nine English miles in length, and stationed themselves at its extremities, they began to observe on nights previously agreed on; and when a meteor was seen, they immediately traced its apparent path on a celestial map, noting carefully the exact times of its appearance and extinction, with any other circumstances likely to assist in identifying it. The meteors observed simultaneously at both stations were in this manner recognised with considerable certainty; and the comparison of their paths on the two maps afforded data for the determination of their parallaxes and altitudes. The results were as follows:—Between the 11th of September and the 4th of November, 1798, only twenty-two corresponding observations were obtained from which the altitudes could be computed. The altitude of the lowest was about six English miles; there were seven under forty-five miles; nine between forty-five and ninety miles; six above ninety miles; and one at an altitude of about 140 miles. There were only two observations from which the velocity

could be deduced: the first gave twenty-five miles, and the second from seventeen to twenty-one miles in a second. The most remarkable result was, that at least *one* of the meteors moved upwards, or away from the earth. By these observations the perfect similarity between fire-balls and shooting-stars, in respect of velocity and altitude, was completely established.

Another attempt, on a more extensive scale, to determine the altitudes and velocities of shooting-stars by means of simultaneous observations, was made by Brandes in 1823, assisted by a number of associates resident in Breslaw and the neighbouring towns. The observations were continued from April to October, and during this interval about 1,800 shooting-stars were observed at the different places, out of which number ninety-eight were found which had been observed simultaneously at more than one station. The altitudes of four of these were computed to be under fifteen English miles; of fifteen between 15 and 30 miles; of twenty-two between 30 and 45 miles; of thirty-five between 45 and 70 miles; of thirteen between 70 and 90 miles; and of eleven above 90 miles. Two of these last had an altitude of about 140 miles; one of 220 miles; one of 280; and there was one whose height was computed to exceed 460 miles. Thirty-six orbits were obtained; in twenty-six of which the motion was downwards, in one horizontal, and in the remaining nine more or less upwards. In three cases only the observations were so complete as to furnish data for determining the velocity; the results were respectively 23, 28, and 37 English miles in a second, the last being nearly double the velocity of the earth in its orbit. The trajectories were frequently not straight lines, but incurvated, sometimes horizontally, and sometimes vertically, and sometimes they were of a serpentine form. The predominating direction of the motion was from north-east to south-west, contrary to the motion of the earth in its orbit,—a circumstance which has been generally remarked, and which is important in respect of the physical theory of the meteors.

A similar set of observations was made in Belgium in 1824, under the direction of M. Quetelet, the results of which are published in the *Annuaire de Bruxelles* for 1837. M. Quetelet was chiefly solicitous to determine the velocity of meteors. He obtained six corresponding observations from which this element could be deduced, and the results varied from 10 to 25 English miles in a second. The mean of the six results gave a velocity of nearly 17 miles per second, a little less than that of the earth in its orbit.

The last set of corresponding observations referred to in the paper was made in Switzerland on the 10th of August, 1838; a circumstantial account of which is given by M. Wartmann in Quetelet's *Correspondance Mathématique*, for July 1839. M. Wartmann and five other observers, provided with celestial charts, stationed themselves at the observatory of Geneva; and the corresponding observations were made by M. Reynier and an assistant at Planchettes, a village about sixty miles to the north-east of that city. In the space of seven and a half hours, the number of meteors observed by the six observers at Geneva was 381; and during five and a half hours, the number observed at Planchettes by two observers was 104. All the circumstances of the

phenomena—the place of the apparition and disappearance of each meteor, the time it continued visible, its brightness relatively to the fixed stars, whether accompanied with a train, &c., were carefully noted. The trajectories were then projected on a large planisphere. The extent of the trajectories described by the meteors was very different, varying from 8° to 70° of angular space, and the velocities appeared also to differ considerably; but the average velocity concluded by M. Wartmann was 25° per second. It was found, from the comparison of the simultaneous observations, that the average height above the ground was about 550 miles; and hence the relative velocity was computed to be about 240 miles in a second. But as the greater number moved in a direction opposite to that of the earth in its orbit, the relative velocity must be diminished by the earth's velocity (about nineteen miles in a second.) This still leaves upwards of 220 miles per second for the absolute velocity of the meteor, which is more than eleven times the orbital velocity of the earth, seven and a half times that of the planet *Mercury*, and probably greater than that of the comets at their perihelia.

From the above results, it is obvious that the heights and velocities of the shooting-stars are exceedingly various and uncertain; but if the observations are in any respect worthy of confidence, they prove that many of these meteors (according to Wartmann's observations, by far the greater number) are, during the time of their visibility, far beyond the limits to which atmosphere is supposed to extend, and that their velocities greatly exceed that which is due to bodies moving at the same distance from the sun under the influence of solar gravitation.

It is, perhaps, impossible to form any correct estimate of the absolute magnitudes of the meteors. Their apparent magnitudes differ greatly; the greater number resembling stars of the third or fourth magnitude, while many are equal to stars of the first, and some even surpass *Jupiter* and *Venus* in brilliancy. It is remarkable that the largest are those which have the greatest altitudes, and only the smaller ones appear to come within twenty or even forty miles of the earth.

With respect to the casual observations of the phenomena, the accounts of which are very numerous, the most interesting conclusion which has been inferred from them is the periodical recurrence of shooting-stars in unusual numbers at certain epochs of the year. Of these epochs, the most remarkable is that of November, on account of the prodigious number of meteors which have been seen in some years at that time. The principal displays were in 1799, 1832, 1833, and 1834. On the 11th of November, 1799, thousands were observed within a few hours by Humboldt and Bonpland at Cumana; and on the same night by different persons over the whole continent of America, from the borders of Brazil to Labrador, and also in Greenland and Germany. On November 12th, 1832, they were seen over the whole of the north of Europe; and on November 12th, 1833, the stupendous exhibition took place in North America which has been so often described. From the accounts of this phenomenon collected by Prof. Olmsted, M. Arago computed that the number of meteors on this night amounted to 240,000. In 1834, a similar phenomenon recurred on the night of November 13th, but on this occasion the meteors were of a smaller size. In 1835,

1836, and 1838, shooting-stars were observed on the night of November 13th, in different parts of the world; but though diligently looked for one the same night in the last few years, they do not appear to have been more numerous than on other nights about the same season,—a circumstance which has shaken the faith of many in their periodicity.

The second great meteoric epoch is the 10th of August, first pointed out by M. Quetelet; and although no displays similar to those of the November period have been witnessed on this night, there are more instances of the recurrence of the phenomena. In the last three years shooting-stars have been observed in great numbers, both on the 9th and 10th; but they appear in general to be unusually abundant during the two first weeks of August. The other periods which have been indicated are the 18th of October, the 23rd or 24th of April, the 6th and 7th of December, from the 15th to the 20th of June, and the 2nd of January; and it is not improbable that further observations will add to the number.

The different theories which have been given to explain the origin and phenomena of the shooting-stars are next stated. The following are the principal:—

1.—That the shooting-stars and fire-balls are substances projected from volcanoes in the moon. It is known that a body projected vertically from the moon with a velocity of about 8,500 feet in a second would not fall back upon the lunar surface, but would recede from it indefinitely; and in order to reach the earth the projectile would only require, under the most favourable circumstances, to have a velocity of about 8,300 feet. Such a velocity, which is only about four or five times greater than that of a cannon-ball, is quite conceivable; but the extraordinary exhibitions of 1799 and 1833, to say nothing of their supposed periodicity, is utterly irreconcilable with the theory of a lunar origin. Benzenberg, however, adopts this theory, and supposes the the shooting-stars to be small masses of stone, from one to five feet in diameter, which are projected from lunar volcanoes, and circulate about the earth or about the sun when their projectile velocity exceeds a certain limit.

2.—Dr. Olbers, and some other astronomers, have supposed the shooting-stars to be the *dèbris*, or fragments of a large planet, burst into pieces by some internal explosion, of which *Ceres*, *Pallas*, *Juno*, and *Vesta*, are the principal remaining portions. The smaller fragments continue to circulate about the sun in orbits of great eccentricity, and when they approach the region of space through which the earth is moving, they enter the atmosphere with great velocity, and by reason of the resistance and friction are rendered incandescent, and emit a vivid light so long as they remain within it.

3.—It has been suggested by Biot that the extraordinary displays observed in November may be explained by supposing the meteors to have their origin in the zodiacal light. The extent of this lens-shaped nebulosity is not well ascertained; but as the plane of its principal section is not parallel to the ecliptic, if the earth passes through it at one season, it must be remote from it at another. But shooting-stars are observed at all times of the year; and the November meteors differ from those of other seasons in no respect excepting in their greater multitude.

4.—The hypothesis first suggested by Chladni is that which appears to have met with most favour, having been adopted by Arago and other eminent astronomers of the present day to explain the November phenomena. It consists in supposing that, independently of the great planets, there exist in the planetary regions myriads of small bodies which circulate about the sun, generally in groups or zones, and that one of these zones intersects the ecliptic about the place through which the earth passes in November. The principal difficulties attending this theory are the following:—First, that bodies moving in groups in the circumstances supposed must necessarily move in the same direction, and consequently, when they become visible from the earth, would all appear to emanate from one point and move towards the opposite. Now although the observations seem to shew that the predominating direction is from north-east to south-west, yet shooting-stars are observed on the same nights to emanate from all points of the heavens, and to move in all possible directions. Secondly, their average velocity (especially as determined by Wartmann) greatly exceeds that which any body circulating about the sun can have at the distance of the earth. Thirdly, from their appearance and the luminous train which they generally leave behind them, and which often remains visible for several seconds, sometimes for whole minutes, and also from their being situated within the earth's shadow, and at heights far exceeding those at which the atmosphere can be supposed capable of supporting combustion, it is manifest that their light is not reflected from the sun; they must therefore be self-luminous, which is contrary to every analogy of the solar system. Fourthly, if masses of solid matter approached so near the earth as many of the shooting-stars do, some of them would inevitably be attracted to it; but of the thousands of shooting-stars which have been observed, there is no authenticated instance of any one having actually reached the earth. Fifthly, instead of the meteors being attracted to the earth, some of them are observed actually to rise upwards, and to describe orbits which are convex towards the earth; a circumstance of which, on the present hypothesis, it seems difficult to give any rational explanation.

5.—The most recent hypothesis is that of Capocci of Naples, who regards the aurora borealis, shooting-stars, aerolites, and comets, as having all the same origin, and as resulting from the aggregation of cosmical atoms, brought into union by magnetic attraction. He supposes that in the planetary spaces there exist bands or zones of nebulous particles, more or less fine, and endued with magnetic forces, which the earth traverses in its annual revolution; that the smallest and most impalpable of these particles are occasionally precipitated on the magnetic poles of our globe, and form polar auroras; that the particles a degree larger, in which the force of gravitation begins to be manifested, are attracted by the earth, and appear as shooting-stars; that the particles in a more advanced state of concretion give rise in like manner to the phenomena of fire-balls, aerolites, &c.; that the comets, which are known to have very small masses, are nothing else than the largest of the aerolites, or rather *uranolites*, which in course of time collect a sufficient quantity of matter to be visible from the earth. This theory of Capocci differs from Chladni's only by the introduction of magnetic

forces among the particles, and it is obvious that all the objections to the former theory apply with equal force to this. It may be remarked, however, that some physical connexion between the phenomena of shooting-stars and aurora had been already suspected, and the observations adduced by M. Quetelet afford reason to suppose that the latter phenomenon is also periodical.

From the difficulties attending every hypothesis which has hitherto been proposed, it may be inferred how very little real knowledge has yet been obtained respecting the nature of the shooting-stars. It is certain that they appear at great altitudes above the earth, and that they move with prodigious velocity; but every thing else respecting them is involved in profound mystery. From the whole of the facts M. Wartmann thinks that the most rational conclusion we can adopt is, that the meteors probably owe their origin to the disengagement of electricity, or of some analogous matter, which takes place in the celestial regions on every occasion in which the conditions necessary for the production of the phenomena are renewed.

The concluding part of the paper contains an account of the different attempts which have been made to deduce differences of longitude from the observation of shooting-stars. That meteors which appear and are extinguished so suddenly, and which by reason of their great altitude and brilliancy are visible over considerable portions of the earth's surface, would afford excellent natural signals, provided they could be identified with certainty, was an obvious thought; but so long as they were regarded merely as casual phenomena, it could scarcely be hoped that they would be of much use, in this respect, to practical astronomy.

As soon, however, as their periodicity became probable, the observation of the phenomena acquired a new interest. In observing the meteors for this purpose, it is assumed that they appear instantaneously to observers stationed at a distance from each other, and that the meteors seen by different observers so placed are identically the same. These points are not altogether free from uncertainty; but the results of the trials that have been already made may be regarded as favourable, and as shewing that among the other methods of determining astronomical positions, the observation of shooting-stars is not to be disregarded. At the November meeting of this Society, in 1839, an account was given of Professor Schumacher's observations at Altona, on the night of the 10th of August, 1838. On the same night, corresponding observations were made at several observatories in Germany; but those at Breslaw appear to have been the most successful. From twelve coincident observations at Altona and Breslaw, Professor Boguslawski computed the difference of longitude of the two places to be $28^m\ 22^s{\cdot}07$, which differs less than a second from that which had been previously adopted. In Silliman's *American Journal* for October, 1840, an account is given of simultaneous observations made on the 25th of November, 1835, at Philadelphia, and at the College of New Jersey, at Princeton. Seven coincidences were observed, and the mean result gave a longitude differing only $1^s{\cdot}2$ from the mean of other determinations; the whole difference being two minutes. This appears to have been the first actual determinination of a difference of longitude by meteoric observations. In the corresponding observations of Wartmann and Reynier at Geneva

and Planchettes, the differences of longitude deduced from three of the meteors, which were attended with peculiarities so remarkable as to leave no doubt of their identity, were respectively 2^m, $2^m\ 3^s$, $2^m\ 5^s$, whence it would seem that a single observation may be in error to the amount of several seconds of time. In the *Bibliothèque Universelle de Genève* for August 1840, there is given an account of the determination by this method of the difference of longitude between Rome and Naples. The corresponding observations were begun in November 1838, and were continued at intervals under the direction of Father Vico at Rome, and of Capocci and Nobili at Naples. The apparent paths of the meteors were traced on a celestial globe, and the times of appearance and extinction compared with clocks regulated by astronomical observations. The observed times of the extinction of the phenomena presented a very satisfactory agreement, inasmuch as it is stated that there was in general a difference of only a few tenths of a second of time between the partial results for a difference of longitude amounting to $7^m\ 5^s.7$.

The merit of first suggesting the use of shooting-stars and fire-balls as signals for the determination of longitudes is claimed by Dr. Olbers and the German astronomers for Benzenberg, who published a work on the subject in 1802. Mr. Bailey, however, has pointed out a paper published by Dr. Maskelyne twenty years previously, in which that illustrious astronomer calls attention to the subject, and distinctly points out this application of the phenomena. The paper which is printed on a single sheet, is entitled "A Plan for observing the Meteors called Fire-balls, by Nevil Maskelyne, D.D., F.R.S., and Astronomer-royal," and is dated Greenwich, November 6th, 1783. After recounting some observations, from which he infers that such meteors appear more frequently than is commonly imagined, and stating the particulars to be attended to in observing them, he adds:—

"It would be well if those persons who happen to see a meteor would put down the time by their watch when it first appeared, or was at its greatest altitude, or burst, or disappeared, and again when they hear the sound; and as common watches are liable to vary much in a few hours, that they would, as soon after as may be, find the error of their watch by a good regulator; for if the *exact time could be had at different places*, the absolute velocity of the meteor, *the velocity of the sound propagated to us from the higher regions of the atmosphere, and the longitudes of places, might be determined.*"

On the Longitudes of the principal Maritime Points of the Globe.—*By Lieut. Raper, R.N., Sec. R.A.S.*

(Continued from p. 113.)

152. *Acapulco.* Fort St. Diego, (formerly, it appears San Carlos.)

Malasp. 1791. Feb. 19, and Apr. 15, occult. υ Scorp.

calculated by M. Oltmanns, mean	99° 52′ 13″
Jup. Satell.	99 54 5

Espinosa adopts,	93° 43′ or	99° 1′ 30″
Oltmanns, vol. III, p. 405, gives		99 49 11
Malasp. D.L. by Jup. Sat. *San Blas*, City,	5° 20′ 26″	
Reduced to the arsenal,	5 22 24	
D.L. by 2ch 7d.	5 20 32	
Espinosa makes this difference	5° 18′ 30″ arsen.	5° 20′ 24″
by 2 lunars	100° 5′ 37″ by occ. of V *Leo*, in	
Feb. and April, 1795,		100° 16′ 45″
B. Hall, D.L. *San Blas*, 1ch. 18d.	5° 24′ 40″	
Brown, D.L. *Do.*	5 26 26	
Beechey, D.L. *Do.*	5 23 59	
•Bel 1836—8, D.L. *Do.* 13d.	5 23 30	
We shall adopt for this difference	5 23 15, this gives the Fort	99° 5′ 20″

• I cannot, unfortunately, meet with the paper from which Capt. Belcher's measures were copied, and am uncertain of the precise point to which they refer.

153. *Port Guatulco.*

Esp. 90° 16′ or 3° 26′ E. of Acapulco.		
Belch. D.L. *Acapulco.* 3° 47′ 12′		96° 4′ 48″

As this diff. long. 3° 47′, is both given by Capt. Belcher, and employed by him in his absolute positions, we do not hesitate to adopt it.

154. *Mazatlan Bay.*

S.E. part, Brown, D.L. *Fondo San Blas*,	1° 4′ 45″	
San Bl. 1′ 21″ E. of Fondo	1 6 6	106° 21′ 30″
Beech. D.L. *Do.*	1 8 5	106 23 29
Morro de Maz. Beech. D.L. *San Bla.* ars.	1 7 41	106 23 5
Which we shall adopt.		

155. *C. Corrientes.*

Malasp. D.L. *San Blas*, City, 21′ 15″ W. or 19′ 21″ W. of ars.		105° 34′ 45″
B. Hall, D.L. *Do.* 23′ 59′ or ars.	22′ 5″	105 37 29
Brown, D.L. *San Blas*, ars.	23 24	105 38 44
Beechey, D.L. *Do.*	24 30	105 39 28
Place of obs. 47″ E. of ars.	23 43	105 38 40
We have adopted 105° 39′		

156. *Libertad.* Flag Staff.

Bel. D.L. *Taboga*, 9° 44′ 49″		89° 17′ 2″
D.L. *San Blas*, Cust. ho. 13ch.	15° 58′ 36″	89 16 48
We shall adopt	89 16 55	

157. *Port Realejo,* Cardon Id. N.E. point.

Malasp. 1791, S.W. part of the port, I. Sat. Jup. calculated by Oltmanns		87° 6′ 32″
D.L. Same pt. to *Panama*, after several days calm,	7° 38′ 5″	87 9 14
Espinosa adopts, I. p. 151, 80° 47′ or 7° 36′ W. of Panama.		
Kellet, D.L. *Callao*, 10° 3′ 15″ which by our presumed position gives		87° 15′ 8″
Bel. D.L. *Taboga*,	7° 37′ 48″•	87 8 58
—— D.L. *Do.* 11d.	7 41 21	87 12 31
—— D.L. *Libertad*, 3d.	2 7 9	87 9 46
—— D.L. *Acapulco*,	12 43 15 (see note at No. 152.)	87 8 15
We omit the D.L. to *San Blas* in 46 days.		

• There is a doubt on this diff. long. as well as in one or two other points of detail, which we cannot at present explain. This inconvenience must be expected to occur occasionally in compiling *data* from surveys in actual progress.

As Capt. Belcher, in a document at the Hyd. Office, adopts 7° 37′ 48″ for the D. L. from Panama, we shall adopt for the present 87° 9′.

158. *Manzanilla Bay.* South side near the well.

In a MSS. by Bauza in the Hyd. Office, the entrance is placed (from San Blas,) in 103° 23′ 10″; by C. Corrientes, in 104° 22′ 39″; and by Acapulco in 104° 22′ 49″; an agreement which he observes, proves these places to be well determined.

Bel. D.L. *Libertad*, 13ch.	15° 1′ 15″	104° 18′ 10″
D.L. *Realejo*, 38d.	25 3 0	(?)

This determination, seems on the existing data, uncertain.

The Pelorus, or Owerrie River, *in Cooks Strait—New Zeeland.*

On Saturday, January 11th, 1840, at half past six o'clock in the morning, we left the mouth of the 'Owerrie, or 'Hoohery,' as it is called by the natives, and 'Pelorus River,' by the officers of that vessel,—in a whale-boat belonging to Mr. Simmons. We had only three natives for a crew, the master of the fourth, who had been engaged the night before refusing to allow him to go,—and all the natives on the beach, of whom there might have been about forty or fifty present, including women and children, showing the utmost aversion to allow us to go up the river. What their motives for this opposition were, unless they were prompted by those who were interested in representing the place in a more favourable light than it deserved, it is difficult to divine. After considerable remonstrance on our part, the opposition was at last withdrawn, one of the native chiefs giving his consent to allow us to go, and persuading the others to do so also. The morning was dark and cloudy, and having the tide as well as a strong wind in our favor, we used the sails with great effect. The river, as it is called, might be about three or four miles wide at the entrance, and branched off occasionally to the right and left, farther than the eye could reach from the boat on both sides, and the main stem, which if we had not had a pilot, (some of the natives having been up it before,) it would not have been easy to discover, turned nearly at right angles, first to the left, then to the right, and then to the left again, shutting out all view of the sea at a short distance up. At ten o'clock we had run by estimation about twenty miles up the estuary, and excepting the place we left, which had been called by the officers of the Pelorus, Pilot Beach, we did not see as much clear level land as would graze a cow. There was no grass land to be seen; (indeed it is alleged there is no natural grass to the northward of the middle island in New Zeeland;) nor was there an eligible spot to build a house on. Nothing was to be seen but hills many thousand feet high, standing nearly perpendicular; (the pitch of a hayrick conveys the best idea of their steepness,) on both sides of the estuary, and covered with trees and jungle, from the water's edge up to their summits, which terminated in a ridge. To climb them was impracticable, even had there been an object. At

high water the tide flows up to the foot of the hills, and at low water there is a narrow pebbly or rocky beach, bounded by the rise and fall of the tide, and deep water close to the shores. The great depth of water in the middle of the estuary and extending close to the shores, renders it undesirable as a harbour of refuge, for which its locality in Cooks Straits might otherwise be favourable.

The trees, so far as we could judge, were principally the Kykateah, an inferior description of wood. There were few, if any trees with tall stems clear of branches, and we did not consider them, generally, fit for masts, yards, and spars of vessels. There are at irregular distances, a few small coves at the foot of the hills, formed by their undulations; but the steepness of the hills is without exception. Where they are not covered with trees and jungle they are covered with short stunted fern, looking quite brown, and having the appearance of being blighted by the wind,—this is said to indicate poor land. There are several streamlets of fresh water in the ravines on the sides of the hills, but in general this can only be ascertained by landing, being hid from sight by the trees and jungle. At one o'clock, having still kept the tide and a strong wind with us, we were at the head of the navigable inlet, where it is terminated by a mud flat, and where the Pelorus had anchored in four fathoms, finding it impracticable to go farther up. We were now by estimation about forty miles from the mouth of the inlet, and over the whole of this extent the same description of steep hills, covered either with wood and jungle, or stunted fern applies. The head of the navigable inlet terminates on the left, in what may be called a valley, covered with stunted fern, and which valley is said to be opposite to an abandoned native settlement in Cloudy Bay, called Wijro. Supposing the land here to be fit for cultivation, which, from its being covered with stunted fern, we doubt, we consider it, irrespective of that too steep for the purpose.

After pulling over the mud flat, on which the grass was growing amongst the salt water in many places, and on which there were abundance of shags, and red bills, (sea birds,) and wild ducks, some of the latter of which we shot; we entered a creek, being what we considered the mouth of the Pelorus River, though it is clear there was not water to float that vessel to it or in it. After pulling two or three miles up this creek, we met two bush natives in a canoe shooting wild ducks, one of whom came into our boat as pilot. The creek was here from 100 to 200 feet wide, according to the time of tide, and although the land was flat on the left side, it was evident from the trunks of trees washed up on the shores on both sides, that the flat land was at times, after heavy freshes, completely overflowed. It was covered with impenetrable jungle, as we found on landing, beautifully green, and many of the shrubs covered with flowers. This flat being an island, as we afterwards discovered, (having gone up on one side of it and returned on the other,) the probability is that it has been formed by alluvial deposits washed down from the mountains by freshes. A few miles higher up the water was quite fresh. There was abundance of New Zeeland flax growing on the marshy land on the banks of the creek. New Zeeland flax when growing, has the appearance of large and strong sedges, and is said to grow on poor soil. The steepness of

the hills on the right still continued, and on the left the vision was bounded by the flat jungle. Still nothing like plains, or land covered with natural grass were anywhere to be seen.

About eight or ten miles from the mouth of the creek the boat grounded on a shallow, although it was then the very top of high water, which at that distance up, and with the current constantly running down, still affects the height of water by impeding the current at its mouth, and the crew had to get out to lighten the boat and get her over the shallow. Here the current was constantly running down, and the trunks of many trees lying aground on the shallows in the middle of the river, and washed up on its banks on both sides. We attempted to proceed higher up, but found it impracticable owing to the boat taking the ground so frequently, and the strong current running down. The object (of finding land desirable for a location) was also gone, as it was evident that should such land exist higher up, it was not accessible either by land or water owing to the steepness of the hills and the shallowness of the creek. Failing, therefore, in our efforts to proceed higher, we landed about four o'clock in the afternoon on a pebbly flat on the right bank of the creek; the left bank being ten or twelve feet high, as perpendicular as the wall of a house, and a marsh or swamp covered with jungle lying behind the bank. We hauled the boat up three or four times her own length from the edge of the water, and turned her bottom up and took shelter under her, it having come on a heavy rain. We estimated our distance here to be about fifty miles from the mouth of the inlet.

As the evening closed in, and the rain continued, we became apprehensive that should it last during the night, as it was clearly evident from the banks that the water rose occasionally eight or ten feet higher than where we then were, we should be flooded before the morning. We therefore made everything ready to righten the boat, and put everything into her, intending to anchor her where she was, and remain in her exposed to the rain, as it would have been quite impracticable to descend the river over the shallows and amongst the snags and trunks of trees lying aground on them in the night. Fortunately the rain ceased about nine o'clock, and these measures were rendered unnecessary; notwithstanding the rain having ceased, the river rose in the course of the night to within half the length of the boat, so that at daybreak it was time to be on the move. We proceeded on foot as far as the banks of the creek would allow us, to view the scene higher up the creek, and found it to be confined on both sides by nearly perpendicular hills. The hills being so high, and the valley formed between them so narrow, it was clear that it must be late in the forenoon before the sun's rays could penetrate it, and there was no prospect of any kind of crop, requiring much sunshine to ripen, ripening in it. As already mentioned, there was plenty of New Zeeland flax, the *Phormium tenax*, growing on the banks, but no land covered with natural grass, or plains fit for cultivation on an extended scale was anywhere to be seen.

The rapidity of the current down having greatly increased owing to the rain, any attempt to proceed higher up in the boat was quite impracticable; having, therefore, no object to remain where we were, and being in no desirable quarters should the rain again come on, we

got a hurried breakfast, and on Sunday morning began to descend the creek. Although the water, owing to the rain, had risen at least two perpendicular feet, the current down had become so rapid, that it was only by the most skilful pilotage of the native we had taken in in going up, and the most dexterous and able handling of the boat by Simmons and the crew, who seemed to be quite aware that all our lives were at stake, (the boat often having to pull where there was scarce room for the oars between the trunks of trees lying aground on the shallows right across the rapid stream, for had she touched any of the logs she would have upset in an instant,) we were at last, by the Divine Mercy, carried safely over the danger.

After we had passed the danger, our pilot informed us that before the pah or native settlement higher up had been abandoned, a number of canoes had been upset and natives drowned on these shallows every year; a statement to which we gave full credence, and resolved never again to expose ourselves voluntarily to such danger. In short, it appeared to us to be nothing short of madness to think of residing in such a place, which seemed to our comprehension to be totally unfit for the residence of civilized man. In returning, we landed our pilot where we had embarked him, and learned afterwards that he and his companion were the only natives who lived at the head of the Owerrie, and they were in exile, for fear of some other tribes with which they were at war, they being the relics of their own tribe. As we descended we took another survey of the limited landscape of the Owerrie, confined on both sides by nearly perpendicular hills, to correct our first unfavourable impressions of it, but which instead of removing, only confirmed them.

It being low water when we crossed the mud flat, formed at the head of the inlet and mouth of the creek, the boat repeatedly grounded, and the men had to get out to lighten her and get her over. There were some poles placed on the flat to shew the deepest water, said to have been put there a few years ago by Captain Stein, of the William the Fourth, in which vessel he loaded a cargo of timber. The wind being against us, so that we could make no use of the sails, we landed for a couple of hours in the middle of the day, and got some dinner consisting of the wild ducks we shot on the previous, and potatoes. After which, we again embarked and continued rowing till the evening, when we pulled into a deep cove forming one of the branches of the estuary; and after landing and getting some victuals, at cooking which the natives are very expert, we made a tent of the boat's sails, and although lying on the hard pebbly beach, we slept far more comfortably than we did the night before. Our tent was formed partly of branches at the foot of the hill, and in the morning at high water the lower edge of it was in the water.

The boat had been moored off the night before, and though it was then about five in the morning and very cold, one of the natives made no scruple of swimming off to her and bringing her to the beach. New Zeelanders indeed, make no scruple of going into the water on occasions when it would be considered a punishment by Europeans. The wind still continuing to blow strong up the estuary, it was about ten o'clock in the forenoon of Monday the 13th of January, before we got to Pilot.

Beach, from which we had set out, and we returned to it thankful to the Almighty for the preservation of our lives, and with the worst opinion of the Owerrie, (being an inlet of the sea or an estuary, miscalled a river,) for any useful or profitable purpose whatever.

Pilot Beach which we set out from and returned to, is a small cove within a quarter of a mile of the mouth of the inlet on the left hand side in entering it, on which there is about an acre or two of clear land, and it is beyond all comparison the best place we saw in the course of our travels. On this spot, being the only one we say, in the whole distance adapted for the purpose, Captain Stein, above-mentioned, landed a few young cattle some years ago, which were said so have greatly increased in number. A house is now however building on the ground formerly occupied by them, and it is to be presumed they do not approve of their new companions, for they have taken to the hills, although it is a mystery not yet solved how they contrive to climb them. It was proposed to shoot one of them for Christmas and New Year's days dinners, and whether they were aware of the kind intention of their friends or not is uncertain, but it was found utterly impracticable even to get sight of them, even by stealthy and active New Zeelanders to get near them, nor unless the spectator was in a boat, and might see them on the side or ridge of a hill. Whoever may be the proprietor of them, he will do no injury to his fortune, by giving them to whoever can catch or shoot them.

We afterwards learnt from Colonel Wakefield, whom we met at Port Hardy, in D'Urville's island, that he had been twenty miles higher up the Owerrie than we were, having gone up above the falls in a canoe which was carried over the shallows, and that he entertained as unfavourable an opinion of it as we did. He told us there had formerly been a pah higher up than we had been, but in consequence of its being flooded in the night by a fresh, and sixty of the natives drowned, they had abandoned it. He said he considered the Owerrie utterly unfit for the residence of settlers, an opinion in which we cordially agreed.

On the afternoon of Wednesday, the 15th of January, Captain Rhodes of the barque Eleanor, of Sydney, accompanied by Mr. Espie, of Poverty Bay, having been two days up the Owerrie in a whale boat, examining it with a view to purchase it of the natives, returned and stopped the night at Pilot Beach. They both had formed the same opinion of it as we did, that it was not worth any person's accepting in a present, if coupled with the condition of residence. In short, the natives having abandoned it, seems to be conclusive proof of its being of no value, either to civilized man or savages.

Amongst the petty miseries of a temporary residence on the beach, before our excursion up the river, was the heat of the sun in the middle of the day, confined as the place was at the foot of steep hills, and owing to the absence of all circulation of air, to go under a tent only made matters worse. Add to this, the noxious visits of a large blue fly, destroying by its deposits, the blankets and every woollen thing, and being bit to death by sand flies during the day, and by bugs, lice, and fleas, the latter of which were got in swarms from the natives, whom it was impossible to keep out of the tents by night, and some idea may be formed of the comforts of bush life in New Zeeland; although it was

oppressively hot in the middle of the day, a great coat was worn with comfort in the morning and evening. The importunity of the natives in begging everything they saw, was also troublesome, but it must be added, they were strictly honest, as nothing, however trifling, was ever missed or stolen.

The writer of the above article was in various parts of Cook's Straits during the months of December and January last, and he considers the climate to be unfavourable for a settlement, as it was either blowing a gale of wind or raining in torrents. He was on board the Aurora, the first ship with emigrants for the New Zeeland Land Company, before and after her arrival in Port Nicholson. The emigrants were on arrival in good health and spirits, but did not approve of the mountainous look of the land. The first of them were landed on the beach on the day he left the port. No huts, tents or shelter of any kind were to be found, and their new quarters were inhospitable enough. It was however reported, that they were to be allowed to sleep on board the ship for a few nights, a measure which would be indispensably necessary, as it came on a very heavy rain that night. They were landed on what had the appearance of, and proved to be, a swamp, covered with jungle, and they were sent out so soon after Colonel Wakefield and the pioneering party that the limits of the township of Britannia, the name of the proposed town had not been fixed, nor its site scarcely determined on before their arrival. It appears by the papers, they have since been obliged to abandon this locality, and choose another for the township. Many of the emigrants at that time were so disappointed in expectations, that they wished they had had the means of getting to New South Wales. The land at Port Nicholson is of a very similar description to that of the Pelorus River, and forbids all communication with the interior of the country, be it of what description it may, by impassable mountains. Nearly all supplies for the township of Britannia must be brought by sea. Nor is Port Nicholson a good harbour, it is too large, and a reef of rocks partly above and partly under water, runs off the head, within which the township is now to be formed. It blew so hard on the day of arrival off the harbour, as to render it impracticable to work in.

Instead of New Zeeland becoming the granary of New South Wales, the writer is of opinion it will, with its increased population, have quite enough to do to be a granary for itself for some years to come. He does not apprehend that rearing stock, or the cultivation of the land can be carried on to a great extent. The want of natural grass, and frequent heavy rains are serious objections to rearing of stock, and the general hilly nature of the land, and want of roads, are serious obstacles to the cultivation of the land. He was in eight different ports in New Zeeland, including the Bay of Islands, and standing on Batmans Hill, or the high land to the east or west of Melbourne, he sees more level land within range of his vision, than he saw in the eight ports of New Zeeland, although all the level land in them had been put together. The climate of the Bay of Islands is very superior to that of Cooks Straits, but there also, are frequent heavy and long continued rains.

Nautical Rambles.—*The Bermudas.*—*No.* VI.

(Concluded from page 169.)

The Bermudas are certainly a singular group, whether we consider them with reference to the ocean in which they are placed, or compare them with others therein. The Azores, the Madeiras, the Canaries, and the Cape Verdes, to the eastward, are, very different in their physical features, their geological structure, and in their hydrography. From Newfoundland and its marginal isles, Sable island and the islands of the St. Lawrence, they are more remote in their resemblance in every point of view. To the Bahamas they seem to be nearer allied; but, there are still some shades of difference, principally with reference to the vegetable productions; and although they lie 540 miles from the northern tropic their climate differs little from that of the West Indies. There is nothing remarkable in this, the diminution of heat being extremely gradual as we advance *on the ocean* from the tropic northward; and the *norths* which blow in the Caribbean sea, cause a fall of the temperature there equal, perhaps, or nearly so, to the winter standard of Bermuda. South and south-west winds I have known to prevail the greater part of the autumn and winter at the latter, when northerly gales occur in the former. Neither are we to feel surprise at the dissimilarity of the general or annual temperature which exists between these islands and the opposite continental shore of America, from which they are distant about 630 miles. The intervention of the heated waters of the Florida stream probably assists in mitigating the rigour of the northerly and north-western breezes in their passage across the ocean during the seasons of cold.

Altogether the Bermudas, though of small extent, are, not only interesting to the stranger, but, unquestionably, of great importance to the mother country. Their natural security from evasion is a feature that has, independent of their particular situation, claimed the especial attention of the authorities at home; and which being well known to all nations, may be deemed a protection equal to that which formidable forts would afford to a more accessible place, against the assaults of an enterprising foe.

I have spoken often, and rather freely perhaps, of the dearth of food in these islands, arising principally from a partiality among the landed proprietors for the growth of cedars.* Wood, it is true, is requisite for fuel, there being no coal; but, why not cultivate *all* the best portions of the land, and leave the worst parts only for the darling tree. I have understood that all the large timber has long since been consumed in the construction of ships; the returns, therefore, must be unprofitably slow to the owners of the soil, who, there is scarcely a doubt, would reap more benefit, and bestow comfort on their fellow-men by growing vegetables and fruit (oranges), and in raising stock. What the price of cedar may be at the present time I do not know; but, thirty

* On the north front of St. George isle, aback of the barrack, and near St. Catherine head, we observed very tall trees in groves; we do not know exactly of what species they are, but believe them to be the Plane—*P. Occidentalis.*

years ago the largest tree in the islands was not worth more than 22*l.* or 23*l.* currency; and it was said that there was not another equal to it throughout the whole cluster.

If the islanders are so wedded to this particular sort of wood in the construction of their vessels, they may procure it on the continent, in Virginia, Carolina, Georgia, and Flinda; and a similar wood, the bastard cedar, with the same aromatic scent, the tree of which, is of very large dimensions, and grows in Jamaica and the other islands.

At the island of Abaco, Bahamas, and probably in some of the other islands, there is an excellent species of fir-tree fit for ship-building, and probably might be imported into the Bermudas at a cheap rate, as the duties of the home market are so high as to be prohibitory,—the run would be a short one, only three or four days. The wood is resinous and durable, and I think it requires no argument to insist upon the truth that timber of a warm climate is the best adapted to the construction of vessels to be employed in such climate.* It is surprising what the industry of man will accomplish with land which in a state of nature is sterile, and apparently worthless. I have seen many instances of this; but I need only to allude to Ascension to be convinced that where there is any soil by artificial means, it may be made productive. I can perceive no formidable impediments to this being effected in the Bermudas, if the land-owners there were so disposed, and none that may not be obviated in the rearing of stock. It is true, that from the position of the islands they are subject occasionally to the devastating effects of the progressive hurricane; but almost all countries, whether inter or extra tropical are at all times exposed to some particular vicissitudes of weather, or other continued drought, excessive inundations, severe and protracted cold, &c.

The land of the islands is no where sufficiently high to afford shelter to one spot more than another, under the infliction of a circular storm; on account of the veering of the wind there is no remedy for this, and unless the crops can be so regulated as to be gathered in before the season of these storms arrive, the vegetable productions must suffer: precautions, however, may be taken to prevent destruction among the stock by erecting suitable cover for them in cases of need. At present the greatest misfortunes to be apprehended from such terrible visitations is the destruction of the boats of the fishers, and the suspension of their ordinary and indispenable occupation. We believe few or no lives are lost from the effects of these storms, as the dwellings are substantially formed of stone, and therefore afford safe retreats and shelter without apprehension of their falling or being blown away, as is the case with the wooden structures of the West India islands; and the boats generally keeping within the barrier reefs, have no difficulty in retreating upon the signs of approaching bad weather. That the boats are destroyed during the transit of hurricanes, can only be regarded as occurring from a want of that due precaution which it is imperative on the inhabitants themselves to have exercised. Were suitable boat-houses erected this would not happen, and as every individual more or less,

* Would it not be worth while for the government of this country to cast an eye towards Abaco, and its fir-trees. The schooners and small steamers might perhaps be profitably built there by artificers sent out.

is dependant on the fisher's avocation for his daily food, if he neglects to provide the means for the security of the vessels employed for that purpose, he deserves the consequences. An appeal to the sympathies of the public can never be made with good effect, where the distressed party are by their own negligence, indolence, or indifference, suffering privation. The poor instruments who minister by their labours to the general good, are not to be blamed, and must obtain the pity of every feeling heart, but that will not remedy the evil;—to remedy that effectually, the richer natives should subscribe (and it would be to their own advantage as well as credit to do so,) and have proper boat-houses built along the line of coasts above the reach of the surf. It is not improbable but that the government would afford its aid in some way or other, to effect so humane and desirable an object.

I do not know whether the islands are often visited by the progressive hurricanes, but presume that a register has been kept of their times of occurrence; I should be much gratified to see such a list, (if there be one,) recorded in the pages of the *Nautical Magazine*. In the absence of such information, I am inclined to believe that the occurrence of these storms is not very frequent at the islands; the meteors in their advance to the northward, passing generally to the westward of their meridian, and, perhaps, some few to the eastward. The loss of property chiefly, it is said, among the least wealthy, which took place during the hurricane of last year, amounted to the large sum of £80,000!

In speaking of the habitual indolence of the natives, I would not be understood as using the term as one of reproach, for they are no more to be charged with the characteristic as a fault, than the Frenchman would be for his gaiety or loquacity, and the Hollander for his phlegm, or any other people for a peculiar mode of life, or habits induced by a climatal influence, &c. The whites are the descendents of one of the most energetic races of men in the world, and there is not a doubt but that the elements of enterprise and vigour are a part of their nature, dormant because not exercised. Indeed, the fact is not to be disguised, that those who have little to do in a warm climate, will naturally become prone to a listlessness of body, and a corresponding inertness of mind, and which, unless aroused, will grow into a habit. I should be sorry to follow the example of the poet, who perhaps, to heighten the effect of the compliment, he seemed desirous of paying to the lasses of Bermuda, treated their papas to a very sorry one,—certainly unmerited, and coming with a very bad grace from him who had "blarnied" about their hospitality. In truth, I opine, that the most humble of the Mudians is at least, (to speak commercially,) "100 per cent" higher in the scale of civilization, and genuine christianity, than the "Bog-trotters or Mullingars," of that "gem of the first-water," which takes off the rough edge of the Atlantic billows from Britain.

The natives of the Bermudas are generally a quiet, inoffensive, and amiable race of people; most of them appear to be of a serious and religious turn of mind, and their morality we have never heard questioned. From the observations which I was enabled to make, I should say that the blacks are superior to their sable brethren of the

West Indies, and I remarked that their speech had considerably less of the Creolian patois, than that of the negroes of the Carribbean sea islands. I do not recollect to have seen a Mulatto, or any other shade of those which are termed coloured people; but I was shown a little Albino girl, (of a dead white colour,) whose parents were black.

Often, and often have I wandered in imagination over the scenes which I have so imperfectly attempted to describe, with almost as lively a degree of pleasure as I experienced in the reality.—So attractive with all their sameness are the little "fairy isles,"—sequestered in the midst of a pathless ocean,—delightful in climate, and beautifully verdant to behold; in fact they are a little paradise of the earth, to be envied by those who are the lovers of peace. The possessors I honour for their unassuming and moral character, and if good wishes can avail them aught, they have mine for their prosperity and undiminished happiness.

On the navigation around the islands we need not dwell long, it has been described in works of reference. In winter the winds are stormy, in the other seasons, calms and whirlwinds, lightning and thunder, squalls from all points at intervals, with very heavy showers of rain, and water-spouts are prevalent; but there is also much fine weather. The currents are proverbial for their fickleness, yet they are often found setting very strongly to the west and to the south-west.

Of dangers in the vicinity, there are none well established beyond the barrier reefs; one or two shoals lie to the south-westward, but with sufficient depth of water over them, I believe, for ships to pass without risk of striking; they should however, be sounded over occasionally, as the coral zoophite is at work upon them, and therefore their vertical increase may be expected.

The reported *Vigia* called the "False Bermuda," 300 miles easterly of the isles, if it ever existed, was probably a volcanic production, the rocks having since submerged. Many years ago we heard it confidently asserted that a Jamaica ship had been lost upon them. There seems to be a great deal of scepticism in these matters among many seamen, but although I am not unwilling to believe that dangers are sometimes reported which do not exist, yet I am satisfied that because a reported rock or shoal, is no longer to be found, such cannot be a conclusive reason that it never had existence. In the case we are speaking of, it is possible for a vessel navigated alone by account, to strike on some of the rocks at the extreme of the barrier reefs of Bermuda, out of sight of the land, and the master to report that he had struck on a danger two or three hundred miles from those islands; this is more likely to occur in a voyage to America than in one homeward.

Both to the northward and to the southward of these islands, sand banks above water have been reported, but no second persons have ever seen them,—those who could fabricate such accounts must be either fools, drunkards, or madmen.

In the latest returns published,* we find the following particulars. The islands collectively contain about 14,000 acres, of which only 462 are cultivated, so that there are 13,338 acres covered with trees, in grass and unproductive.

* Martin's Colonies.

In 1832, there were 4,181 white inhabitants, and 4,895 blacks,—total population 9,081. Of horned cattle there were 1,528 head,—sheep 228, and goats 199.

In 1826, the births were 299,—the deaths 219. Increase in the year 80.

Arrow-root made 18,174 lbs. Colonial revenue 10,000*l. per annum. Max.* heat 84° Fah., in June, *min.* 59° in February; winds north-west 4, north-east 3, south-east 2, S.S.E 1, east 1, south-west 1,—but this is for one year only. A register for at least twenty-five years is required, and I hope one has been kept at the dock-yard.

There are 1,500 convicts employed at the dockyard.

EXCURSION TO THE LAKE OF NICARAGUA UP THE RIVER SAN JUAN.—*By Mr. George Lawrance, Assistant-Surveyor of H.M.S. Thunder, Com. E. Barnett, in March,* 1840.

(Continued from p. 188.)

Tuesday 17th.—At daylight we roused the Ramas, who were looking very stupid after their debauch, launched the canoe, and paddled to the Isletas; a group of islands lying off Grenada, which appear to have been thrown up by some violent eruption, as indicated by the immense detached blocks, rent and huddled together in the wildest disorder. But whatever may have been their origin they now present a most beautiful picturesque appearance, ornamented with many graceful trees growing in the interstices of the rocks, and overrun in all directions with luxuriant vegetation.

The high hill of Grenada towering over these islelets, by which we were land-locked on every side, produced a striking effect. We landed to breakfast on one of the most inviting of them, where we saw, as on most of the others, a solitary resident. We then threaded our way through this labyrinth of islands, and steered for the south end of Zapatero with a moderate, but short unpleasant sea; and sounded as we went, in six and nine fathoms.

At noon we stopped, being prevented proceeding to Nicaragua by the wind, which was blowing fresh, and dead against us; but at five P.M. the wind having moderated, we again embarked, and steered close under the western shore of Zapatero, where it is high and thickly wooded. This island is not inhabited, but in the season it is visited by the people of Grenada for the convenience of fishing. Its western hill is bare and barren having recently been cleared away by an accidental fire; its geological aspect resembles that of the Isletas.

At sunset we passed between this island, which is distant from the main about a mile, and entirely composed of stratified rock, dipping at an inclination of 15° to 20° from the horizon, thickly overgrown, and at present visited by a few fishermen. A plain seems to extend across the isthmus from the south side of the Grenada mountains as far as the eye can reach, and the island of Zapatero, forms with the main, an excellent harbour.

Wednesday 18th.—At five A.M. we launched, and steered along shore

for the road of Nicaragua, against a short chopping sea, which made us very wet and uncomfortable. I was rather surprised to find in a lake where the prevailing winds at north and north-east are seldom very strong, how soon its surface becomes ruffled; such however we experienced to a degree that not only incommoded us, but often threatened our little vessel with no small danger: the Padrone told us in crossing from Muerta to Grenada, that in all his trips in large bongos he had never before steered that course, but always kept close under the lee of the north shore; we for the sake of expedition preferred the former, as being the most direct.

The coast eastward of the Zapatero channel is low, with a straight line of beach, where the average height of the trees may be about seventy feet, and the soil appears to be most prolific. The soundings since we left Tahaja were from five to six fathoms.

At 9 A.M. we passed Palmata Point, at the distance of about a quarter of a mile, and in the course of half an hour more landed on Nicaragua beach, and sent the Padrone to the town for horses, in order that we might lose no time in waiting upon the authorities.

This beach is composed of disintegrated quartz and argillaceous earth, straight, and lined with trees of fifty and sixty feet high, completely intercepting the view of the town, which is only about three and a half or four miles off. Here, as at Grenada, we saw lots of "lavanderas" washing clothes.

By the time we had obtained our sights, Pedro, the Padrone, had returned with a couple of horses, on which Mr. Scott and I mounted forthwith, to pay our respects to the Gefé Politico, not forgetting to take with us our letters of introduction to Senors Ruis and Mongalo. After an hour's ride up a very gradual ascent where the road is tolerably good, and hedged in on both sides by a penguin (Bromelia) fence. We reached the town, and first called at the house of the former, but finding him absent on an excursion to the Pacific, we waited upon the other, who received us with the greatest politeness, and at our request took us to the chief official, whom we met not in his own house, but in a neighbouring shop, dressed in anything but the garb of so high a functionary.

Through Senor Mongalo, I stated to him the object of our visit, and requested permission to cross over to the Pacific, at which he appeared to be highly flattered, and without a moment's hesitation, replied, that we were at liberty to go where we pleased, and make what observations we thought proper. Delighted with this courteous reception we took our leave, and after requesting our worthy interpreter to furnish us with horses and a guide, all ready equipped by 10 o'clock next morning, we returned to our lodging on the beach. Before we retired to rest, we got the altitude of three stars north of the zenith, the same we observed at Grenada, which gave the difference of latitude 28′ 26″ south.

Thursday 19th.—At daylight the weather was fine, and wind E.S.E. when I observed for the true bearing of Ometape (the result being N. 62° 17′ E.). At 9h. 30m. A.M. our mules arrived, not velocipedes, but we afterwards found them very sure-footed animals: the saddles of uncouth shape and rude material, but with the aid of a sheep's skin

thrown over all they were soft enough, and rather too comfortably warm! Our guide presented a grotesque figure, rigged out in a party-coloured jacket of the gayest colours, great jack-boots with spurs, and stirrups of most whimsical make, and unreasonable dimensions.

After completing all our preparations, we took our departure from the beach, slowly wending our way towards the town of Nicaragua, on the road to which, I observe there are several houses constituting a scattered village, where there is a church named St. George. The town of Nicaragua stands upon an elevation of about one hundred feet above the level of the lake; its houses, similar to those of Grenada, are all of one story, those formerly belonging to the old Spaniards are substantially built of stone with capacious door-ways, and gloomy grated windows; the more modern ones of lighter material and construction, in fact, many of them are little better than mud huts. I saw but two churches, the largest of which is situated in the square opposite the guard-house, but neither have any pretentions to grandeur. The town of Nicaragua is said to contain 6,000 souls, all of whom are a mixed race of Spaniards and Indians to the utter exclusion of whites. For the first three miles the road is tolerably good, and the land partially cleared, with here and there a house to enliven the scene, but all beyond is a wilderness; the soil appeared parched and indicated a long absence of rain.

At noon we came to a small stream. Here we discovered that our only weapon of defence a pistol, which Mr. Scott had lashed to the pummel of his saddle was missing, but as time to us was of more importance than powder and shot, we left it behind, trusting that it might cast up on our way back.

Proceeding at a slow and steady pace, we rode through a forest of lofty trees thickly interwoven with gigantic creepers and spidendral plants, which appeared to be almost impenetrable on both sides of the road. The silence of the woods was only disturbed by the occasional discordant scream of a maccaw or parrot. At length we emerged from this agreeable "contiguity of shade," and came to a plain covered with short grass, and studded with clumps of calabash trees, (the *crescentia*) where we surprised a few deer. Here at times we had a good view of the peaks of Ometape and Madeira, towering over the trees and producing a very fine effect. The country through which we rode was one continued Savanna, and only wants a decent road to make it very agreeable, but owing to the deep fissures, caused by a long continuance of dry weather under a powerful sun, we found some difficulty to get along without stumbling.

The ground gaping for moisture reminded us that we were thirsty, and our sapient guide, no doubt sympathising with our feelings readily understood us, when we directed him to take us to the nearest spring, which after going two miles out of our way, we had the mortification to find was completely dried up, and we had to retrace our steps. His stupidity in taking us thus far became too apparent, when we found that we were within the same distance of a farm-house or cattle pen, called Quocoti, where we shortly afterwards arrived, and drank our fill of delicious milk and water.

Resuming our course which now lay over a rugged plain, where the

path could hardly be distinguished, our hopeful guide became so perplexed, that after "backing and filling" a few times, he candidly confessed that he was at a *ne plus ultra*, and pleaded as an excuse that he had not travelled across the isthmus "*por muchos anos.*" With the assistance of Scott's Spanish we explained to him that it would be prudent to return to the farm-house, in which opinion he appeared to acquiesce, but had some secret misgivings whether he should be able to find it. In this dilemma we consulted the compass, and after a deal of traverse sailing, at length managed to hit upon a path which led to the house, where we were greeted by the inmates with a hearty laugh, our guide looking very sheepish and ashamed at being the cause of it.

The day being now far advanced, and our journey not more than half complete, the end of which I was anxious to accomplish before dark, we thought it advisable, instead of blundering along after this stupid fellow, who had already served us so many tricks, to engage another guide. The only one we could find at this place was a fine little boy, who volunteered to conduct us to Port San Juan, if his father, who seemed reluctant, would allow him to go. After some persuasion, expressed as well as our imperfect knowledge of the language would allow, we gained the paternal consent, on condition that we brought him back the following day, and for his services all he demanded was six reals, equal to three shillings.

Led on by our Muchacho, we again pursued the uneven tenor of our way, at a brisk pace, our quondam guide bringing up the rear at such a distance that we were often obliged to "heave to" for him, much to our annoyance, but to the great amusement of the young one. In the course of half an hour's ride the road began to be more rugged, leading over and between very steep hills, so much so, that had our mules not been very sure-footed animals, and used to such travelling, our necks would certainly have been endangered in crossing the mountain passes, where the road was almost blocked up by fallen trees, rocks, &c.

These mountains are all thickly wooded, but not much overgrown with bush. From the summit of one more clear than the rest, whose height I roughly estimated at 800 feet, we had a delightful view of the Pacific to the westward, distant in a direct line about three miles, and the peaks of Ometape and Madeira rising out of the lake to the eastward.

The range of hills to the southward are, I should think, two or three hundred feet higher than this. Here we saw monkeys in plenty of the Coaîta or Ateles species, exhibiting feats of agility for surpassing anything I ever saw performed by those of the old world; their long, powerful, prehensile tail enabling them to make the most astonishing leaps from branch to branch, and to hang suspended while they chattered to us with almost human expression. A few wild cattle and deer occasionally came across our path, the former looking defiance, the latter no sooner seen than off.

Having rested our mules, we descended by an abrupt and rugged path, and then threaded our way through the vale of Volga, along the beds of dried-up mountain torrents, one of which our little guide called the Rio Volga.

At 6h. 15m. we found ourselves all at once on the shores of the

Pacific, in a little cove called El Cacola, where we found nothing in the shape of human habitation, but fell in with a gang of fishermen and a few women, from whom we got a drink of water, but for want of sufficient knowledge of their language, gained no information. The beach in this cove is entirely composed of pulverised sand-stone *without a trace of iron.*

Here we would gladly have remained for the night, ourselves and mules were so knocked up, but the youngster having found out his mistake, told us that we had still another league to travel; accordingly we again mounted, and after another hour's ride through a gloomy wood, at last reached Port San Juan, the ultima thule of our journey, after having been more than nine hours on horseback. The people of Nicaragua say the distance is only seven leagues, but taking into account all our deviations, we may fairly say that we had travelled three miles over as bad a road as ever was trodden by man or beast.

Having been informed that people occasionally resorted to this place for change of air and sea bathing, we expected to have found a few huts near the beach, but we saw nothing of the kind, and the only human being we met with was an old fisherman, who gave us a scanty supply of water; on the way however from El Cacola, we saw the glimmering of lights at a distance, and may, therefore, infer that there is a village in the vicinity.

In the course of the night we were enabled to get three excellent single sights on each side of the meridian, the mean of which we subsequently found gave a very satisfactory result. We also obtained the latitude by difference of altitude, making this place 11° 46′ south of Nicaragua, but all our endeavours to obtain equal altitudes were frustrated by the impossibility to set the instrument for want of a good light.

Friday, 20th, 4 A.M.—Having now obtained the ultimate object of our expedition, we sent the guides for the mules, and in the mean time we employed ourselves reconnoitering this bay, which I at once recognized as the scene of Mr. Bailey's operations, he having shewn me his plan at Grenada; it certainly does not merit the name of port, being little more than a large cove, distinguishable from that of El Cacola, by its having near the centre of the beach a swamp which communicates with the sea, and when the tide ebbs, all has the appearance of a running stream of fresh water. The rise and fall of tide is, I think Mr. Bailey told me about twelve feet.

THE SYMPIESOMETER.

Audax at sea, Feb., 1841.

SIR.—Having frequently heard the remark that the Sympiesometer was too delicate, often falling without any apparent cause, I was induced on a late passage from the Cape, to keep a register every three hours, of the respective height of the barometer with it. It was not long before I discovered that the sympiesometer fell more on an increase of temperature up to 80° than the scale corrected, and from 80 to 90 rose;—thus for example, at a temperature of 50° the sympiesometer was + 40 hundredths, at 70° + 20 at 80° or 82° equal, and at 90° it was —20. This will easily be proved by noting the difference between a barometer and sympiesometer, and then placing a candle sufficiently

near the sympiesometer, to rise the temperature ten or twenty degrees. It will be then seen that another correction beside the scale, is requisite to reduce it to a mean height, and though barometers are not all marked alike, and the following table may not agree with all in placing the standard at 82°, still it will reduce it to a mean height.

I have applied this correction two voyages since, and I find it answers extremely well, and as it is the mean result of more than 500 observations, I now never look at my sympiesometer without making allowance for the difference of temperature between the observations. When this is done, I believe it to be an invaluable instrument, and superior to the barometer at sea,—inasmuch as all pumping is avoided, and it may be observed with the greatest accuracy. I annex an example of my present method of registering, and an instance of lighting a fire, the increase of temperature causing the line of sympiesometer to fall more than the barometer. Hoping these remarks may be of some service, and looking for some fresh information on the subject,

I am, &c., AUDAX.

[The table alluded to by our correspondent is, we believe, supplied with Adie's instruments, and the example promised with it, (though not received) is perhaps not of so much consequence, as those who use Adie's instrument, of course adopt his table. We have not heard that a similar correction is necessary in the use of Cummings's instrument, alluded to in our February number, but conclude that it must be.—ED.]

ATLANTIC STEAM NAVIGATION.

WE transfer the following letter on Atlantic Steam Navigation, with its accompanying table from the Mechanics' Magazine to our own pages, as it affords useful data for determining the velocities of the great steamers, in making their passages between this country and the United States.

The result from the combined passages, is to New York sixteen days, and home fourteen days twenty-two hours; the mean velocities being outwards eight knots, and homewards 8·6 knots per hour. But if we select the Great Western's passages, we have the mean passage out fifteen days fourteen hours, and home thirteen days fifteen hours; the former average rate being eight knots, and the latter 9·6 knots per hour.

The great iron steamer alluded to in the latter part of the letter, will measure 3,600 tons. She is now plated to her height from forward to within a quarter of her length abaft. She presents a fine hold, with a general form assimilating to the French ships of Mr. Romne. Under canvas she would go like a witch; but whether the screw will produce the same effect remains to be seen. Very sanguine are the expectations from it. She will now have four engines of 230 horse-power each, instead of two of 500 horse-power, as first intended,—and is expected to be afloat about April, 1842.

SIR.—The accompanying is a Table I have prepared, of the length of all the outward and homeward voyages of the New York steam-ships during the year 1840. A new steam-ship, the President, was in August last added to the New York line, but her performances have been anything but satisfactory; and after having made two trips out and home, she was found so miserably deficient in power as to compel her owners

to withdraw her altogether for the present. Her want of speed, it seems, is not caused by any defect in the construction of her engines, which do the greatest credit to those eminent engineers, Messrs. Fawcett and Co., of Liverpool, but in their power being so utterly disproportionate to her tonnage; so that when contending against a heavy head wind and sea, as was the case in November last, they are found next to useless. The British Queen's performances, until about the close of the year, were not so inferior to the Great Western's as in 1839. But a comparison of the voyages of these two vessels, made about the same time, and in the same weather, places the performance of the Great Western in a most striking point of view. On the occasions just alluded to, the British Queen left on her outward voyage on the 2nd of November, and arrived at New York on the 22nd, after a twenty-days' passage, with very bad weather during the whole time. The Great Western left on the 7th of the same month, and arrived on the 24th, after a sixteen and three-quarters days' passage; encountered the same sort of weather as the Queen. and yet beat her by four days nearly. On the homeward passages, the British Queen left New York on the 1st of December, and reached Portsmouth on the 22nd, having been just twenty-one days making the passage, and experienced very rough weather. The Great Western left on the 9th, and arrived at Bristol on the 24th, two days only after the Queen, having been, notwithstanding the very tempestuous weather, but fourteen days ten hours at sea, thus beating her by seven days! In this same voyage home the Great Western had continuous easterly gales and head winds for ten days out of the fourteen. The quickest voyage to New York appears to have been that of the British Queen, in rather less than fourteen days. The quickest home voyage was made in July, by the Great Western, in thirteen days eight hours. The longest outward appears to be that of the British Queen, in twenty days', and the same homeward by ditto in twenty-one days. The Royal Mail steam-ships—the first of which, the Britannia, commenced running between Liverpool, Halifax, and Boston in July last,—have made their outward and homeward passages with admirable quickness and regularity. There are four splendid steamers on this line,—viz. the Arcadia, Britannia, Caledonia, and Columbia, each of 1,200 tons, with engines of 440 horse power. These vessels were all built and fitted by the Clyde ship builders and engineers, and I must say do great credit to them. The Arcadia has made two passages out and home, between Liverpool and Halifax. The lengths of the outward have been ten and ten and a half days, and those of the homeward ten and eleven days. The Britannia has made six voyages in all; the three outward occupying respectively thirteen, ten and a half, and twelve and three-quarters days, and the homeward ten, eleven, and thirteen and a half days. The Caledonia, from not coming on the station till September, has made but three voyages; two outward, occupying ten and a half and twelve days, and one homeward eleven. The Columbia* has not yet made a single trip, but will leave on her first outward one in a few days. Much interest will doubtless be excited when the immense iron steamer now building for the Great Western Company is ready for sea, as it will then be seen

* She has since made her first passage.

what really are the advantages the screw-propeller (with which she is to be fitted,) possesses over the common paddle-wheel. I know not how it may strike your readers, but it does appear to me—a disinterested person in the affair,—a rather hazardous thing on the part of the Company, to adopt an invention, of the success of which they are not as yet fully satisfied. One voyage, however, from Bristol to New York, will be quite sufficient to decide this question.

I am yours, &c.,

NAUTICUS.

Table of the Outward and Homeward Voyages of the New York Steam Ships for 1840.

Steam Ships.	Date of Leaving.	Date of Arrival.	Time out.	Remarks.
Great Western	Feb. 20	Mar. 6.	15 days 7 hrs	
British Queen..	Mar. 2	Mar. 18.	16 days.	Very rough weather
Great Western.	April 15.	May 2.	17 days.	Heavy Westerly gales and very bad weather
British Queen..	May 1.	May 15.	13¾ days	The quickest passage the British Queen has yet made
Great Western.	June 4.	June 18.	14 days.	
British Queen ..	July 1.	July 18.	16½ days.	Experienced very rough weather during the passage
Great Western.	July 25.	Aug. 10.	15½ days.	
President.....	Aug. 1.	Aug. 17.	16½ days.	
British Queen..	Sept. 1.	Sept. 16.	15 days.	
Great Western.	Sept. 12.	Sept. 27.	15 days.	
President.....	Oct. 1.	Oct. 18.	16 days 18 hrs	
British Queen..	Nov. 2.	Nov. 22.	20 days	Strong gales and squally
Great Western.	Nov. 7.	Nov. 24.	16¾ days	Ditto
	Homeward Voyages.			
Great Western.	Mar. 21.	April 3.	13¼ days	
British Queen..	April 1.	April 16.	14 days 7 hrs.	
Great Western.	May 9.	May 23.	14 days	
British Queen..	June 1.	June 16.	14½ days	
Great Western.	July 1.	July 15.	13 days 8 hrs.	
British Queen..	Aug. 1.	Aug. 15.	14 days	
Great Western.	Aug. 18	Aug. 31.	13½ days	
President.....	Sept. 1.	Sept. 17.	16½ days	
British Queen..	Oct. 1.	Oct. 17.	16 days	
Great Western.	Oct. 10.	Oct. 24.	13 days 11 hrs	
President.....	Nov. 11.	Nov. 27.	16½ days	Left originally on the 1st, and put back on the 6th to New York for a fresh supply of coals, having only made 300 miles in six days! A sailing vessel which left New York on the 10th was not passed by the President until the 26th, off Cork.
British Queen..	Dec. 1.	Dec. 22.	21 days	
Great Western.	Dec. 9.	Dec. 24.	14 days 10 hrs	Strong Easterly gales and head winds 10 days out of the 14.

On Paddle-Wheels.—*The Trapezium Paddle.*

The invention of paddle-wheels for propelling vessels through the water in lieu of oars, is supposed to be of very ancient date. Vitruvius* says thus, "when a vessel is on its way, whether impelled by oars or by the wind, the paddles of the wheel driving back the water which come against them with violence, cause the toothed wheels to revolve." It is clear, therefore, that the paddle-wheel here described, was intended for measuring a ship's way, and by its revolutions with the motion of the vessel impelled by wind, or by oars, and not by the action of the wheel against the water.

The first mention of the paddle-wheel in propelling vessels, occurs in a scarce work *De la Militaire*, by Robert Valtimus, dated 1472,* and a similar invention is also described by William Bourne, in a book called *Inventions* and *Devices*, dated 1578; after which period, we have the successive applications of the paddle-wheel by Papin, Savarey, Duquet, Camus, Hull, the Count de Saxe, Jouffrey, Miller, Symington, Fulton, and others. Ever since the common paddle-wheel, with the exception of a few slight modifications, has continued in general use down to the present period. It did not however escape the notice of several individuals, that the paddle-wheel so constituted, was defective, in many respects; and accordingly in the year 1710, M. Chabert† suggested the easy moveable floats, so contrived as to enter and come out of the water perpendicularly, and a vessel fitted up with wheels on this principle was employed towing barges against the current. In the year 1738, the celebrated Daniel Bernouilli published a work on Hydrodynamics, wherein he showed that vessels might be propelled by the re-action of water, by employing a steam engine to pump water in at the stem, and force it out at the stern, by which operation, a velocity of two knots an hour might be given to the vessel. In 1758, the Academy of Science attracted by the novel idea of Bernouilli, formed a commission, consisting of Bernouilli, Euler, and Mathon de la Cour, for examining the question, and various memoirs were printed and calculations made of the different methods which might be employed to effect the best solution of the problem in the shape of wheels, inclined planes, screws, and alternating motions, &c., all of which have been reproduced or revived in more modern times by Franklin, Linaker, Lord Stanhope, Rumsey, Fitch, Livingstone, and others with greater or less success. It is due, however, to Dr. Franklin‡ to state, and that he was among the first to attract public attention in science to steam navigation, and to perceive the inconvenience of the paddle-wheel arising from over immersion.

From the preceding history of the paddle-wheel and its continued adoption by all steamers in modern times, we are justified in concluding that experience has proved it to be the best and most efficacious instru-

* Schneider Edition of Vitruvius, 1807, *Liber* x. *Cap.* ix.—Ita navis cum habuerit impetum aut remorum aut ventorum flatu, *Pinnæ* quæ erunt in rotis tangentes aquam adversam vehemente retrorsus impulsu coactæ versabunt rotas, &c,

* Muirhead's translation of Arago's life of Watt.

† Machines approuvees per l'Academie.

‡ Franklin's letter to M. le Roi, 1775. The larva of the Libellulild or Dragon Fly,

ment that has yet been tried for propelling vessels by steam. The simplicity of its form, the facility with which the slow motion of the engines can be multiplied so as to produce the requisite velocity of the vessel, are advantages which have not yet been surpassed by any other instrument. It cannot be denied, however, that the common rectangular paddle-wheel possesses many defects. Its great weight and breadth, the large extent of surface it exposes to the wind, the shocks and vibrations it causes to the vessel and to everything on board by the floats entering and leaving the water so abruptly, the loss of power consequent thereon, and the danger occasioned to the engines and the vessel from the alternate drowning and releasing of the wheels in heavy rolling seas, and the impossibility of maintaining the speed of the engines when the wheels are deeply immersed, are all inconveniences too well known to steam navigators to need further comment.

The object of the present patent is to retain all the valuable properties of the common paddle-wheel, without its inconveniences. The principle is founded on that beautiful law of nature which regulates the forms of the feet of aquatic fowls, the tails of fishes, and the wings of birds, whereby each is so admirably adapted to its different functions; and which can only be accomplished in art by an attentive consideration of the objects required to be obtained. The great object of a paddle-wheel is to shape the floats such that the velocities of the exterior and interior portions of the float shall be compensated by a proper distribution of surface, and this can can only be accomplished by concentrating the centre of effort or gyration in some point where the whole force of the wheel shall impinge; but as this is evidently impossible, and it only remains to adopt a figure best suited to fulfil the necessary conditions, this is accomplished in a great degree by the trapezium or trapezoid, inasmuch as the certain gyration being concentrated in the line of the greatest breadth, every portion of the fluid is struck with equal force, and it is precisely this figure which resembles the feet of aquatic fowls.

It would occupy too much space at present to enter into a theoretical investigation of the action of the trapezium paddle-wheel,—suffice it to say, that it presents the question in an entirely new aspect, whether as regards a diminution of surface, breadth, and weight, or vibration and efficiency, combined with extreme simplicity of construction, so desirable in all sea-going vessels, and which, if realized in the trials about to be made on a more extensive scale in her Majesty's ship African, may prove of great public importance.

China.

Observatory, Chusan, August 19th, 1840.

Upon our arrival here on the 28th of July, we found the place already in the British possession; and what we are going to do with it now we

impels itself over the surface of the water, by the alternate absorption and ejection of a drop of water. Duquet employed the Archimedian screw, for propelling vessels in the year 1798.

have got it I can't say. The town is nearly deserted, and has the most desolate appearance you can possibly conceive. Confidence is far from being established; and the conciliatory measures we are ordered to adopt have emboldened John Chinaman so much that he already begins to hold us cheap. Several minor disturbances have taken place, in which they have readily assembled in numbers for the protection of individual property, and have on one or two occasions not hesitated to come to blows. Provisions are scarce. I have been comfortably located in a tent for the last fortnight, close to the encampment of the H. C. Corps of Engineers, to whom I am much indebted for the capital way in which they have erected a house for my transit instrument. The boat comes for me every morning at six o'clock, and away I go for the day, sounding intricate channels, which have given me more trouble than I ever experienced before. I am determined to do my best to prevent any vessel going ashore again, so far as the knowledge of danger goes; and so have commenced my chart on a scale of six inches to a mile.

Sept. 25th, 1840.—I have been located on shore ever since the commencement of August, and have almost completed the survey of the harbour. The company of the 49th, and the Madras Engineers are close to us. We are about a mile and a half from the city, which is a curious conglomeration of houses; not a street in it being twelve feet wide, and the majority only three. It is surrounded by a wall sixteen feet high, and five feet thick, and substantially built, and the gates are well managed; a square bastion extends thirty feet out from the wall, and the first entrance, instead of being in front, is on one side, through which you enter the square formed by the bastion, and then through another archway through the regular wall into the city. The houses are generally one story high, fantastically ornamented at the gables and corners with carved images. The post-houses are extensive buildings with two court yards, round which are houses for the reception of priests or images, if celebrated there; in one of the largest vestibules is a representation of Budh, and there are also four huge uncouth figures, ten feet high, highly painted and varnished; after passing through the inner court you enter a large hall, in which are rows of gilded gods, some of them well executed, but the majority are hideous attempts at sculpture.

The city is still deserted except by the worthless, and by not keeping the scoundrels in something like subjection, they have managed to kidnap and carry off several people, among them Capt. Anstruther, of the Madras Artillery, who was making a military survey of the country and sitting down sketching; we have heard that he is well treated. They made an attempt to take me, but I was too wide-awake. I had been detached outside the harbour in the Nimrod to survey, and landed on the main on a kind of peninsula, where I could see well all round me. I put up the theodolite, and began taking a round of angles. In a short time the fellows began to assemble on a kind of causeway, shouting and making all kinds of noises; the glittering of the instrument, had, however, a great effect upon their courage, and they did not like to advance beyond a certain point; so I finished my round of angles, packed up the instrument, and sent it down by three men to the boat, while I remained with a young midshipman of the Nimrod, and another of the boat's crew to make an eye-sketch.

The disappearance of the instrument induced John Chinaman to screw his courage up; and they came along as fast as their legs could carry them. Thinking, as they mustered about 200, it was time to descend, we started for the boat, and when about half way down the hill they called out from the boat, 'they are trying to cut you off, Sir, and coming round the foot of the hill.' We were in a kind of hollow at the time, and I ran up the side to see how close they were, when on the top I found myself within half pistol shot of a Mandarin, with a long pike in his hand. Not having arms of any description, I put my hands into my pockets, and kept my eye on him. Seeing that he remained steadfast on one knee, and that the men with the instrument were at the boat, I turned and made a run for it. Before we had time to shove off, the hill was covered with men, and they began pelting us with stones. I had great difficulty in preventing the men from firing, and after we got without the reach of stones, they opened upon us from matchlocks, and fired remarkably well, striking the boat in several places. Our return fire soon cleared the hill, except of four or five, who had got well ensconced behind rocks. One man on our side was wounded in the shoulder, whilst firing over my head; and having to go through a narrow passage, where they could have commanded us on both sides, I went on board for the boat's gun, and the next day we continued the survey without any molestation, except their curiosity and impudence, which beats all my experience. You no sooner take your eye from the theodolite, to read off, and write down your observations, than you see a fellow with his eye to it, and it requires a good blow to keep them off.

One of the officers of the 49th, the day after they landed, was taking his dinner in the Guard House, when a Chinese quietly walked up, put his hand into his plate, and helped himself to a morsel, which, you may be well assured, never reached his mouth, for he was sprawling on the floor. The admiral is expected hourly from Pe-che-le; a steamer returned from there three days ago, by which it appears he has been favourably received; his Celestial Majesty says, he would sooner take any alternative than fight with his English children. The Chinese are a wonderful people—their industry must be seen to be appreciated. The steep sides of every island are covered with garden patches, laid out in the most complete and elaborate manner that I have ever seen. Every nook and bay is fronted with compact masonry embankment, which not only prevents the sea from encroaching upon their lands, but also forms a dyke for the deposit of rich soil, which is so necessary for the cultivation of rice. Their towns, immediately upon entering, ruin the idea of neatness and cleanliness, which you are already prepossessed in favour of by their beautiful terraces; such a combination of filth I never came across; every thing is sacrificed for the sake of manure, and undergoes a process of decomposition in the midst of their most populous districts.

Observatory, Chusan, Sep. 25th, 1840.

The weather has been particularly favourable for ☾ culminations, having only lost four nights since I commenced. I conceive, therefore, that the longitude of this place will be correctly established.

During the interval between the moon culminations, the Commodore sent me to do some work outside,—and Captain Barlow wishing to explore the southern shore of Kitow Peninsula, we commenced at the island of Sang-lasan, and filled in the coast-line accurately, from thence through (what is termed in Thornton's chart,) the Ten Fathoms Junk passage, Roberts best passage, and Goughs passage, up to Batemans island. Of course it is not so well sounded as I could wish, and from Batemans island we traced the Peninsula in a south-westerly direction, proceeding up an arm of the sea, in breadth from four to eight miles, with twelve and fourteen fathoms water to the distance of twenty-five miles, where it opened into a spacious bay, the termination of which in the north was not seen. The boats unfortunately having but two days' provisions, we were obliged to return, without satisfactorily establishing whether a passage in that direction led to Ning-po. Having the peaks well fixed inland, our progress so far was well established, and the coast-line pretty accurately fixed; but in detail, not so well as that part to the north of Batemans island. This occupied me from the 25th of August, until the 3rd instant, when I returned here to continue this harbour, and the observations for the longitude.

The climate appears to me good, but I am sorry to say the troops have suffered most severely, each regiment having nearly 300 men sick, and one, the 26th, more than 400, which I attribute to bad food, and the absence of the camp followers they have been accustomed to in India. To between sixty and seventy Europeans it has already proved fatal, and the Bengal volunteers have suffered much. The island therefore, as you may presume, is not so highly thought of as when first occupied, and will be given up by its present occupants at least without regret. The town or city has been deserted, and continues so still except by a parcel of miscreants, who for want of a proper police, and a severe example being made of them in the first instance, have reduced it to the same state as if it had been sacked. The city is surrounded by a small wall fifteen feet high and five feet thick,—the houses generally speaking one story, substantially built of brick,—the streets narrow, seldom twelve feet wide, generally four feet, paved with excellent stone, which this island abounds in. Canals may be considered as the high roads of this country, every valley has one, and even many of the large fields; foot-paths are the only other means of communication; four or five horses are all that have been found upon the island, and bullocks, as well as all kinds of provision are scarce. The people are very industrious, and the manual labour which they undertake in the cultivation of the mountain ridges is extraordinary. The hills, as high as 600 feet, are more like gardens in England than anything else. The sea, generally speaking, in each valley is prevented from encroaching, by substantially built stone walls or embankments,—a small canal generally runs along the whole length of which, and communicates with the sea by sluice gates, formed by planks let into two grooves (on each side,) of stone pillars, and the space between filled with mud; some of these paddy fields thus gained from the sea are four feet below high water spring-tides

The latitude* is 30° 0′ 10″, longitude by chronometer 122° 10′. The moon will, however, I think place it four miles to the eastward. Mr. Symonds, (the

* The beach of Port Tinghai near the suburbs of the city, by the chart belonging to the series published by the Admiralty, is in about latitude 30° 0′, and longitude 122° 5′, a coincidence with the above affording tolerably strong proof of the correct judgment exercised in the compilation of charts generally in the hydrographical-office. What will be thought of the following note, which we find on the same chart; such confusion is scarcely credible:—

"To shew the uncertainty of the positions on this coast the Jesuists (1717,) place Port Tinghai in latitude 29° 57′—Dalrymple in 1788, 30° 25′—Lord Macartney's voyage in 1793, 30° 25′—Horsburgh 1836, 30° 10′—The Sylph (by reduction from Sin-ka-mun 1832, 29° 59′."

In the midst of such vague information, and while the work of our surveyors is on its way home from China, it is gratifying to find one of our principal geographical positions so near the truth.—Ed.

mate who is with me,) has made some very nice drawings for Melville and Hindoostan rocks, and also the other dangers that should be avoided in coming into this place.

The Indian Oak's boat arrived here on the 10th, with the intelligence that she was wrecked upon the island of Loo Choo, ten miles north of Na-pa-kiang. The Cruizer and Nimrod were dispatched immediately to render her assistance, but she is, I understand a total wreck. Part of the mails which were sent from here are saved.

The Conway still continues in the Yang-tse-keang, with I believe, the Algerine and Kite, armed transport. Wellesley, Blonde, Volage, Pylades, and Modeste, on their way from Pe-che-le. Druid, Columbine, Larne, and Hyacinth, at Macao.

Chusan, 17th October, 1841.

I received a few lines from England the other day at this place, on our return from the gulf of Pe-che-le, having been absent upwards of two months in company with the Admiral during his negotiations with the Emperor. You may easily imagine that news from home must possess more than usual interest to me in this distant part of the world, cut off as I am from civilized society, upon an enemy's coast, where every man's hand is against you, and who would glory in knocking you upon the head, or otherwise injuring you. Several of our people are now in their hands, having been kidnapped; and I am sorry to say that Lieut. Douglas, who went out in the Blonde, is now a prisoner amongst them at Ning-po, some sixty miles hence, having been wrecked in a small vessel which he had been appointed to command, amongst the shoals of a dangerous and unknown sea, and thus fell into their hands. This very day we had intelligence of his safety, and each of us have been contributing some little article of clothing, &c., to send to him, as he was robbed of everything he possessed. He has a brother in misfortune, in the person of Capt. Anstruther, of the Royal Artillery, who was kidnapped while sketching in the immediate vicinity of our encampments, and that too, whilst peaceful negotiations were going forward. But I must try back, and give you some account of our proceedings since my last letter, which was dated the 14th of July last, at that time blockading the port of Ning-po, and hour by hour expecting hostilities to commence.

We continued off that port till the end of July, the Chinese treating us with great civility in all our communications with them, until they rendered the navigation of the river impracticable, by sinking numerous vessels, erecting batteries, &c., when they turned round and told us they would hold no further intercourse with us; after which, upon our boats entering the river with a flag of truce even, they fired upon them. We confined our operations entirely to stopping all vessels leaving or entering the port, treating all with kindness; and were not even allowed to resent impertinences, by the positive orders of the Home Government. I assure you we were not sorry to leave Ning-po, the duties were very monotonous, and the tides so strong, as to render them very arduous. We accordingly returned to this place, and sailed on the 30th of July, in company with the Wellesley, 74, bearing the Admiral's flag; the Blonde, 42; the Volage, 26; the Pylades and the Modeste, 16-gun sloops; two transports, and an armed steamer, forming a nice little squadron, and a very effective one to boot, for the mouth of the Pei-ho river, in the gulf of Pe-che-le, upon which Pekin is situated, some sixty or eighty miles from its embouchure, and off which we anchored on the 8th of August, but at such a distance from the shore, as not to see it from deck, the sea being so very shallow. Here all our communications were received with civility, and were direct to the court of Pekin itself, from four to six days only being required to send and to receive an answer in return. Procrastination, however, formed the basis of their proceedings, and this with the object of gaining time, which they employed in the throwing up of batteries, collecting troops, and putting things in the best possible position to resist any force or attempt on our part to land a hostile

force. From every thing I could learn, the Emperor showed every disposition to treat; the great difficulty being the payment of the 3,000,000*l.* for the opium destroyed. The squadron received presents of bullocks, sheep, fowls, fruits, (apples and pears,) &c., without payment. A definite arrangement, however, did not take place; but a commission started for Canton, to enquire into the whole of the circumstances; and we are shortly to sail for that place, to receive a final answer. If unfavourable, war will be declared, and our first affair will be to knock the forts of the Bogue about their ears, and afterwards, possibly, attack the city of Canton itself.

During our stay in the Gulf of Pe-che-le, we entered the Gulf of Leotong; had a peep at the commencement of the Great Wall of China, which divides China Proper from Chinese Tartary. We afterwards crossed over to the Tartar coast for the purpose of watering and procuring bullocks for the squadron, in which we succeeded; but only by sending a foraging party on shore and surrounding two herds, which we marched down to the beach and shipped. The natives were afterwards paid, and were quite satisfied. They would, however, sell us nothing; being so completely under the authority of the mandarins, who keep them in utter subjection. On sailing from Pe-che-le, we were detached to examine a portion of the coast of Leotong, never previously visited by an European ship. This was all new ground, and consequently interesting. The coast we found hilly, but not mountainous, exceedingly barren, and the rocks showing everywhere, with scanty herbage for cattle, of which there are plenty of a diminutive breed. The country almost devoid of wood; the valleys, however, and low grounds are highly cultivated and fertile, and constantly bring you in mind of extensive kitchen gardens, everything growing in small patches; maize, corn, various kinds of millet, as also of kidney beans, peas, sweet potatoes, turnip radishes, turnips, and a large species of salad, and other vegetables, were the principal articles of culture. They also grow wheat, but I saw none. I was agreeably pleased to see the birch, ash, and forest oaks, and one or two other European trees.

After coasting along about one hundred miles, we got entangled amongst innumerable islands, with a difficult and dangerous navigation, which we zigzaged amongst for another one hundred miles, when we found ourselves one morning off the coast of Chorea, nearly on a bank, which satisfied the captain that our ship might very possibly leave her ribs upon one of them, and caused him to haul to sea, and make the most of our way back to Chusan, where we rejoined the Admiral. I forgot to mention that the whole of the ships (one excepted, which had been twelve months in the China Seas) were exceedingly sickly. At one time the Blonde had one hundred in the sick-list, but fortunately the disease did not assume a fatal character, and all the men recovered. Several deaths, however, occurred in other ships. Our expedition cruize, during which we enjoyed lovely weather from the change of the monsoon, and plenty of fresh beef, put our fellows in a fair way of recovery and at this moment we are the healthiest ship of the squadron, having to-day only six on the sick-list. The troops also, I am sorry to say, have suffered dreadfully, and continue to do so, from dysentery and ague. Indeed, they could not bring into the field 1,000 out of the 4,000 troops on shore. The weather is now delicious, and we trust that it will set us all on our legs and fit for fight. It is reported that the Admiral will sail shortly for Macao, and that a part of the squadron will spend the winter in blockading Ning-po, and preventing the embarkation of Chinese troops for the recapture of Chusan! This latter duty will be very monotonous, and the climate during the winter very severe.

The following is the disposition of the forces of the expedition :—

In Canton River.—Her Majesty's ships Wellesley, 74, Blenheim, 74, Melville, 74, Druid, 44, Calliope, 28, Samarang, 28, Herald, 26, Larne, 20, Hyacinth, 20, Modeste, 20, Columbine, 18, Jupiter, store ship; and H.C.S. armed steamer Queen, Madagascar, Enterprise, Nemesis.

At Chusan.—Her Majesty's ships Blonde, 44, Conway, 28, Alligator, 28, Pylades, 20, Nimrod, 20, Algerine, 10, Rattlesnake, troop ship; and H.C.S. armed steamer Atalanta.

Macao, Dec. 3, 1840.—We regret to inform you, that in consequence of the sudden and severe return of an old complaint—palpitation of the heart—Admiral Elliot, on the 29th ultimo, resigned the command of the expedition to the next in seniority, Sir J. J. Gordon Bremer, and intends proceeding home in her H.M.S. Volage, Capt. G. Elliot, immediately expected back from Manilla. The powers plenipotentiary of the Admiral devolve singly on his colleague, Capt. Charles Elliot, chief-superintendent.

The firing from the Chumpee Fort on the Queen steamer, carrying a flag of truce, was promptly apologised for by the Chinese as a mistake.

On the 24th ult. H.M.S. Blenheim proceeded to the Bogue, and has since been followed by nearly all the squadron, and about 400 Madras sepoys, to be ready on his arrival to take the forts, in case of any undue delay on the part of the Chinese in going on with the promised negotiations; there having been reason to suppose that their plenipotentiary Kishen was purposely delaying his arrival. But on the 29th, having previously sent officers to congratulate the Admiral on his arrival, he made his public entry at Canton, whence it is supposed he will immediately proceed to the Bogue, and perhaps come on to Macao, where Commodore Bremer and Capt. Elliot now are.

The following extract from the Naval and Military Gazette, in the tenor of which we fully participate, states the cause of the return of Admiral Elliot in the Volage.

"Since we announced, with sincere regret, the severe illness of Admiral Elliot which compelled him to resign the command of the squadron on the coast of China, into the hands of Commodore Sir Gordon Bremer, we have heard from an officer of one of the ships there some further particulars of that event, which show the high and correct sense of feeling of the gallant Admiral, that led him to sacrifice all personal considerations to a true regard to the duty he owed to his Sovereign and his country.

"It has been stated to us, that when the Commander-in-chief found himself daily becoming worse, he sent for the Commodore, and having explained to him the nature of his sufferings, from a long-seated disease of the heart, he observed to Sir Gordon Bremer, during a momentary relief from the paroxysms of his pain,—

"'If I studied only my own happiness and peace of mind, I should retain the command to the last, and anxiously seek the opportunity of sacrificing my life in action with the enemy; but I consider that if I continue to hold it until the necessity for that event may arise, the interests of my country must seriously suffer in the interval, whilst I am unable, by my sad affliction, to attend to the duties of my station; hence I have thought it right, whilst my reason is perfect to resign the command into your hands, well knowing that the Queen's service will thus be essentially benefited by a measure, which, to my own private feelings, cannot, as you will readily believe, but largely increase my malady, and, in all probability, hasten me to my grave.'

"This noble high-minded conduct, in this distinguished officer, will, we are sure, be duly appreciated by every Englishman that learns these facts, and our best and warmest hopes are that he may yet be spared to reap the reward of such disinterested patriotism, and that the full re-establishment of the gallant Admiral's health, on his reaching a more genial clime, will enable him again at an early period, to be employed against the enemies of his country, and, as we confidently trust, to gain those fresh laurels which he so well deserves to acquire."

Conversion of Sea Water into Fresh.

In our February number, p. 133, we noticed the invention of a machine for converting sea water into fresh. The following letter which we find in the Hampshire Telegraph, confirms the statement we then made.

Sir.—I avail myself of the columns of your very influential work, to make a few remarks upon a most important measure, which Captain Sir James Stirling and myself have for some time had in hand, and which has accomplished the desideratum, indicated at the head of this letter,—one which has been so anxiously sought after by the scientific men for ages past; and being for a long time confined to one single point to be overcome, viz., the proportion between the quantity of water and a given quantity of fuel, it is really surprising should never have been found capable of being reduced to practice till the present day.

The necessary limits which must confine me in this communication, will restrict my observations at present to the incalculable benefits of the measure to the Naval Service. But, first I must allude to the attempts made some years ago by "The Sea Water purifying Company," and which created the greatest enthusiasm,—King William, and many of the leading Naval Characters of the day, patronising it. The only machine ever produced by that Company, I used on board the Iberia steamer, carrying her Majesty's mails to Spain and Portugal, which ship I commanded for some years. This machine unfortunately embraced cooking, as well as distilling sea water, and in consequence of its utter inability to supply the demands made upon it in its former capacity, it became neglected and abused, by the cooks; and it was in consequence removed, after about eighteen months of complete success as to its distilling properties. It is indeed only due to the respectable gentlemen engaged in that affair, to say, that their machine possessed some very great merits; but it was never professed by them to attain a greater product than one gallon of water for 1lb of coal, and I believe that neither in the machine alluded to, nor in any other attempt, has that proportion in practice been even pretty nearly approached by distillation. We have, however, been acting upon the principle of a patent recently obtained, whereby above four gallons may be procured for the pound of coal; but have considered that for use on board ship, it is not necessary to carry this capability to more than one half, or one gallon for half a pound of coal,—this resulting in making twenty tons of coal the representative of 400 tons of water.

In respect to the quality of distilled Sea Water, it is only necessary to follow up the assertion, that distilled water is not only the most wholesome, but in fact the *only* pure water, by stating, that this has been fully admitted by officers, and popular professors purposely appointed to try the same by the Admiralty.

Thus has been presented to the Naval Service one of the greatest boons perhaps that it could possibly receive; it embraces almost an endless consideration of advantages,—first among which is, the means of improving the forms and construction of our ships, rendering them lighter, more nimble, drawing less water, and consequently sailing better; and those who are first in carrying out this measure to its full

extent, will have the handiest, and consequently, the most efficient men-of-war; next, by clearing their hold of one half or three-quarters of the water, it will give room for carrying troops, or more space and ventilation for the men. They can be partly ballasted with coal, as a reserve for steamers, or afford room for steam machinery themselves; the necessity for which last-named measure, I apprehend, not to be far distant,—but although named last, certainly the greatest benefit of this important measure will be, the increased health of the crew. Every one who has experience of a sea life knows that ninety-nine cases out of one hundred of illness on board ship, on foreign service, are caused by bad water, that it is almost the invariable cause of dysentery, and perhaps cholera also.

To place in view a few of the effects of bad water at the present day;—The sickness at Chusan is said to be caused by bad water, and from all appearance goes far to threaten the most disastrous consequences to the expedition; and the deaths of our seamen and marines on the coast of Syria, were produced by bad water; in both cases causing dysentery;—and, in calling to remembrance my own career, I never was but once ill abroad, and that was caused by the bad water of Alexandria, causing dysentery.

Add to these effects of bad water, the occasional want of it altogether, and the difficulty and sickness attending the procuring of it in tropical climates, where more men have perished by the diseases consequent upon watering, than by fighting; add also, the enormous expense and difficulty of watering a blockading fleet.

The Mediterranean fleet, it is even now said, is detained in Marmorice, where they can get nothing but water, instead of going to Malta, because they are with difficulty watered at that island. In fine, water on board ship is well known to sailors to be the most important of all stores,—to be the object of first consideration,—and this contrivance is evidently calculated to obviate all the inconveniences and anxieties it embraces.

It is also worthy of observation, that men-of-war may thus always be kept in their proper trim, and not found occasionally in the state of the Ganges when the gale came on, in which the Zebra was lost, and nearly so, the Pique and Bellerophon. This ship, the Ganges, is stated then to have wanted 300 tons of water! Upon which it may be observed, that if she was then in a condition to weather a gale, she must be in a very unenviable state when the 300 tons of water is filled up,—the whole of which must clearly be an incumbrance to her sailing qualities.

I am, &c.,

London, 17th Feb., 1841. R. D. MIDDLETON.

NEW STEAMER.—The new steamer about to be launched at Milford, and to be called the Geyser, is to have for her figure-head a bust of Sir Joseph Banks, the late President of the Royal Society, the first of our countrymen who visited, and gave an account of those extraordinary springs of Iceland. This is judicious, and it would be difficult to find one more appropriate. We understand it is copied from the admirable original by Chantry.

(Continued from p. 196.—CL crew lost. CS crew saved. D drowned.)

VESSELS.	BELONG TO.	MASTERS.	FROM.	TO.	WRECKED.	WHEN.	
Adelaide 268	———	Granby	Charente	Liverpool	Holyhead	Feb. 11	CS
Ann	———	———	Wicklow	Liverpool	W Hoyle	Dec. 20	CS
Apollo 270	Hull	Sadler	Roterdm	Hull	Hasbro S.	Feb. 25	CS
Arctic	———	Huby	Maldon	Waterfrd	Wainfleet	Jan. 10	
Australia	Alloa	abandond	drifted	on	Sable I.	Dec. 9	
Belinda	Troon	McNicol	———	Malta	abandoned	Nov. 22	CS
Boreas	———	———	Liverpool	not heard	of since	Jan.	
Bensley 275	———	———	———	———	Dunraven	Feb.	CS
Clifton	Workinton	———	Chaleur	Fleetwod	Annaside	Jan. 13	CS
Danube	———	Butghard	Sundrlnd	Borde'ux	C. France	Jan. 12	
Dolphin	Cork	abandond	in a sink	ing state	Scilly	Dec. 8	
Earl of Devon	———	Grace	Exeter	Newport	Penzance	Feb. 4	CS
Eden 280	Sunderland	Cogle	———	———	Scotland	Jan. 23	CS
Edm'd Wodehouse	———	Bayfield	Yarmoth	Genoa	Faza	Jan. 5	CS
Eliza	———	Burrows	Quebec	Jamaica	Turks I.	Dec. 18	CS
Eliza	———	McAlpin	Pictou	Glasgow	Sable I.	Dec. 7	CS
Elizabeth	———	———	Seaham	———	Gunfleet	Dec. 18	CS
Elton 280	Stockton	———	Newcastl	Constnpl	Hasbro S.	Jan. 23	CS
Emma	———	DeGarris	Guernsy	St. Ubes	Figueira	Jan. 9	CS
Fanny	———	Channon	Newport	———	Mixon	Jan.	
Flamer	Insey	Prouet	Jersey	Liverpool	Jersey	Mar. 2	CS
Friends	Newquay	Davis	———	———	S rumble H	Jan. 19	CS
George 220	Sunderland	Ripon	Hull	Stockton	Tees Bar	Jan. 9	3 D
Glasgow	Greenock	———	Montreal	Gre'nock	Sable I.	Nov. 27	2 D
Golconda	———	lost previ	ous to	Feb.	PuloCanton	China	
Hebe	———	Flat	Hond'ras	———	Ambletse	Jan. 21	
Heroine	———	———	China	London	C. Spartel	Feb. 14, 60	D
Hillsborough 295	Donaghdee	Kelly	———	Liverpool	Formby B.	Feb. 27	1 D
Hunter	Sunderland	Smithson	London	Sundrlnd	run foul of	Jan. 22	CS
Industry	———	———	Harwich	Portsmth	Brake S.	Jan. 30	CS
Jane	Portaferry	Clarke	Troon	Dublin	Drogheda	Feb. 1	CL
Jane	———	Philips	———	Michaels	St Michaels	Dec. 27	CS
John A. Black 300	———	Ewens	St John	Belfast	Gr. Manan	Dec. 24	CS
John Pauper	———	———	Sydney	Liverpool	———	Oct.	
Leader	St. Andrew	Mervat	St. Andre	Jamaica	Turks I.	Jan. 17	
Lucy	Liverpool	Wallace	Liverpool	Valparisc	Sal I.	Dec. 9	CS
Malta	Londondery	———	Quebec	Lon'dery	St. Pierre	Nov. 26	
Marathon 305	Shields	Davison	Sundrlnd	London	at sea	Feb.	CS
Margaret	———	Crass	Liverpool	R. Plate	Dras Rck	Jan. 14	CS
Maria	———	Smith	———	———	Enconter B	———	
Maria	Londondery	———	Quebec	Lo 'dery	St. Peters	Nov. 18	
Mars	Sunderland	Wilson	Sundrlnd	London	abandoned	Jan. 17	
Mary 310	Llanelly	Sambrok	St Mawes	———	Off Lizard	Jan. 9	
Perseverance	Lynn	Roberts	Leith	London	Stainton D	Jan. 16	1 D
Planet	———	Mangles	Corunna	Oporto	C. Portugal	Feb. 4	CS
Reaper	Poole	Pinto	New stl	Poole	Hook S.	Jan. 31	CS
Robert	Goole	Redman	Goole	run foul	of	Jan. 22	CS
Robert 315	London	———	———	By fire	North Sea	Jan. 21	
Sesostris	———	———	Pictou	Glasgow	NovaScotia	Dec. 20	1 D
Sir A. Hammond	———	Newby	Whaler	———	Pacific	Dec. 25	CS
Sir D. Ogilvie	———	———	———	———	Australia	Sept.	CS
Spartan	Newburypt	Knight	Liverpool	Ha ana	Harbour I.	Nov. 22	CS
Susan Maria 320	Donegal	Brooke	Ardrosan	Donegal	Tullan B.	Feb. 10	CS
Udney Castle	———	Turnbull	Liverpool	———	C. Good H	Nov. 23	1 D
Westmorland	———	Nesbitt	Richbcto	Cork	Pr. Edwd I	Nov. 28	
W. Gray	Peterhead	Gray	Invkthng	Oporto	Cruden	Feb. 17	
Young 324	Sunderland	her stern	washed	on shore	Staithes	Jan. 20	

To be continued.

Collision of Steamers with Sailing Vessels.

Sir.—When the Elder Brethren of the Trinity-House issued this "law of the road," in October last, they half did what they ought to have done, and the late accident in the case of the Governor Fenner proves it. In how many pages of your *Nautical*, Mr. Editor, for years has the necessity been shewn of the proper lighting of steamers? It has been said and proved that a single light may be taken for a floating or headland light, and it was clearly such a mistake that caused the Gil Blas to be run down,—mistaking a steamer's light for that of the South Sand Head.

But to come to the melancholy affair of the Governor Fenner, that ship had just sailed from Liverpool,—was standing out in a rather dark night, with a stiff breeze at south,—consequently on the larboard tack. A sail is seen at a distance on the weather-bow: no suspicion seems to have been entertained that this was a steamer. A light was observed, and from all that can be gathered from the Newspapers, that light seems to have been shewn as it would be from a sailing vessel. On the approach of this vessel under canvas, it appears, that recollecting the law laid down by the Trinity-House, the steamer attempted to give way to the sailing vessel, by passing to leeward of her, and that the Governor Fenner taking the steamer for a sailing vessel, very properly, according to established usuages, bore up also to go to leeward, and in consequence the awful collision, whereby above 120 lives were lost!

Now, is it not clear, that if the steamer had been properly lighted, *so as to put it beyond question that she was a steamer*, that this dreadful accident would not have taken place. The Governor Fenner would have kept her luff, and the steamer would have passed to leeward of her.

It has required the collective wisdom of that useful body of gentlemen on Tower Hill, to witness about a quarter of a century of continual accidents amongst steamers, before they could bestir themselves to do what common sense has been calling so loudly for, viz. the establishment of the rule in question,—and probably, after another lapse of years shall have doubled these dreadful losses, it may be found out, that in fact without going further, and insisting upon the proper lighting of these vessels, the rule now promulgated, has accomplished more harm than good!

I have occupied a good many of your pages in remarks on the subject of steam navigation, and I would now most seriously call the attention of those who have the power of remedying the evil, to the necessity of doing so without loss of time; and there seems to be no way so effectual as to insist upon the adoption of three lights—one under the cross-trees of the foremost, and one on each paddle-box,—forming an equilateral triangle. No one could mistake a vessel carrying such lights for any thing but what she is, and if the light at the masthead was a pale one, that in the larboard paddle-box the same, and the one on the starboard side a deep red; they would readily indicate every change of the steamer's motion, by altering the nature of the triangle.

A further strict prohibition should exist against a steamer carrying sail in the Channel, or on the coast of England, during night; it is the

very height of folly, in respect to the very questionable amount of speed gained by it, and madness when the great increase of danger is considered. In the case of the late accident referred to in this paper, I think it is pretty clear, that had it not been for her own sails, the steamer would have seen the Governor Fenner, and being, as stated, well to windward, would, most likely, have gone away so far more to windward as to have avoided all chance of collision; but with sail set, and going rather free, luffing up endangers the loss of topmasts; and bearing away sufficiently may even have been influenced by fear of bringing her by the lee, and all the sails aback! In fact, steamers are not under command when their sails are set, and had it not been for the sails of the steamer, putting lights even out of the question, the Governor Fenner would undoubtedly have kept her course, and thus the accident would not have occurred.

I am, &c.

MERCATOR.

[We understand that Capt. Taylor of H.M.S. San Josef has lately directed his attention to this subject, and published his views relating to it. A correspondent of the Hants Telegraph suggests that "Steamers, when running down on a sailing vessel, should, by a general understanding among all nations, always steer, so as to make it clear to the vessel to leeward, that she was going astern of her, and, that there might be no mistake, should bring her broad on the bow; and to insure this arrangement being complied with, let her insurance be affected should an accident occur. This of course is supposing a case where one vessel must necessarily give way." All this may be very well, but while a *bad look out* is kept, no rules will keep vessels clear of each other.—ED.]

TRIAL OF THE MERMAID IRON STEAMER, *with Mr. Galloway's new Engine, and Mr. Smith's Screw-propeller.* On Saturday the 14th, a trial of the above steamer took place on the river between Battersea and Southwark bridges. Her dimensions are, length 130 feet, breadth 19 feet, depth 9 feet, tonnage 164, and she was built by Mr. Ditchburn. The engine, a rotary one, made by Messrs. Rennie and Co., under the direction of Mr. Galloway, is constructed on an entirely new principle. The boiler is on the locomotive principle with brass tube, and is equivalent to fifty or sixty horse-power. The weight of the engine and boiler is only eighteen tons, and the shaft with a brass screw at the end is the only machinery about it. There are no wheels, nor geer of any kind. The result of these experiments was a velocity of ten to eleven miles per hour, through still water; and it seems likely that when the whole is completed, a greater velocity will be attained. Should this engine entirely answer the expectations of the ingenious inventor, a great revolution seems more than likely in steam navigation. We understand that Mr. Galloway's engine will occupy but a sixth part of the space filled by the present marine steam engine.

THE BRIG ELTON.—*Reward.*—We understand that the master and crew of the Mermaid, a fishing smack of Ostend have been rewarded

by Government with Twenty Pounds for their exertions in saving the crew of the brig Elton, of Stockton, wrecked off the coast of Norfolk.

It appears that they were found drifting towards the Flemish coast in an open boat, with nothing but one oar and a bucket,—the vessel having struck on Hasbro' sands, and immediately gone to pieces. The boat was without a rudder, and was kept head to sea with their only oar, and the bucket was continually employed in baling her out. They were without food or water, and were perfectly helpless from cold and hunger. The cabin boy had already died, and one man was drowned as he attempted to get into the boat. The Elton was wrecked on the evening of the 22d of January, and the crew were in that awful situation till the morning of the 25th. The vessel appears in our Table of Wrecks, page 271.

French Tribute of Respect for the Humane Conduct of an Englishman.—Thomas Rock Jones, master of the brig Sovereign, of North Shields, in April last, fell in with the French schooner La Providence, in the Gulf of Lyons, at a moment when the latter vessel was on the point of sinking from the effects of damages suffered in recent tempestuous weather. Capt. Jones exerted himself to remove the crew, in which he succeeded; he afterwards treated them with great humanity, and in the end landed them at Barcelona in safety. Grateful for the kindness he had experienced, the master of the lost schooner, Mons. J. F. Reynaud, made declaration of the facts before the French consulate at that place. Thus the story of Capt. Jones's conduct reached Paris, and he has since been honoured by the presentation of a splendid gold medal, having on the obverse the head of the King of the French, and on the reverse the following inscription—"From the Minister of Marine of France to Thomas Rock Jones, of an English vessel, for his generous aid in rescuing the crew of a French vessel from destruction."

Survey of the North Sea.—We perceive that the officer selected for carrying on the important survey of the North Sea, begun by the late Captain Hewett in the Fairy, is Commander Washington, who has commissioned the Shearwater for that purpose at Woolwich, to which vessel a tender will be attached. The energy of character and scientific attainments of Commander Washington are such as to lead us to expect the best results from this appointment.

Survey of Portsmouth Harbour.—A most minute survey of the harbour of this our chief naval Arsenal has been made during the latter part of last summer by Lieutenant Sheringham and the officers attached to his party, which for the fullness of its detail, the elegance of its execution, and the general masterly style in which it has been turned out of hand, is unrivalled by any work of the kind that we have seen. Among other pleasing reflections which an examination of it affords is the fact that, during the last fifty years since the only former survey was made on which dependance can be placed, the depth of the harbour in its important parts, has not undergone the smallest change whatever, shewing that no deposit has taken place from the vast mass of sea water which covers it daily. We understand that Lieutenant Sheringham is to continue his survey over Spithead and Langston harbours.

PARLIAMENTARY,—*Thursday, March 18th.—Harbours of Refuge.*—Mr. Rice, seconded by Mr. Planta, moved for a select committee on the state of the harbours of refuge along the south-eastern coast. A commission had been appointed last year to examine this subject, and had made a report, which it was now sought to refer to the proposed committee.—Mr. Baring resisted the motion, both because it suggested no particular course, and because a commission was a more competent authority in such a matter than a committee of members of Parliament.—Mr. Mackinnon thought a committee would be useful to decide between the deep-water and the back-water principle.—Capt. Pechell urged, that when millions of money were voted for churches, there might be a grant for harbours. It was as important, he said, to preserve men's lives as their souls.—Mr. C. Wood was of opinion that no useful addition could be made by a committee to the information already existing — Sir R. Peel was not disposed to promote the formation of a variety of harbours of refuge, except to the extent of providing mere shelter for small craft; as to the larger class of vessels, he was sure it would be a more useful policy to construct one or two large and serviceable harbours, than to lay out several smaller sums in making minor ports, which at last would probably be found of little avail. He thought the matter should be left to the Government.—The motion was negatived.

Mr. La Roche.—Mr. Alston moved that a petition of a naval officer, named La Roche, should be referred to a select committee. The petitioner complained that the Admiralty had left him for very many years unemployed, in consequence of an intemperate letter addressed by him to their board, in which he had reflected on the conduct of the officers composing a court-martial upon some part of his previous conduct, and which latter he had refused to withdraw at the board's suggestion; and he further complained that he had been passed over in a late promotion.—Sir T. Cochrane thought it undesirable that such objects should be referred to the cognizance of the House of Commons. If the mover thought the Admiralty did not do justice to the Queen's officers, he had better propose a vote expressing his want of confidence in them.—Admiral Adam panegyrized the officers composing the court-martial, and observed upon the unfitness of re-opening their inquiry, when thirty-four years had since elapsed.—Capt. Pechell supported the motion: but which was negatived without a division.

NOTICES TO MARINERS.

ROCK AMONG THE PHILLIPINE ISLANDS.—Extract of a letter from Captain Herbert of H.M.S. Calliope describing a Shoal discovered in the Straits of San Bernardino, about three miles off the island of Sibuyan.

"A coral reef of which there was no appearance either by discoloured water or ripple about three miles off the island of Sibuyan in the following bearings. The centre of the two peaks of Sibuyan S. 45° E.; the deep saddle of the island S. 11° E.; extreme western point S. 56° W.; eastern extreme S. 85° E. No soundings were given by the leadsman, or any visible danger seen by the masthead-man, or any shewn on the chart."

NEW LIGHT-HOUSE AT STOCKHOLM.—The following has been received at Lloyd's from the Swedish and Norwegian General Consulate, dated London, Nov. 21, 1840:—

"Sir.—I have the honour to communicate to you for the information of mariners, the following translation of an ordinance issued by the Royal Navy Board, at Stockholm on the 30th of October, and to which I am free to request that you will give publicity:—

"1. That a new light-house of stone has been erected on the Utklippon, situated in N. lat. 55° 56, and in long. 33° 50 E. from Ferro, about 2¾ German or geographical miles south from the castle of Kingsholm near Cariskrona, on which tower has been placed a revolving light, which gives three equal clear flames within a period of six minutes, with equal long intervals of dark. The height of the tower is thirty-two feet above the rock, and the light fifty-three feet above the level of the sea; consequently, the latter ought, in clear

weather, to be seen when two and a half geographical miles distant, or more, from a vessel, whose deck is ten feet above the water.

"2. That, instead of the former coal beacon at Tandsort, outside the one entrance to Stockholm, a revolving light has been erected, consisting of a triangle with three reflectors on each side, which, similar to the one at Utklippon, will give three strong flames, with equally long intervals of darkness, within a period of six minutes. The tower, which has been partially altered, is sixty-four feet high, and the light being 147 feet above the level of the sea, ought in clear weather to be visible four geographical miles distant, or more, from a ship's deck ten feet above the sea.

"The above-mentioned two lights will be exhibited on the 15th of November, and continue at the same time of day and night as at the other light-houses in the kingdom."

"I have the honor, &c.,

"Charles Tottie."

"*To W. Dobson, Esq., Secretary of Lloyd's.*"

Plum Island, *Feb.* 1.—The light-houses at the entrance of Newburyport harbour, on Plum Island, are now arranged in such order that vessels may run in over the bar at two-thirds flood, night or day, by keeping them in range—which course should be continued till within two hundred yards of the Eastern light, when if in the night time you must haul to the north about a cable's length and anchor, or proceed up the river if you can; but all vessels of a moderate draught will be safe at an anchor when the eastern light bears S.E. ½ mile distant.

Phineas George, Keeper of the Lights.

Hamburgh, *Feb.* 23.—On the part of the Navigation and Harbour Deputies an arrangement has been made, that upon re-opening the navigation a small craft shall be placed beneath Schulaw, between the black buoys Nos. 9 and 10, on the southern side of the river, where some time ago two ships have been lost; and that the said craft during the day time shall carry a signal, and during the night a lanthorn, and that she shall remain there until the many vessels which are at present lying at Cuxhaven have come up to town, and sufficient warnings will have been fastened to the wrecks, which is hereby notified.

Signed The Deputies of Navigation.

Notice to Mariners.—Extract from a letter dated St. Petersburgh, 18th February, 1841, addressed to Thomas Cope, Esq., Secretary to the Russia Company, London.

"The hydrographical department of the Ministry of Marine has published that, of the two lighthouses on Felsand, (on the western coast of the island of Vesel,) one built of stone and the other of wood, the latter is so decayed that during the present year 1841, it will be entirely rebuilt; that, in lieu of there being, as hitherto, two fixed lights on this point, the stone lighthouse alone will be lighted; that in every three minutes the light will be visible for two minutes and invisible during one minute. This change will show the difference between the lights on the island of Dago and Swafaat, (on the south-west point of the island of Vesel,) both these being continual lights. At St. Petersburgh the weather continues very steady; a decided thaw has not yet taken place; when the weather changes it is expected to be succeeded by an early spring."

Light-house on the Breakwater, Plymouth.—The foundation-stone of a light-house, to be built on the west end of the Plymouth Breakwater, has been laid.

American Navy.—Our readers will recollect, that during the height of the discussion upon the state of our Navy, the detractors, not content with their endeavours to impress upon all the world the opinion of its decline, never failed to contrast its condition with that of France and of America. The calamitous condition of the French squadron driven for shelter into Palma last month gives a tolerable idea of the state of efficiency in which the ships of that nation are maintained; and the large votes of money to remedy the admitted paucity of their dock-yard material, are sufficient proofs that neither in their effective nor non-effective state do they merit the praise of these vaunting eulogists.

With respect to the United States of America, we learn by the last accounts that so far from their limited fleet being maintained in a state for service, with the exception of the ships in commission, there is scarcely one but what would require extensive repairs, while their fortifications are represented as in a deplorable state of dilapidation.

During a debate in the House of Representates on the 25th of February, on the subject of extending the vote for Naval appropriation from one million and a half to two million dollars, Mr. Thompson observed, "The condition of the Navy is one of ruin and dilapidation. He would state but one fact, and if the Secretary and all the officers should contradict it, he would assert it still, for he knew it to be true. When the French squadron were blockading the whole coast of Brazil, and the interests of the American merchants then required support and defence, a small ship was sent to New York for Commodore Ridgeley; but when she was about to sail she was found so rotten as not to be seaworthy, and we had no other ship afloat that could go; and in this urgent and pressing state of circumstances we had to wait, to leave our commerce unprotected for months, till at last a little sloop was found and sent."

The fact is, that both now and heretofore the *extent* of the Naval force of America has been greatly overrated. They maintain a few ships in good condition, but their ability to extend their force, even to double it, is very questionable; and of the ships that appear in their list, many are, we are assured, unfit for sea, until repaired, and not a few of such defective qualities as not to be worth repairing. In case of war it will be long ere the United States of America fits out a fleet of ships-of-the-line, and their operations will most probably be confined, as formerly, to single cruizers, and these will, of course, be perfectly and efficiently equipped. The means of blockading are, however, rendered more sure and easy since the introduction of steam navigation; and in the face of steam-vessels incessantly on the watch it will be difficult for their ships to escape, more particularly as all the ports of the United States are beset by bars, only passable at certain seasons. The following has been put forth as the distribution of the American Navy at the present time.

The United States has sixty-eight vessels of war, including those on the stocks, thirty-three of which are in active service, viz., one ship-of-the-line, five frigates, thirteen sloops, four brigs, seven schooners, two coast-steamers, and one store-ship. They are distributed as follows:—

Mediterranean—1 line-of-battle ship, 1 frigate, 2 sloops; West Indies—1 frigate, 1 sloop; Brazils—1 frigate, 3 sloops, 1 schooner; Pacific—1 frigate, 3 sloops; Coast of Africa—2 brigantines, 1 schooner; Coast of Florida—3 schooners; Atlantic Coast—2 schooners; Surveying—1 brig; Exploring—2 sloops, 1 brig, 1 schooner. Two fine steam-frigates are building at the Brooklyn and Philadelphia Navy-yards; the former to be armed with eight ten-inch Paixhan guns.—*Naval and Military Gazette.*

Magicienne.—The French frigate Magicienne, of 40 guns, has been wrecked on the Bombay Shoal, in the Palawan Passage, on her way to Manilla. Her crew was saved by the English ships Mysore and Clifford, and the French vessel Favourite. The French corvette Danaide had started for the wreck, with a view to save all she could from it.

Liberation of Slaves.—In the early part of December last, her Majesty's brig Termagant, Lieut. Seagram, commander, arrived at Sierra Leone, having on board 104 Africans. As the circumstances under which Lieut. Seagram became possessed of those persons are rather singular and interesting, I venture to send you an account of them, in case they should be sufficiently so to merit a place in your valuable Journal. Theodore Carrot, (an Italian) has been several years settled at New Sesters on the Grain Coast as a slave trader. He is understood to be, (or rather to have been) the agent or partner of the notorious Pedro Blanco, formerly of the Gallinas. His slave-dealing transactions were very extensive, and he followed up his iniquitous calling with much diligence and success. On the 5th of December, while the Termagant lay at anchor off New Sesters, Signor Carrot voluntarily gave up to Lieut. Seagram the Africans above-mentioned for emancipation at Sierra Leone. He stated as his motive for conduct so very unaccountable on the part of a slave trader, that he was quite disgusted with slave dealings, and was anxious to enter on a more reputable mode of life, and as an earnest of the sincerity of his expressed desire, he not only voluntarily gave up the persons above alluded to, whom he had purchased for exportation, but also gave information of three vessels which he shortly expected from the Havana. The information thus voluntarily communicated was afterwards found to be quite correct, and has since led to the capture by her Majesty's brig Saracen of two of the vessels, the third narrowly escaped capture; she was chased by the Wanderer, Capt. Denman, and was lost sight of at nightfall. Signor Carrot represented her as being the brig Scorpion, and stated that she had been taken to Sierra Leone as a prize in 1835, under the name of El Volador. It is understood that Carrot has made application to the local government of this colony, stating that he has finally given up slave-dealing, and that he is desirous of being allowed to settle as an honest man and merchant at Sierra Leone. There are different opinions entertained of the propriety of compliance with such a request, from such a quarter; many enlightened persons are however of opinion that it might very safely be complied with, as by the provisions of the "Alien Act" his removal could be easily accomplished, should his conduct at any time render that measure desirable or expedient. Carrot is said to have made certain disclosures which, coupled with information derived from books and papers found at the Gallinas, are likely to prove important matters for investigation by the Commissioner, Dr. Madden, who was daily expected.

LAW DECISIONS.

The Countess of Durham.—*Collision.*—This case occurred in Havre Roads, in which the schooner Johns was run foul of by the schooner Countess of Durham. The court pronounced for the damage consequent on the collision.

The Premier.—*Salvage.*—A claim for salvage services rendered by three smacks to a collier brig from Seaham to London, that got upon the west Barrow Sands, a soft shoal in the mouth of the Thames, on the night between the 19th and 20th of June last, owing to the fore-tackle getting foul of the tiller. The tender made was held by the court to be sufficient, but with reference to the value of the property to be 1,700*l.*, so ample as not to call for costs,—no costs allowed.

The Jay.—*Collision.*—In this case the Anne, on her voyage from Stockton to London with coals; and the Jay, bound from London to North Shields, in ballast, in the night of the 21st of April came in collision, about seven miles to the northward of Cromer. Dr. Lushington pronounced for the claim of the Anne, observing, that where it is evident that a collision must take place, it is the duty of a vessel to take every means by backing the sails, or otherwise of at least rendering the collision less mischievous.

The David Luckie.—This was an appeal from an award of the Commissioners of the Cinque Ports, under the statute 1 and 2 George IV., c. 76. The vessel, the David Luckie, having met with tempestuous weather, got upon a sand, sprung a leak, and parted with a bower anchor and chain,—reached Dungeness, where she was boarded by a Deal pilot, and also by a Deal boat. The former understanding that the vessel had lost an anchor, insisted that a fresh anchor and cable should be procured, alledging a regulation of Lloyd's, which required that there should be three anchors, and a certain length of cable on board such a vessel. The master at length authorized the Deal boatmen to proceed to Deal, and procure an anchor and chain, and the latter (ten men,) conveyed an anchor of 19 cwt. on board the David Luckie, which had then reached Margate roads. For this service, which lasted from four or five o'clock in the afternoon of the 25th of May, to ten o'clock in the morning of the following day,—the Commissioners at Deal have awarded 95*l.* Dr. Lushington was of opinion, that as the vessel was in no distress at the time, the service was not a salvage service, and that a reward of 95*l.* *pro opere et labore* for ten persons, during such a period of time was extravagant. Where an award slightly exceeded what this court might have been disposed to give, he should be indisposed to disturb the award of the Commissioners; but where he thought they had grossly erred, a court of appeal could be of no use unless it interfered. He should allot 65*l.* instead of 95*l.*, he thought the former sum, the utmost the parties were entitled to, and such as the mercantile service ought to pay, unless an undue sacrifice was exacted from them. He gave no costs, as he was pronouncing against the judgment of the Commissioners, but he entertained a very strong opinion as to the excess of the award.

The Neptune.—*Collision.*—The Marmion was run foul of on the 8th Dec. 1839, receiving considerable injury:—the question was whether the Neptune was the vessel that run foul of her. The court decided the identity was not proved, and dismissed the Neptune.

Theodor Heinrich.—*Salvage.*—This was a question as to salvage remuneration to be awarded to Lieut. Haines, his officers, and the crew of her Majesty's revenue cutter Defence, and the crew of the pilot-yawl Chance, of Aldborough, for services rendered to the Russian bark Theodor Heinrich, of 230 tons, from Odessa to Riga, with a cargo of oats. She had sailed on the 27th of August, and having experienced severe weather, arrived on the 13th of November off Orfordness, but being unable to obtain a regular pilot, ran first to the Downs, but being driven thence by stress of weather, with loss of anchor, and having sprung a leak, the master was proceeding along the Suffolk coast, and on the 14th, when ten miles off Dunwich, the vessel was fallen in with by the cutter, and shortly after by the Chance. A pilot was put on board the foreign vessel from the cutter, and, with the assistance of the cutter and yawl, which put a cable on board with eight of her men, the Theodor Heinrich was carried into the harbour of Harwich. There was much conflict in the affidavits as to whether or not the yawls' men obtruded their services against the will of the master. A tender of 200*l.* was made for the services of both sets of salvors, which was rejected as inadequate. The value of the vessel, cargo, and freight, was 2,700*l.*

Dr. Lushington, in the first place, held that the tender was not a legal one, being conditional that the yawl's men should be paid thereout for their services by the other salvors. He was of opinion that a meritorious service had been performed, and he awarded 300*l.*

The James.—*Salvage.*—This was a claim for remuneration for salvage services rendered to the James, a brig bound from Labrador to Poole, which, on entering Studland Bay, in the night of the 29th of November, by mistaking a vessel at anchor for a pilot-boat, ran on the Long Ball sand. The question was, whether the vessel came off the sand by the rising of the tide merely, or

by the help of the salvors in heaving upon anchors and warps. The value of the property salved was 1,500*l.* A tender had been made of 20*l.*

After hearing Dr. Addams and Dr. Robertson, for the salvors, and Dr. Nicholl and Dr. Robertson for the owners,

Dr. Lushington thought the tender insufficient, and decreed 60*l.* with costs.

The Sophie.—*Salvage.*—This was a Swedish vessel, which, on a voyage to Honfleur, with a cargo of deals, got upon the Kentish Knock on the 13th of December, and was abandoned by the master and crew.

The court taking the value of the property at 250*l.*, allotted 80*l.* to the salvors.

The Hunter.—*Salvage.*—This was a case of salvage service rendered by two smacks to a vessel which had been sold, and the proceeds were almost absorbed by the charges. A tender of 30*l.* had been made, and the court allotted 50*l.*

The Mary.—*Salvage.*—In this case, the Mary, a vessel of 95 tons, with a cargo of copper, on her voyage from Swansea to Rouen, having met with very stormy weather, and lost both her masts and bowsprit, on the 21st of November, the day after she sailed, endeavoured to enter the harbour of Ilfracombe, but not succeeding, she anchored 150 fathoms without the harbour. he salvors, in five boats, went to her assistance, and notwithstanding the state of the weather, brought her into the harbour. The value of ship, cargo, and freight, was 9,880*l.*

The Queen's advocate, (with whom was Dr. Robinson,) for the salvors, contended, that the service rendered was of the highest salvage character, including peril of life, as well as skill and promptitude, and deserved to be rewarded liberally.

Dr. Addams (with whom was Dr. Robertson,) argued that the salvors had derogated from their original merit, by endeavouring to induce the master and crew to leave the vessel, in order that it might be represented as derelict, and improperly shipping the anchor, and if they had not forfeited all claim for reward, they should be recompensed very moderately. If the vessel had actually gone upon the rocks, the cargo, the most valuable part of the property, would have been saved.

Dr. Lushington was of opinion, that the vessel had been in a disabled condition; that the salvors had rendered a most meritorious service, at the risk of their lives, and had not acted in opposition to the wishes of the master. He should allot to them a reward of 700*l.*

The Dryad—*Destruction of a Ship.*—We gave the general outline of this iniquitous case in our number for January last (p. 17). This will afford our readers a sufficient view of it, and the result of the trial which has since taken place proves the correctness of Sir P. Laurie's opinion of the case, as being one in which no bail could be taken. The result is contained in the following, delivered by the Lord Chief Justice on summing up the case to the jury.

The Lord Chief Justice having recapitulated the whole of the evidence, said that upon it they must be satisfied that the captain, with the intention of defrauding the underwriters, wilfully cast away the ship; secondly, they must be satisfied the goods insured never had been shipped; and lastly, they must be satisfied that a concert and scheme existed in London, in which the prisoner was a party concerned, and that by his aid that wicked scheme was carried into effect. If, on the whole of the evidence, they felt any reasonable ground for doubt that neither of these points had been established, then they would acquit the prisoner. If, however, they were satisfied upon those three points, then it would be their duty, however painful, to convict the prisoner. The question was one of mere fact, which the jury must take into their own hands.

After a short delay the jury expressed a wish to retire, and accordingly, at a quarter to seven, they were ushered out of court by an officer. On their return into court, at half-past eight o'clock, they delivered a verdict of "Guilty."

Michael Shaw Stewart Wallace and Patrick Maxwell Stewart Wallace have in consequence been transported for life. We congratulate the Merchant Service in general on this riddance. It is said that a true bill was also found against these persons for being concerned in the destruction of the ship Delta, four years ago.

However, the case as we said before is no solitary instance, and our tables of wrecks amounting in our present number to about 57, afford ample matter for speculation! The means are easy: to incompetence in masters there are ample rocks known and unknown to run ships against with currents in their favour, and to competence in masters there are on the other hand, all the secret labyrinths of insurance, for working in when required, to the end that the Wallaces have done. Here is some more of their handy work.

Loss of the Lucy.—The following is a copy of a letter received at Lloyd's, respecting the loss of the Lucy, to which we yesterday referred, dated British Consulate, Boa Vista, Cape de Verds, Dec. 16th, 1840:—

"Sir.—I take leave to report, for the information of the committee at Lloyd's, that the brig Lucy, Houston Wallace, master, of and from Liverpool, bound to Valparaiso, with a cargo of coals, was wrecked on the east point of the island of Sal, on the night of the 9th inst., and has become a total loss.

"No lives were lost, but the crew have suffered by contusions in getting on shore, and are in a destitute state, from not being able to save their clothes.

"Captain Wallace has been furnished with every paper necessary *to show the loss he has experienced*, and proceeds to England by this opportunity.

"I have the honor, &c.,

(Signed) "John Rendall, *H.B.M. Consul.*"

"*To W. Dobson, Esq., agent for Lloyd's.*"

"It will be seen that our Bristol correspondent reports the arrival at that port of the Margaret, England, from Cape de Verd, having on board the master of the Lucy. We have since learnt that Mr. Wallace is in custody, and upon his person were found a protest of the loss, and all the papers necessary to establish a claim upon the underwriters."—*Shipping Gazette.*

Mr. Wallace however it appears was not in custody by the following advertisement.

"Ship Lucy.—*Felony.*—100*l. Reward.*—Whereas Houston Wallace, shipowner and master mariner, late captain of the brig Lucy, bound from Bristol and Llanelly to Valparaiso, in the month of November last, and which was wrecked on the island of Sal, one of the Cape de Verde islands, in the month of December last, stands charged with felony, for having wilfully destroyed the said ship Lucy, on her said voyage, for the purpose of defrauding the Insurance Companies, or Underwriters, who had effected insurances by the said vessel; —A reward of 100*l.* will be paid to any person who will lodge him in any of her Majesty's gaols, upon application to the General Maritime Assurance Company's Office, 30, Cornhill, London.

The said Houston Wallace is about five feet nine inches high, rather spare form, age about twenty-eight years, florid complexion, brown hair and hazle eyes, had no whiskers when he left England, good teeth, stoops, Scotch dialect, and a sea-faring man in appearance."

We leave this for the comment of our readers, while we congratulate the merchant service on the discovery of these pests of honest men.

NEW BOOKS.

The Naval Surgeon.—*By the Author of Cavendish, &c.—In three volumes. Colburn, London.*

The author concludes his work with the following apothegms.—"Are we

unfortunate? From the trials and successes of others we may learn endurance, and gather hope for our own.—Are we prosperous? Let us be reminded by the unprovoked sorrows of our neighbours, that calamity is not always restricted to the vicious!—Do we suffer under unmerited reproach? Patience and innocence will bring us through at the end. Are we given to suspicion and a sanguine readiness to condemn? There is no cheat more injurious than he who cheats himself, and the most patient investigator may be misled even by facts." Had our author predetermined to illustrate the foregoing, he could not possibly have succeeded in doing so more completely than by stringing together as he has done, a collection of extraordinary and interesting events. The Naval Surgeon sees service of all kinds, and far more than falls to the lot of half the surgeons of the Navy. Hence his narrative abounds with more than common interest.

TWO YEARS BEFORE THE MAST.—*A personal narrative of Life at Sea. London, Edward Moxon, Dover-street.*

We are informed that this is a re-print of a recent American volume, made with a view of placing a few matters of fact relating to the American merchant service, in the hands of British seamen; and it is with considerable gratification we have learnt that it now forms one of the volumes of the Naval libraries of our men-of-war. The beneficial effect that it will produce will be great, for it is most important that the truths which it contains of the disgusting and brutal treatment to which the American merchant seaman is exposed, should be thoroughly understood by the British seaman. We shall take an early opportunity of assisting in this good work for the benefit of our own merchant seamen, and are glad to find that the work is on the eve of a second edition.

REMARKS ON THE MANNER OF FITTING BOATS *for ships-of-war and transports, &c. By John Cow, of her Majesty's dockyard, Woolwich.*

We are glad to see a new edition of Mr. Cow's useful little work make its appearance, and recommend it to the particular attention of our Naval readers.

SIX MONTHS WITH THE CHINESE EXPEDITION, *or leaves from a soldier's note book.—By Lord Jocelyn.*

The office of late military secretary to the Chinese expedition, has afforded Lord Jocelyn the opportunity of throwing together a few notes, which the leisure of a voyage home has enabled him to do, and which give a general and correct view of the all engrossing subject of Chinese affairs. We recommend them to the attention of those who wish to inform themselves on the subject.

THE YEAR-BOOK OF FACTS, *in science and art.—London.—Tilt, Fleet-street.*

A very useful collection of the most important discoveries and improvements of the past year, illustrated with engravings, shewing the progress of discovery in science and art, preserved for easy reference,—such a work must always be useful.

NEW CHARTS.

(*Published by the Admiralty.*)

SOUTH AMERICA.—*West Coast.—Sheet* 3.

From the Gulf of Penas to the Guaytecas islands, or latitude 47° to 43° 50′.

Ditto—*West Coast.—Sheet* 4.—*Chile.*

From the Guaytecas islands to point St. Antonio, or latitude 44° to 40° 48′.

SOUTH AMERICA.—*West Coast.—Sheet* 5.—*Chile.*
From Point St. Antonio to Point Tucapel, or latitude 40° 57′ to 37° 40′.

Ditto—*West Coast.—Sheet* 6.—*Chile.*
From Point Tucapel to Point Lora, or latitude 37° 43′ 34° 30′.

Ditto—*West Coast.—Sheet* 7.—*Chile.*
From Topocalma point to Maytencillo, or latitude 34° 33′ to 31° 17′.

Ditto—*West Coast.—Sheet* 8.—*Chile.*
From Maytencillo to Herradura, or latitude 31° 20′ to 28° 7′.

Ditto—*West Coast.—Sheet* 9.—*Chile and Bolivia.*
From Herradura to Point Grande, or latitude 28° 12′ to 24° 58′.

Ditto—*West Coast.—Sheet* 10.—*Bolivia.*
From Point Grande to Point San Francisco, or latitude 25° 10′ to 21° 56′.

Ditto—*West Coast.—Sheet* 11.—*Bolivia and Peru.*
From Point S. Francisco to Point Lobo, or latitude 22° 0′ to 19° 48′.

Ditto—*West Coast.—Sheet* 12.—*Peru.*
From Point Lobo to Point Pescadores, or latitude 18° 49′ to 16° 23′.

Ditto—*West Coast.—Sheet* 13.—*Peru.*
From Point Pescadores to Yndependencia Bay, or latitude 16° 23′ to 14° 0′.

Ditto—*West Coast.—Sheet* 14.—*Peru.*
From Yndependencia Bay to Begueta Bay, or latitude 14° 13′ to 11° 0′.

Ditto—*West Coast.—Sheet* 15.—*Peru.*
From Begueta Bay to the River Chicama, or latitude 11° 2′ to 7° 50′.

Ditto—*West Coast.—Sheet* 16.—*Peru.*
From Chicama river to Port Payta, or latitude 8° to 4° 47′.

We have enumerated above the *Charts* of Capt. Fitz-Roy, which with those noticed in our last, form the series including the South American coast,—the plans and detached charts of parts in the Pacific Ocean we shall reserve for our next, with our remarks thereon. In our volume for 1836, we noticed the first two of the series of the West Coast, the work of Capt, King, which Captain Fitz-Roy, in the Beagle, has thus continued to the northward.

BIOGRAPHICAL MEMOIRS.

ADMIRAL CHARLES WILLIAM PATERSON, alluded to in our Obituary, was born in 1756, and at the early age of nine he entered the service under his relative, Captain the last Earl of Marchmont. In 1777 he was made Lieutenant, and served in America during the whole of the war between that colony and the mother country, under Lord Howe; becoming a Master and Commander in 1782. In this period of his life he assisted at the reduction of Long Island, and the capture of New York; in the expeditions up the North and East Rivers, at the taking of Philadelphia, and subsequently at the capture of St. Eustatia in the West Indies. On the breaking out of the French Revolution, he was posted by Lord Hood, at the occupation of Toulon, and the subsequent destruction of the French fleet, in that arsenal, and then assisted at the reduction of Corsica, under the gallant Lord (then Commodore) Nelson. During the continuance of that war, Captain Paterson commanded successively the Gorgon, Ariadne, Melpomene, Admiral de Vries, Montague, and St. Fiorenzo, and in the latter ship, for two seasons, had the honour of specially attending on George the 3rd, on his customary summer visits to the sea side, at Weymouth. At the peace of Amiens, he went into retirement. In 1810, the gallant deceased was appointed

to the important charge of Portchester Castle, then the depot place of confinement of many thousands of French prisoners; and in 1811, he took the command of the Puissant, at Spithead, till he attained his flag in 1812, since which he has not been called on to serve. He leaves a widow, with two sons, both in the service, and a daughter, married to the eldest son of Sir W. Wiseman, Bart., to lament the loss of a kind husband and affectionate father.

Capt. G. Gosling, rn., of our Obituary, was midshipman of the Ganges, at Copenhagen, 1807, and in the York in 1839, assisted at the reduction of Martinique. When Lieutenant of the Milford, assisted at the surrender of the principal ports and islands of the coast of Dalmatia, and when in the Havana was actively engaged of a convoy at Vasto, and in the reduction of the strong fortress of Zara. At Guadaloupe commanded the Muros sloop. Subsequently he commanded the Ontario against the pirates on the coast of Cuba. In 1809 he was made lieutenant, commander in 1815, and captain in 1825.

Mr. Henry Tracey, Assistant-Surgeon, alluded to in our Obituary, was carried off by a severe attack of dysentery, while attending, with his usual kindness and assiduity, such of the crew of H.M.S. Melville, as had from the ill state of their health been sent to the Victoria, (transport,) during the time of her heaving down. He was followed to his final resting place, on an island in the anchorage, by many, whose experience of his private and professional merit, both on the Cape of Good Hope and other stations, will render his loss a lasting source of melancholy reflection.

Admiralty Orders.

(Continued from p. 212.)

Admiralty, Feb. 10th, 1841.

My Lords Commissioners of the Admiralty are pleased to direct, that no Mate shall be allowed Half-pay without having been previously surveyed and reported unfit by the Inspector-General, or the Officers of one of the Naval Hospitals at home. The Medical Officers are, therefore, to report particularly in each case the probable period at which the Invalid may be again fit for employment; and at the expiration of such period, the mate is to report himself to their Lordships, in order that if he should state himself to be still unable to serve, proper measures may be taken to ascertain his continued unfitness; after which should he be declared fit for employment and still withhold services, his Half-Pay is to be respited.

Mates who may apply for the retiring pension of two shillings and sixpence a day after twenty years actual service, will not be re-admitted after having accepted such Pension.

By command of their Lordships,
R. More O'Ferrall.

Promotions and Appointments.

(From the Naval and Military Gazette.)

PROMOTIONS.

Captains—J. Robb, and T. M. C. Symonds.

Commanders—T. Graves, H. Broadhead, A. W. Jerningham, G. G. Otway, and H. W. Hill.

Lieutenants—J. R. Rodd, A. J. Woodly, J. F. Warre, G. L. Norcock, J. P. Thurburn, T. E. Symonds, P. Somerville, R. Ellis, R. J. Rouse, C. Moore, H. Probyn, J. Dirom, and E. M. Matthews.

APPOINTMENTS.

Captains—R. F. Stopford (1840) to *Talbot*, v. H. J Codrington, cb., (1836) to *Queen*. F. Bullock (1838) to *Fearless* steam-vessel for surveying service.

Commanders—C. Keele (1826) to *Rover*, v. T. W. C. Symonds, promoted. J. Washington (1833) to *Shearwater*, s.v. for surveying service. J. L. Wynn, (1825) to *Royal Sovereign* yacht for service at Port Patrick. T. Graves (1841) to command *Beacon*.

Lieutenants—P. A. Helpman (1839) to command the hired armed ship, *Mahomed Shaw*, attached to the China expedition. E. M. Matthews (1840) to *Blenheim*. F. W. Austen (1839) to command *Bonetta*. J. Oxenham (1826) to command *Cockatrice*. R. Maguire (1840) to *Vernon*. J. Evans, *b* (1826) to command *Polyphemus*. W. Whitfield (1819) to *Ocean* for Sheerness Ordinary. R. D. White (1840) to *Implacable*.

Mates—F. P. Porteus (1834) to *Cale-*

donia. A. J. Lindsay (1836) to *Iris.* S. F. Douglas to *Excellent.* T. Davies (1826) to *Excellent* from *Ganges.* T. Anson to *Indus.* C. H. Young (1839) to *Monarch.*

MIDSHIPMEN—C. W. Elton to *Cambridge.* C. Compton to *Excellent.* W. G. Douglas to *Queen.*

SECOND-MASTERS—W. H. Belliston to *San Josef* from *Queen.* J. Goss to *Impregnable.* R. J. Rundle to *Polyphemus* from *San Josef.*

MASTER'S-ASSISTANT—C. Grigg to *Endymion.* J. Matthews to *Polyphemus.*

SURGEONS—A. Sinclair, (1829) MD., to *Asia* convict-ship. A. M'Kechnie, (1830) MD., to *Layton* do. T. R. Dunn, (1835) MD., to *Waverley* do. J. Donovan, (1835) MD., to *Rajah* do. T. Robertson to *Andromache.* J. M'Ilroy, MD., (1839) to *Persian,* v. Salmon, warrant cancelled.

ASSISTANT-SURGEONS—W. T. Alexander to *Caledonia.* G. F. Rowe (1825) to Melville Hospital.

CLERKS—W. B. Pearce (in charge) to *Locust.* Ozzard to *Powerful.* Eales to *Wasp.*

VOL. 1ST CLASS—J. Miller and W. B. Mason to *Inconstant.*

Mr. F. Clifton is appointed Naval Storekeeper of Malta Dock-yard.

Royal Marines—Artillery—1st Lieut. A. Savage to *Excellent,* v. T. Hollaway to Head-quarters.

Coast-Guard—Lieut. R. E. Bullen, (1830) to be Chief Officer.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ASIA, Capt. W. Fisher, 17th March arr. at Spithead.

Should no extraordinary despatch be required in sending the Indus, Monarch, and Vernon, (each a few men short of complement) to sea, it is generally supposed that the London will be commissioned to receive such of the "Asia's" as may volunteer another tour of service in their present ratings. This noble ship has been in commission five years, and for discipline and efficiency, particularly the essential point of gunnery, might challenge comparison with any vessel in the British Navy, or in the world. She has ever been what is called a comfortable ship, the officers and men pulling together with mutual esteem and respect. Few of this fine crew will, we imagine, be inclined to encounter the over-work and ill-treatment of the merchant service for a few shillings more pay, after experiencing the comforts and advantages of a man-of-war, when discipline is maintained without severity, and every man who performs his duty sure to be respected and encouraged.

COCKATRICE, Lieut. J. Oxenham, commissioned at Chatham.

INDUS, 84, Capt. Sir J. Stirling, 6th March moved out of harbour to Spithead.

PIQUE, 36, Capt. Boxer, 17th March arrived at Spithead, 18th sailed for Chatham.

Notwithstanding th at the Pique is jury-rigged, she has beat every vessel she has contended against, (including the Asia,) on or off the wind, in weathering or forereaching. She has no defects except those caused by the fall of the masts, and is expected to be ready for sea again in a month, or less if required.—Naval and Military Gazette.

SALAMANDER, (st. v.) 16th March arr. at Portsmouth.

SATELLITE, 18, Com. J. Robb, 23rd Feb. paid off,—crew transferred.

TWEED, 20, Com. H. S. C. Douglas, 6th March moved out of harbour to Spithead.

VERNON, 50, Capt Hon. W. Walpole, 10th March moved to the Nore, 16th arr. at Portsmouth.

VOLCANO, (st. v.) Lieut. Com. C. Smith, 15th Feb. arr. at Plymouth from West Indies, 28th at Woolwich to pay off.

AT PORTSMOUTH—*In harbour*—Queen, Victory, Excellent, Royal George, Salamander, Avon and Echo.—*At Spithead*—Indus, Asia, Vernon, Pique, Tweed, Pelican, Nautilus.

AT PLYMOUTH—*In harbour*—Caledonia, San Josef, Diligence, and Carron. *In the Sound*—Impregnable, Belleisle, Iris.

ABROAD.

The wreck of HM. brig Spey, (see p. 135,) has been got off by the Cleopatra, making very little water, and taken to Nassau, New Providence, to repair, &c.

ACTAEON, 26, Capt. R. Russel, 29th of Dec. at Panama.

ASIA, 84, Capt. W. Fisher, 28th Feb., at Gibraltar on way home.

ATHOL, 28, (tr. s.) Mas. Com. C. P. Bellamy, 27th Feb. at Malta.

BASILISK, 6, Lieut. Com. J. C. Gill, 4th Nov. at Valparaiso.

BEACON, (s. v.) Lieut. T. Graves, 21st Feb. left Malta to survey Graham Shoal.

BENBOW, 72, Capt. H. Stewart, Feb. at Beyrout.

BLENHEIM, 72, Capt. Sir H. F. Senhouse, K.C.H., 20th Nov. arrived at Canton from Chusan.

BRITANNIA, 120, Capt. J. Drake, 28th Feb. in Marmorice bay.

CALCUTTA, 84, Capt. Sir J. Roberts, CB., 28th Feb in Marmorice bay.

CAMBRIDGE, 78, Capt. E. Barnard, 28 Feb. in Marmorice bay.

CAMELION, 10, Lieut. Com. G. M. Hunter, 14th Nov. at Buenos Ayres.

CARYSFORT, 26, Capt. H. B. Martin, 6th Feb. left Alexandria for Malta, 15th arrived.

CASTOR, 36, Capt. E. Collier, 28th Feb. in Marmorice bay.

CHARYBDIS, 3, Lieut. Com. E. B. Tinling, 21st Jan. left Jamaica for Lucca.

COMUS, 18, Com. E. Nepean, 3rd Jan. left Belize for Havana and Jamaica, 28th arrived at Jamaica.

CROCODILE, 26, Capt. A. Milne, 21st Jan. arrived at Jamaica from Carthagena, 28th sailed to return.

CURACOA, 24, Com. W. Preston, 14th Nov. at Buenos Ayres.

CYCLOPS, (st. v.) Capt. H. T. Austin, 2nd March arrived at Malta from Marmorice.

CYGNET, 10, Lieut. E. Wilson, Dec. at Cape Coast.

DAPHNE, 18, Com. F. W. Dalling, Feb. at Symrna.

DIDO, 18, Capt. L. Davies, CB., 16th Feb. arrived at Malta from Marmorice—gone to Jaffa.

DOLPHIN, 3, Lieut, E. Littlehales, Dec. at Cape Coast.

EDINBURGH, Capt. W. Henderson, 8th March left Malta for Syracuse and Alexandria.

ELECTRA, 18, Com. E. R. P. Mainwaring. Dec. in Gulf of California.

GRECIAN, 16, Com. W. Smith, 14th Nov. at Buenos Ayres.

HECATE, (st. v.) Com. H. Ward, Feb. at Jaffa.

HERALD, 26, Capt. J. Nias, 21st Nov. arrived at Canton from Sydney and Singapore.

HORNET, 6, Lieut. Com. R. B. Miller, 28th Jan. left Jamaica for Carthagena.

IMPLACABLE, 74, Capt. E. Harvey, 21st Feb. left Malta for Syracuse.

INCONSTANT, 36, Capt. D. Pring, 13th Feb. arrived at Gibraltar, sailed next day for Malta, 23d arrived.

JUPITER, (tr. s.) Mas. Com. R. Fulton, 13th Nov. arrived at Canton.

LIZARD, (st. v.) Lieut. W. G. Estcourt, 26, Feb. arrived at Gibraltar.

MAGICIENNE, 24, Capt. F. F. Michell, Feb. at Acre.

MELVILLE, 72, Capt. Hon. R. P. Dundas, 20th Nov. arrived at Canton from Chusan.

ORESTES, 28, Com. P. S. Hambly, Dec. in Gulf of California.

PHŒNIX, (st. v.) Com. R. Stopford, 4th Feb. arrived at Gibraltar, 7th sailed for Malta.

PILOT, 16, Com. G. Ramsey, 21st Jan. arrived at Jamaica from Carthagena.

PLUTO, (st. v.) Lieut. Com. J. Lunn, 6th March arrived at Lisbon.

POWERFUL, 84, Capt. C. Napier, 28th Feb. in Marmorice Bay.

PRINCESS CHARLOTTE, 104, Capt. A. Fanshawe, 28th Feb. left Marmorice for Malta.

RACER, 16, Com. G. Byng, Jan. on her way to Bermuda.

REVENGE, 76, Capt. Hon. W. Waldegrave, 28th Feb. in Marmorice bay.

RINGDOVE, 16, Com. Hon. K. Stewart, 15th Jan. arrived at Hayti, having captured on the 29th Dec. the Spanish slaver Jesus Maria.

ROSE, 16, Com. P. Christie, 10th Dec. at Rio Janeiro.

ROVER, 18, Com. T. W. C. Symonds, 28th Dec. left Jamaica, 1st Jan. at Havana.

SAPPHIRE, (tr. s.) G. H. Cole, 24th Feb. arrived at Gibraltar from Corfu, on her way to Barbados.

SAPPHO, 16, Com. T. Frazer, 1st Jan. at Havana.

SOUTHAMPTON, Capt. W. Hillyas, 8th Jan. left Rio for River Plata.

SKIPJACK, 5, Lieut. Com. H. Wright, 28th Jan. left Jamaica for Carthagena.

STAG, 46, Com. T. B. Sullivan, CB., 10th Dec. at Rio Janeiro.

STROMBOLI, Com. W. J. Williams, 28th Jan. arrived at Alexandria, 7th Feb. sailed for Syria.

THUNDER, (st. v.) Com. E. Barnett, 1st Jan. at Havana.

THUNDERER, 84, Capt. M. F. F. Berkely, 27th Feb. left Marmorice for Malta.

VANGUARD, 80, Capt. Sir D. Dunn, 28th Feb. in Marmorice Bay.

VESTAL, 26, Capt. T. W. Carter, 3rd Jan. at Belize.

VESUVIUS, (st.) Lieut. Com. W. Blount, Feb. at Jaffa.

VICTOR, Com. W. Dawson, arrived at Tampico, 2nd Feb. from Jamaica, 9th Feb. remained.

VOLAGE, 26, Capt. H. Smith, 14th Nov. left Macao for Manilla, 20th Dec. left Singapore with Rear-Admiral Elliott.

WASP, 16, Com. G. Mansell, 15th Feb. arr. at Malta from Marmorice, 28th Feb. remained, 8th March sailed for Beyrout.

WELLESLEY, 72, Capt. T. Maitland, 20th Nov. arr. at Canton from Chusan.

WIZARD, 10, Lieut. Com. T. F. Brisk, Nov. on way from Rio to Buenos Ayres.

WOLVERINE, 16, Com. W. Tucker, 6th December at Cape Coast.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Portsmouth, the lady of Captain J. W. Montague, of H.M.S. Queen, of a son.

On the 7th of March, the lady of W. Hussey, Esq., of the Middle Temple, and only daughter of Captain Hancock, RN., of the Belvedere, Weymouth, of a daughter.

At Reading, on the 15th Feb. the lady of Captain J. A. Murray, of a son.

At Brownsea, near Poole, on the 8th March, the lady of Lieut. David, RN., of a daughter.

Marriages.

On the 11th of March, at Hambledon, Lieut-Col. Butler, eldest son of Thomas Butler, Esq. of Bury Lodge, to Arabella, eldest daughter of Rear-Admiral Dacres.

At Bath, on the 16th of March, Capt. C. H. Thomas, 11th regt. Bengal Native Infantry, to Leonora Elizabeth, youngest daughter of Capt. Gillmor, R.N.

At Babworth, near East Redford, on the 16th of March, Major Eyre, the 73rd regt., son of the late Vice-Admiral Sir G. Eyre, K.C.B. and G.C.M.G., to Georgina, daughter of the Hon. J. B. Simpson, of Babsworth Hall, Notts.

At Devonport, on the 16th March, Mr. R. L. Jack, Assistant-surgeon, RN., to Mary Anne, eldest daughter of Captain Couch, RN.

At Alverstoke, on the 18th of March, Commander E. P. Charlewood, RN., youngest son of the Rev. C. B. Charlewood, of Oak Hill, Staffordshire, to Sarah Carleton, second daughter of the late W. Willie, Esq., of Kingston Hants.

At Marylebone, Lieut.-Colonel Kerstemans, Essex, to Frances, daughter of the late Rear-Admiral Bingham.

Deaths.

Suddenly, on the 19th Feb. at Ball's Park, Herts, the seat of his son-in-law, Capt. Townshend, Rear-Admiral Lord G. Stuart. His lordship was the youngest son of the late Marquis of Bute by his first marriage, and uncle to the present Marquis. He was born March 1, 1780.

On the 10th of March, Admiral Chas. W. Patterson, at his residence, East Chatham, Hants, at the advanced age of 85 years.

At Ashling House, near Hambledon, on the 15th March, at the advanced age of 89 years, Mary, relict of the late Vice-Admiral Sir T. Surridge.

On the 3d of March, in Chester-street, Grosvenor-place, Ruth Elizabeth, widow of the late Capt. Cuthbert, RN.

Emma, wife of Lieut. Prowse, RN., and third daughter of Capt. Ferris.

At Plymouth, in her 90th year, Mrs. Wolrige, mother of Lieut-Col. Wolrige, RM., and the Captains Wolrige, RN.

On the 25th Sept., on board the Victoria transport, in Chusan anchorage, on the Coast of China, Mr. Henry Tracey, assistant-surgeon of H.M.S. Melville.

On the 24th Feb., at Tonbridge-place, Euston-square, Dr. J. Weir, late senior Medical Commissioner of the Navy.

On board of H.M.S. Vanguard, in Marmorice Bay, from accidentally falling down the hatchway, Lieut. Wemyss, RN.

At Southsea, aged 74, R. Scott, Esq., son of the late Rev. J. Scott, formerly Chaplain RN.

On the 14th of March, at Elton-hall, Herefordshire, in her 67th year, Elizabeth, widow of the late Capt. J. Baker, RN.

On the 12th of March, suddenly, at Bishop's Morchard, Lieut. W. Downey, RN.

At Falkirk, on the 26th of February, Mr. J. Schawe, surgeon RN. (1799).

At Kingston Cross on the 12th March, Mr. J. Chapman, RN., in his 77th year.

At Woodvale, Cowes, Frances Ann, only daughter of Capt. Ffarington, RN., aged 19 years.

At Mile-end, Lieut. R. Brash, RN., aged 56 years.

At Barbados, on the 16th of January, Mr. Alexander Thompson, commanding the steamer Columbia.

On the 17th of March, Lieut. A. B. Evans, RN., aged 56 years.

On the 13th of March, on board the Dreadnought Hospital ship, Mr. Martin Hatherley, boatswain of that establishment, aged 49, after 19 years of faithful servitude.

At Bath, Capt. G. Gosling, RN,

On the 14th of March, J. B. Maddox, Esq. of the Coast Guard Service, son-in-law of Lieut. De Montmorency, RN. of Greenwich Hospital.

METEOROLOGICAL REGISTER.

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

From the 21st of February, to the 20th of March, 1841.

Month Day	Week Day.	Barometer.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P.M.
		In Dec.	In Dec	o	o	o	o						
21	Su.	30·18	30·22	43	48	41	49	N	N	2	2	bc	bc
22	M.	30·36	30·38	38	41	32	42	N	N	1	1	of	o
23	Tu.	30·34	30·30	37	39	36	40	E	E	1	3	bc	o
24	W.	30·31	30·30	33	36	31	38	NE	NE	3	4	o	o
25	Th.	30·30	30·21	38	41	35	42	NE	N	5	4	o	bc
26	F.	29·86	29·76	42	40	37	46	N	NW	4	7	or (2)	qop (4)
27	S.	29·74	29·79	37	41	34	42	N	N	6	3	qpsr(1)(2	bcphr (3)
28	Su.	29·85	29·81	35	40	31	41	NW	NW	3	2	b	bc
1	M.	29·61	29·64	38	40	33	42	SE	S	2	2	bc	od (3)
2	Tu.	29·69	29·55	36	40	29	46	SW	SW	3	4	o	or (3) (4)
3	W.	29·33	29·43	41	45	37	46	W	NW	4	4	bc	bc
4	Th.	29·90	29·87	33	44	30	45	NW	W	2	2	b	b
5	F.	29·85	29·62	38	44	35	48	SW	S	2	6	bc	qor (3)
6	S.	29·75	29·88	40	50	36	51	W	W	2	2	bm	bc
7	Su.	30·06	30·13	50	58	41	59	SW	SW	3	3	bc	bc
8	M.	30·40	30·39	50	59	45	60	SW	SW	1	2	od 2)	bc
9	Tu.	30·43	30·41	43	58	37	59	W	S	2	3	b	bc
10	W.	30·46	30·44	43	58	35	59	N	SW	2	2	bc	bc
11	Th.	30·49	30·45	37	60	31	61	N	SE	1	1	b	b
12	F.	30·37	30·34	42	61	33	62	W	SW	1	2	bm	b
13	S.	30·36	30·38	43	56	36	57	SW	NE	2	2	b	bc
14	Su	30·37	30·29	39	55	37	56	E	E	2	2	bc	b
15	M.	30·16	30·08	41	63	32	64	E	SW	2	2	bm	b
16	Tu	29·94	29·84	46	63	34	64	E	S	2	3	b	b
17	W.	29·63	29·61	51	53	44	55	SW	SW	6	5	qor (2	qbcp (3)
18	Th.	29·42	29·52	50	53	40	54	SW	SW	5	8	qop (2)	qbc
19	F.	29·61	29·62	48	51	40	53	SW	SW	6	9	qbc	qbcp (3
20	S.	29·61	29·62	49	43	38	56	SW	S	5	7	bc	qop (3

FEBRUARY—Mean height of the barometer = 29·777 inches : mean temperature = 35·2 degrees : depth of Rain fallen = 0·98 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

We are much obliged to ARGO for his watchful care—the subject is likely to be a tedious one. We shall, however, not let it pass unattended to.

Mr. WALKER's letter in our next.

A SUBSCRIBER's lines we have no room for at present.

The letter on the Foundering of Merchant Vessels will appear in a future number.

We are indebted to a friend for the BOMBAY SUMMARY, and shall be glad to hear from him in the same way again.

We have only left ourselves sufficient room to recommend to the especial attention of our *Naval readers*, and those who make *long voyages*, the Patent *Preserved* Potato of Messrs. Edwards and Co., which is found fit for use in any climate, and after the longest voyage. Thus the luxury of a fresh vegetable of the cheapest kind, only to be appreciated by those who know what is hard sea fare, is secured for their tables at all times, and at the same price as when new!

Remarks on the Cape Bianco Shoal, and the Passage between it and Paxo.

The latitude of Cape Bianco is 39° 21′ 21″ N., and the Lacca light on the north-west part of the Island of Paxo bears from Cape Bianco S. 5° 14′ E. true, distant about eight and one-fifth miles.

Ships coming from the westward for the south channel of Corfu between Corfu and Paxo should keep mid-channel to avoid the dangerous shoal extending from Cape Bianco. A black buoy is placed on its south extremity in ten fathoms, mud and sand, it bears from Cape Bianco S. 48° 30′ E. true, nearly two miles and a half; and another on its eastern extremity in nine fathoms hard sand which bears S. 84° E. true, from Cape Bianco about two miles and a quarter; and from the Lacca light N. 10° E. true: therefore by keeping the Lacca light (which is easily seen at ten to fifteen miles) to the westward of S.S.W.½W., (S. 13° W. true,) until you bring Cape Bianco west: (S. 77° W. true) it will clear you of the shoal, when you may steer to the northward, or shape a course N.b.W. until you see the Alefkimo light vessel. Avoid passing nearer than three-quarters of a mile south-east of the Alefkimo light, where a spit of mud runs out, after which the channel to the northward is quite clear. The Gayo light at the entrance of the Port of Paxo was intended to have been used as the clearing mark for the east part of the Cape Bianco shoal. I have often been there when we could not see it in the least, being such a bad light; but the Lacca light answers every purpose. In the case of a southerly wind, and not fetching the south end of Corfu be careful in standing in towards Cape Bianco to the westward. You should not go nearer the Cape than two miles, as there are patches of rocks extending above a mile off shore, with only six feet water, and the soundings are not regular enough to warn you.

The whole of the shoal extending from Cape Bianco is irregular. Within half a mile of the south buoy we found four and three-quarter fathoms; and by chance you may find less, which makes it quite unsafe passing inside the buoys with a vessel of any draught: but you may anchor, if necessary, between the two buoys in from ten to twelve fathoms sand and mud, or to the south-east of the buoys where the shoal continues with regular soundings: another place with Cape Bianco W.b.N., and the East Buoy S.S.W. in eleven to thirteen fathoms is a good berth.

Anchorage of Salona.

On entering the bay of Salona, you should keep over to the eastern shore, as a shoal is reported to exist midway or near about, where H.M.S. Raleigh run on shore some years since; we had not the bearings of the positions, or would have looked particularly for it, to have inserted it in the survey. Although we ran over a great part of the bay,—no bottom twenty-five fathoms, yet nothing was observed, nor could we gain any information relative to its existence from any person at Galaxidi. On closing the eastern shore you may steer up, just passing to the eastward of the smallest island of the seven, and then shape a course mid-

way between the two northernmost islands and the low point forming the west end of a bay, inside of which bay is the custom-house of Salona; should you not be able to go to the eastward of the two islands, do not attempt to go between them, as they are connected by a reef, but run to the southward of the two islands, and steer in for the point which trends to the eastward, where you have a clear passage inshore of the islands up to the anchorage. We anchored in thirteen fathoms (mud,) —custom house north-east, the low sandy point E.b.N., and the east part of the bay of Salona S.b.E. $\frac{3}{4}$ E.: and you may anchor where ever you please within the two small islands, but small vessels may go inside the low point, where there is good anchorage from nine to thirteen fathoms, with good holding ground, perfectly land-locked. The tide at Salona is remarkable for its quickness in rising: we were there the day after the full moon, when it commenced rising at two hours, and in a quarter of an hour it had risen a foot: it continued to rise a little more than two feet. Latitude of the low point by two observers 38° 26′ 4″; at present there is only a custom-house, and two or three stores at the place, but a new city is to be built on the low point; in fact, a few houses are building: nothing to be procured in way of provisions, and the anchorage is excessively hot and sultry.

Anchorage off Corinth.

The bay of Corinth has already been surveyed by Captain Copeland, which is very good, as far as we had an opportunity of observing. We anchored off shore about two cables, with the Acropolis in line with the centre of the town S.S.W. $\frac{1}{4}$ W., western extreme of the bay N.W. $\frac{3}{4}$ N., and Point Melangeri N. $\frac{1}{4}$ W., (mud and sand,) this is certainly not the best anchorage, except with easterly winds, when you are well up the gulf. But to the westward, abreast of a small village with Point Melangeri N.E.b.N. you may anchor from eighteen to seven fathoms, (mud and sand,) about two or three cables off shore. The town as well as the acropolis is in a very dilapidated state. There are a few soldiers kept in the acropolis merely to guard it.

Anchorage inside the Trigonia Islands.

The eastern part of the large or western Trigonia Islands bears N. $\frac{1}{4}$ W. true from the flag-staff of Vostizza, inside of which island there is an excellent anchorage in any weather, from it a ship has the advantage of being able to go to sea with any wind. We anchored in eighteen fathoms and a half, stiff mud, with the west extreme of the large island W. $\frac{1}{4}$ S., the point on the north shore N.W.b.W. $\frac{1}{2}$ W., red cliff on the north shore E.S.E., and a river on the north part of Islands S.E.b.S., which appeared to be a very good anchorage, but, perhaps, a little more on the northern shore in seventeen fathoms, good holding ground would be better. The entrance to the anchorage is either between the east and west Trigonia Islands, or to the westward of the large or westernmost, both of which passages are perfectly clear,—no bottom twenty-five fathoms within twenty fathoms of the shore. There is a small reef extending off the north part of the island, (which has a ruin on it,)

about forty fathoms off two and a half fathoms, and seventy fathoms off, seven fathoms, stones, when it falls into deep water; that is the only danger in the anchorage. There is a small inner harbour in the northern part of the island, which has a small island at its entrance. Inside of the harbour, which is about 300 yards, there is from six to two and a half fathoms, (mud,) a very excellent anchorage for small vessels.

Anchorage of Galaxidi.

Vessels bound to Galaxidi, may run with a fair wind between the first or southern and second island, which is perfectly clear, except round each island about thirty fathoms off, and a shoal above water with a reef extending about thirty fathoms, with three fathoms rocks, which shoal you have on the larboard hand, after which, you run into a most spacious bay with anchorage all over it. We worked out of this passage with the wind dead against us. The next passage is between the second and third islands, or the largest and the next to the northward of it. Mid-way between those two islands, there is a shoal with one and three-quarters fathoms on it, stones and weed, which shoal has six fathoms twenty fathoms off it on either side, and deep water between it and both the islands, so that on entering either of those passages you must keep the islands on board, both of which islands have reefs extending from fifteen to twenty fathoms round them. We entered this passage passing close to the southernmost. Between the next two islands that lay nearly east and west of each other, (the easternmost, the smallest island of the group,) the whole of the ground is foul, and patches of rocks,—not a fit passage to attempt: but between the easternmost or small island, and the next small one to the northward of it is a good clear channel, except about one-third from the easternmost or small island towards the northward, where there is a small shoal of mud with five fathoms and a half, therefore, it is of little consequence; the whole besides is perfectly deep water, except close to the islands, which have like all the others a reef extending round them, about twenty fathoms off. When inside of these islands, you have the bay of Galaxidi open to you, with deep water all over it, and you may anchor within three cables length of the town in twelve fathoms, (mud and sand,) perfectly sheltered from all winds, or in any other part of the bay you please, as it is a most extensive anchorage. The town of Galaxidi stands on a point forming out, which has a creek on either side of it, the one on the south-east side of the town is the one made use of by the coasting vessels, that appear to have a great trade, and eleven vessels from 200 to 50 tons are building in the creek. The town is not very large but is crowded with houses. We anchored in twenty fathoms, (mud,) north extreme of the bay N.E. $\frac{1}{4}$ N., south extreme south, and the centre of the town S.W. $\frac{1}{4}$ W., as we only remained here a few hours to continue the survey from Salona to the western part of the entrance.

Passage from Salona to Galaxidi.

From Salona to Galaxidi run close along shore, inside of all the islands, and when you come off the point forming the bay of Galaxidi, keep

about fifty fathoms off shore, which is the only danger there is, and you pass the point in fifteen fathoms; after which, you are clear of all the shoal ground, and open the bay of Galaxidi, where you may anchor at pleasure.

G. BIDDLECOMBE, *Master*,
H.M.S. Talbot, 1839.

GILMORE SHOAL, *north-west of Cairncross Island.—Inner Passage to Torres Strait.*

THE following extract of a letter from Mr. Byron Drury, mate, of her Majesty's ship Alligator, to the Hydrographer of the Admiralty, gives the position of a newly discovered shoal, which is important to vessels frequenting the inner passage from Sydney, as it not only dries, but lies near the track of Capt. King. Mr. Drury on his way to Port Essington, in the Gilmore, from Sydney, which vessel left that place on the 26th of September, says,

"I was anxious to get through Torres Straits, and therefore ran between Cairncross and No. 7, by moonlight, and steered N.N.W. for five miles. The master of the ship wished to obtain a shoaler anchorage than twelve fathoms. So we hauled in W.N.W. and anchored in ten fathoms mud, about three miles and a quarter from the shore.

"At daybreak a shoal appeared, *the centre of which was just dry*. It was about 120 yards west of the ship.

"The following are the bearings of our anchorage:—Centre of Cairncross Island S.E. $\frac{1}{2}$ E.,—Island No. 7, S.S.E. $\frac{1}{4}$ E.,—Pudding Pan Hill S. $\frac{1}{2}$ W., making the shoal in latitude 11° 8′ 30″ south, and longitude 142° 44′ 45″ east. It appears to be narrow, but of considerable extent north and south;—it was breaking at least a cable's length north and south of the dry part. It was low water spring tides and must therefore be generally covered. The master of the ship slipped his cable to clear it."

It lies two miles inside of the nearest of Captain King's tracks.

SUGGESTIONS ON THE HEALTH OF MERCHANT SEAMEN.—*By Captain C. Biden, Harbour-master, Madras.*

[In the early part of our last volume, we printed Dr. Budd's very useful remarks on scurvy.—The following suggestions of Capt. Biden have been transmitted to us in consequence.]

THESE suggestions will shew that plain and simple remedies may be adopted and provided on board all vessels, and that common care and caution may effectually guard against that dreadful scourge of sea voyages—the scurvy.

The following letter dated March 5th, 1776, from Captain Cook, to Sir James Pringle, explains the system planned and pursued with such admirable effect by that celebrated commander, and is well deserving

the attention of every officer throughout the navy and commerce of the British empire.

"We had on board a large quantity of malt, of which was made sweet-wort, and given (not only to those men who had manifest symptoms of the scurvy, but to such also as were from circumstances, judged to be most liable to that disorder,) from one to two, or three pints a day to each man, or in such proportion as the surgeon thought necessary, which sometimes amounted to about three quarts in the twenty-four hours. This is without doubt one of the best anti-scorbutic sea medicines yet found out,—and if given in time, will, with proper attention to other things, I am persuaded, prevent the scurvy from making any great progress for a considerable time; but I am not altogether of opinion that it will cure it in an advanced state at sea.

"Sour-crout, of which we had also a large provision, is not only a wholesome vegetable food, but in my judgment, highly anti-scorbutic, and spoils not by keeping. A pound of it was served to each man when at sea twice a week, or oftener when it was thought necessary.

"Portable soup or broth was another essential article, of which we had likewise a liberal supply. An ounce of this to each man, or such other proportion as was thought necessary, was boiled with their peas three times a week, and when we were in places where fresh vegetables could be procured it was boiled with them, and with wheat or oatmeal every morning for breakfast, and also with dried peas and fresh vegetables for dinner. It enabled us to make several nourishing and wholesome messes, and was the means of making the people eat a greater quantity of greens than they would have done otherwise.

"Further, we were provided with rob of lemons and oranges, which the surgeon found useful in several cases.*

"Among other articles of victualling, we were furnished with sugar in the room of oil, and with wheat instead of much oatmeal, and were certainly gainers by the exchange. Sugar, I imagine is a very good anti-scorbutic; whereas oil, such at least as is usually given to the navy, I apprehend has the contrary effect; but the introduction of the most salutary articles, either as provisions or medicines, will generally prove unsuccessful, unless supported by certain rules of living.

"The crew were at three watches, except upon some extraordinary occasion. By this means they were not so much exposed to the weather as if they had been at watch and watch, and they had generally dry clothes to shift themselves when they happened to get wet. Care was also taken to expose them as little as possible. Proper methods were employed to keep their persons, hammocks, bedding, clothes, &c., constantly clean and dry. Equal pains were taken to keep the ship clean and dry between decks. Once or twice a week she was aired with fires, and when this could not be done, she was smoked with gunpowder, moistened with vinegar or water, I had also frequently a fire made in an iron pot at the bottom of the well, which greatly purified the air in the lower parts of the ship. To this and cleanliness, as well in the ship as amongst the people, too great attention cannot be paid, the least neglect occasions a putrid offensive smell below, which nothing but fires

* Rob of lemons and oranges, an extract which contains all the virtues of the infusion, is now generally termed syrup.

will remove, and if these be not used in time, those smells will be attended with bad consequences. Proper care was taken of the ship's coppers, so that they were kept constantly clean. The fat which boiled out of the salt beef and pork I never suffered to be given to the people, as is customary, being of opinion that it promotes the scurvy.*

"I never failed to take in water wherever it was to be procured, even when we did not seem to want it, because I look upon fresh water from the shore to be much more wholesome than that which has been kept some time on board. Of this essential article we were never at an allowance, but had always an abundance for every necessary purpose. I am convinced, that with plenty of fresh water, and a close attention to cleanliness, a ship's company will seldom be much afflicted with the scurvy, though they should not be provided with any of the anti-scorbutics before-mentioned,

"We came to few places where either the art of man or nature did not afford some sort of refreshment or other, either of the animal or vegetable kind. It was my first care to procure what could be met with of either, by every means in my power, and to oblige our people to make use thereof, both by my example and authority, but the benefits arising from such refreshments soon became so obvious, that I had little occasion to employ either the one or the other.

"These, Sir, were the methods under the care of Providence, by which the Resolution performed a voyage of *three years and eighteen days*, through all the climates from 52° north to 71° south, with the loss of *one man* only by disease, and who died of a complicated and lingering illness, without any mixture of scurvy. Two others were unfortunately drowned and one killed by a fall, so that of the whole number with which we set out from England I lost only four.

"I am &c.,

(Signed) "JAMES COOK."

There are golden rules laid down in this invaluable document which should be cherished, and as far as circumstances will admit, they should be adhered to throughout the sea service.—The generous and humane example of that great and good man Captain Cook, has ever been held up as a pattern to the Navy, and the Merchant service, and wherever it has been followed, the same beneficial consequences have been the happy result.

But there have been, and still are, exceptions to so easy and salutary a practice,—why, and wherefore,—I will now endeavour to explain.

When the sea scurvy raged with such ungovernable violence, the primary cause was believed to be owing to the very bad quality of provisions supplied for use on long voyages,—and secondly, to the ignorance which prevailed, before any specific remedies to subdue that dreadful malady were discovered and ascertained. .

The many beneficial changes which have taken place in the Navy, have at length produced as perfect a system of victualling ships-of-war as can well be devised, and this great example should 'ere this time

* Many seamen to this day are very fond of using this fat, which they call *cook's slush*, the practice is very pernicious to health, and is generally supposed to induce scurvy.

have produced a corresponding amendment throughout the mercantile marine; for I have no hesitation in saying, that the principal cause of scorbutic disease in that service, however few the cases may be, arises from the undefined and irregular mode of victualling in the merchant service.

A well defined and uniform scale of provisions is a grand desideratum for the reform of the merchant service, and is well worthy the serious attention of the home government, but the victualling and medical supplies are now dependant on the will and caprice of ship-owners: whereas, if some legal enactment enforced an efficient and equitable store of the best quality of provisions, of medicines, and anti-scorbutics, the health, comfort, and welfare of seamen, would be adequately provided for, and British seamen would then be bound by stronger ties of allegiance to their country. It is well known that a short allowance of provisions, and those sometimes of a bad quality, are frequent sources of discontent and insubordination,. and such grievances are intolerable, and ought to be rooted out by the highest authority.

Preventive means as a check to the scurvy, and for the cure of tha disease, are so well known, and can be so easily provided, that no officer having under his care and protection any number of seamen, can plead ignorance as to those remedies with which he ought to be supplied, but independent of diet and other specifics, there are other means of prevention which are not sufficiently attended to, viz. ventilation, cleanliness, and discipline. On the two first essential points, Captain Cook dwells with much force, and it is scarcely credible that there can be any neglect or indifference to such important duties, but the variety of changes in conduct and management observed between one ship and another, shews that such strict attention to the general health and comfort of a ship's crew are not always the practice. Those ships which maintain the highest order and regularity are in general the most healthy, but strict discipline impelled by fear and unrestrained severity, is neither conducive to health nor comfort, the happy medium is that system which shall maintain due order and respectful obedience with alacrity and cheerfulness, therefore sailors ought to be indulged and encouraged in every possible enjoyment and recreation, and in such a happy state will be found another preventive to the scurvy.

Dr. Blane when serving with Lord Rodney in 1781, stated, that the prevention and cure of the scurvy may be best insured by the concomitants,—diet, cleanliness, and recreation.

With respect to diet, I need only observe that those specific remedies against scurvy, which for prevention or cure are known to produce the most salutary effect, are abundantly found throughout the East and West Indies. I allude to those of the vegetable kind. Yams are an excellent substitute for potatoes, and in the course of my experience, I have known them to keep with care for two months; potatoes are plentiful at the Cape, and at St. Helena; limes or lemons are equally abundant, and all these essential supplies are generally much cheaper than flour; therefore every vessel ought to provide a due proportion of this cheap and easy method of preserving the health of their crews. Since my arrival here, I have been surprised to find how seldom a stock of yams is thought of for the homeward supply of provisions;—the best

kind in this part of India is, I understand, grown near Pondicherry, but with due encouragement, I have no doubt this excellent and very wholesome vegetable might be improved, and more generally produced in the vicinity of Madras.

Fumigation is another precaution against disease, which is too much neglected; I have always enforced this duty, and sometimes by a very simple process, viz. by damping a quantity of rope yarns, termed shakings, in a small tub, lighting them, and with due caution guarding against any flame being produced, whereby a dense smoke issues forth, and by moving the tub from one part of the deck to another it searches everywhere.

I have also had the decks occasionally dried and well aired with coal fires in swinging stoves, and this practice after a long continuance of wet weather, especially in high latitudes, cannot be otherwise than conducive to health and comfort.

The importance of ventilation and a general regard to cleanliness are so obvious, that I will only remark, that without constant care and attention seamen are very careless as to personal cleanliness, and after exposure to wet and rain there are many of this improvident and heedless race of beings who will suffer their clothes to dry on them, and even turn into their hammocks in the same state rather than shift or change: so many instances of this culpable negligence and indifference have come within my own knowledge, that I am convinced the only sure method for checking and preventing such evils is, to establish well known rules and regulations, and strictly enforce them;—even to this day, that wholesome practice of piping up and down hammocks, and airing the people's bedding is wholly neglected on board many merchant vessels, and yet the least reflection will shew that wet clothes and damp bedding may be considered as the origin of another scourge to which seamen are peculiarly liable—the Rheumatism*

Although the crew of a merchant ship cannot be divided into three watches, yet there are many occasions at sea when their arduous duties may be relaxed and relieved, and a watchful eye over their many wants and privations may save them from unnecessary fatigue and undue exposure to heat or cold, to wet and rain.

All the suggestions contained in the treatise referred to, those so well defined in Captain Cook's letter, and those which have successfully and beneficially borne the test of practice and experience, form together an admirable code for the preservation of the health and comfort of a neglected and well deserving class of men, who, with all their faults, are rough and ready for all weather, and for every service; and as the brave and gallant defenders of their country they merit the protection and care of the supreme government, on whom devolves the duty of guarding them from wrong and oppression.

This code embraces the most essential duties of command, and it well becomes every captain and every officer to study and practice its excellent precepts, they may thereby, learn and duly appreciate the substantial good which can be obtained by an unremitting care and attention

* That good and wholesome practice of allowing a ship's company one or two days each week, to wash and mend their clothes is still very partially in use—they should be encouraged in these cleanly habits, and provided with soap.

to the welfare and happiness of men committed to their protection and support; and they will find how much good may be realized when the pressing duties of a seaman's career are called forth under the guidance of unswerving justice and humanity;—that a willing and cheerful obedience will go hand in hand, while mutual respect and confidence shall pervade throughout that ship, which, in perfect discipline, displays the union of external beauty and internal order, with the experience of contentment and happiness on the part of her gallant crew.

"The reports of the medical officers of the Dreadnought prove the frequent occurrence of cases of scurvy, of the very worst description, to which the committee beg to draw the particular attention of owners and masters of ships—experience shewing that the remedy of this baneful enemy to the seaman, does not consist so much upon fresh meat diet, as upon a plentiful supply of vegetables, lime-juice, and fruit, whenever they can be procured and carried to sea."

The Dreadnought, 98, was one amongst the glorious fleet which subdued and vanquished the combined fleet of France and Spain, off Cape Trafalgar, and was given by government to the public as a floating hospital for *seamen of every nation*:—this is one of the best conducted and most valuable institutions in England.

C. B.

Madras, May 27th, 1840.

Atlantic Steamers.

A position of importance to steam navigation has been laid down in Mercator's observations on Atlantic steamers, in the June number *of the Nautical* 1840, viz:—that they ought to be constructed on the model of fast rowing boats instead of sailing vessels. Having long entertained a similar opinion, though founded on a less extended examination of rowing boats, my conclusions are yet in some degree at variance with those advocated by Mercator. His arguments are weakened (I conceive) rather than enforced by such a marked reference to boats adapted for being launched through a surf, as the conditions under which the large steamers are impelled against heavy seas, coincide more nearly with those to which the east and west coasts gigs or gallies are subjected to, in rough weather among waves, comparatively as large in proportion to their size. In these boats the displacements of the fore and aft bodies are nearly equal, and the result is a great degree of regularity and ease in their pitching motion.

The only boat with which I am acquainted, the displacements of whose after-body exceeds that of the fore-body, is the Thames wherry.* When loaded aft, and judging from her performance in the head seas of the river, my opinion would not be in favour of that form. They are obviously however impelled by a small force under such circumstances, but, I conceive they are inferior to the common form of gig; more especially if the seas rise a point or two on either bow, as would occur to steamers in keeping a direct course. In this case the diagonal pitching

* A most dangerous boat.—Ed.

is extremely uneasy, unless the displacements at the extremities of the vessel are well balanced. At the same time I should not entertain much fear of the largest steamer pitching bows under if constructed according to Mercator's directions. In regard to Baltimore clippers their main breadth is often well forward, so that though their bows are extremely sharp, yet the displacements of the fore-body much exceed that of the after one.

This may account for their safety forward. The most peculiar formed boats I have seen are those belonging to a village to the north of Tynemouth castle. They were, I understood, surf boats; and though the forms of the after and fore bodies were extremely dissimilar, still the relative amount of displacement was nearly equal. Their main breadth was before the centre, especially aloft. The fore-body was formed by timbers convex below, but straight and upright above, which were extremely well joined to the flat floor; in the after-body the flat floor was continued in a gradual taper to a bluff end, but rising in a slight curve so as to keep the displacement about equal to that of the bow. It is evident that a stern oar would rapidly sweep round the stern and present the bow to a breaking wave. The preservation of this condition of equality in the capacity of the fore and after bodies, when the latter is made of such a remarkable form, confirmed my idea of its advantage in conducing to ease and regularity in pitching. In large steamers it would much conduce to cabin accommodation, to keep the upper water lines aft fuller than the bow lines, while the reverse would take place in the lower water lines. The lower part of the bow timbers would thus become convex, while that of the stern timbers would be concave: consequently the centre of the displacement from a given length from the stem and stern at the water line would be higher in the after than in the fore-body, with equal displacements.

The fore-body so formed would offer a greater resistance to the initial velocity of pitching, but less resistance to stop it suddenly, and such motion would be quietly ended without a jerk by the gradual action of the increased displacement.

The difficulty has long been felt of forcing a-head the form of bow adapted for rising over the waves, common in life boats. Speed with a moderate amount of power can only be obtained by extreme sharpness forward, and in that point I fully coincide with Mercator (lightness is here included) though a prodigious rake must be objectionable from it, its mass of materials being unsupported by an equivalent displacement below. A rake of 20° from the perpendicular would be the utmost amount that could be allowed, which would be sufficient for beauty of appearance, and enough to throw off the wave in the plunge, in pitching.

The fast river boats are flat-floored gigs on a large scale, with ends sharper than usual in sea boats of that class; probably sharper than the boats used in river rowing matches. The latter, with the necessary wash-strakes, are supposed to be incapable of competing with the medium sea galley in rough water. The change from a river to a sea steamer requires attention, not only to this point, but a fuller midship section to enable it to carry the requisite load. In a subsequent letter I propose to forward some observations on this part of the subject.

The only sailing vessels to which any regard should be paid in the construction of steam-boats I conceive, are the smuggling luggers which were powerful sailing gallies possessed of but few properties in common with ships. Their midship displacement is probably about equal to that required for sea-going steamers, but their rising floor is not adapted for a long stroke in the engines. Cordially joining in Mercator's opinion, that all idea of a ship should be entirely abandoned in the construction of a passenger steamer, and that the principles on which loaded rowing boats ought to be constructed, are the only safe guides, his reasoning has not convinced me, that an Atlantic steamer, constructed on his proposals, would "swim on her after-body" in a satisfactory manner: yet, a bold experiment of this nature would afford most valuable assistance in ascertaining the limits of the variation of the relative fore and aft displacements which might be used in large steamers, and their relative advantages; and, I trust the uncompromising manner in which the present system of attempting to force vessels, built on sailing models with powerful engines, at a high speed through the water, has been denounced, will lead to a general inquiry into the principles that ought to become our guide, in the construction of Atlantic steamers. It may be urged that the form here advocated is that which is in common use, and as far as concerns the equality of the fore and after bodies, I believe no variation is proposed; but a less depth, and sharper ends, with similar engines in proportion to a given displacement, would be a variation of some influence on the speed. The length and breadth must be increased and consequently the cost for a given engine power—a circumstance not favourable to its introduction. The increase of speed obtained by seven feet added beam to the Liverpool, is a practical illustration of these views.

S.

Loss of the Indian Oak.

The following abstract of a journal kept in the transport, "Indian Oak," from the time of her leaving Chusan to the return of her crew after shipwreck, on the Loo-choo Islands, in August last, affords so much room for comment, that we are induced to place it on record in the pages of the *Nautical*. The pendant was hoisted on the 8th of August, and after tailing on a ledge of rocks the next day, from which she was extricated, the Indian Oak finally sailed on the 10th, at which time we shall commence our abstract.

Monday, August 10th, 1840, A.M.—Light winds, north to N.N.W., and fine weather; 8h. weighed in company with H.M.S. Alligator, armed transport Bremer, transports Blundell and Isabella Robertson.

Noon; parted company with Alligator, &c., they steering for the south-east passage; stood on with Isabella Robertson through Goughs Passage.

P.M.; parted company with the Isabella Robertson, she steering to northward of Quesan group. 9h. Pata-he-cock E.b.N., four or five miles. Midnight; strong breezes and cloudy.

Tuesday 11th, A.M.—Fresh gales northerly, and hard squalls at inter-

vals. Departure taken from Pata-he-cock, when it bore E.b.N, four or five miles at 7h. P.M. of the 10th.

Noon; bar. 29·63, ther. 84·00; course per log, S. 54° E., 102 miles, lat. observed, 28° 26′ 17″ N., long. chron. 123° 24′ 15″ E., lat. D.R. 28° 23′ 0″, long. D.R. 123° 47′ 0″. Set westerly twenty miles.

P.M. 6h. gale increasing, with a very heavy sea; ship labouring heavy; close reefed the topsails, furled the courses, and sent down top-gallant yards.

Midnight; bar. 29·50; severe gale and a high turbulent sea.

Wednesday 12*th*, A.M. —Commences with a severe gale, north, north to east, and a high turbulent sea; ship labouring heavy; the main rigging so very slack as to make it unsafe to carry sail without endangering the mast. In consequence, the fish tackles were got up, the rigging swifted in, and topmast backstays lashed below the cheeks and set up.

Noon; bar. 29·40, ther. 86·00; ditto weather and sea. Lat. observed 27° 13′ 22″ N., long. chron. 124° 0′ 45″ E., lat. D.R. 26° 53′ 8″, long. D.R. 125° 31′. Set N. 27° W. 23 miles.

P.M. sent down main-top-gallant yard and mast; furled the fore and mizen topsails, and hove to under close reefed main-topsail.

Midnight; bar. 29·35; severe squalls and rain, with a continued gale and sea, the barometer falling down to 29·35.

Thursday 13*th*, A.M.—Hard gale, north to N.N.W., with a very high sea, and very severe squalls, with rain; ship labouring very heavy. The mainmast having great play, owing to the rigging being so slack, I much fear we shall lose it.

Noon; bar. 29·35, ther. 86·00; course per log S. 20° E, thirty-seven miles. Lat. observed 26° 39′ N., long. chron. 124° 59′ E., lat. D.R. 26° 38′, long. D.R. 125° 45′. Set westerly ten miles.

P.M. squalls less severe and longer lulls; sea very high laying to under close reefed main-topsail. 3h. set close reefed main-topsail. 6h. set the foresail. 8h. strong gales and heavy squalls. 10h. set the mainsail.

Midnight; strong gales and hard squalls.

Friday 14*th*, A.M.—Strong gales, N.N.W., and frequent hard squalls with a very heavy sea. 5h. 30m. more moderate; sea still running high, and the ship labouring very heavy; out third reef of main-topsail, and reef of the foresail.

10h. course per log allowing one point lee way according to Capt. Grainger's opinion is S. 66° 30′. E. 121 miles; lat. D.R. 25° 51′ N., long. 127° 2′ E.

From my own observations and opinion, the ship has made no lee way, but rather from the heave of the sea headed her reckoning, and has made a course from noon of yesterday, E. 13° S., 130 miles, which puts us in lat. D.R. 26° 10′ N., from yesterday's chron. long. 127° 20′ E.; wind north-west and W.N.W.

At the moment of working the above sights, Mr. Power, acting third officer, reported discoloured water; hauled out S.S.W., and saw the land indistinctly about N.b.W., with a line of breakers stretching north and south, close under our lee; at this time it was blowing hard with severe squalls and rain, the wind veering to the westward, the ship

broke off to the eastward of south; the weather so thick the land was scarcely visible at three miles distant; saw breakers ahead, and land on the weather bow. Wore with the hope of clearing on the other tack. In the act of veering the fore-topmast-staysail and fore-topsail blew out of the bolt rope.

Finding we could not weather the coast on this tack, and an extensive reef of rocks stretching out from the island, on which there appeared no chance of saving the lives of the people, wore under the foresail and main-topsail, with the hope of running into what appeared an opening in the land, very indistinctly seen; but the foresail unfortunately at this moment blew out of the bolt rope, and left us without hope, shortly after which the ship struck, and in a few minutes more took the ground and fell over on her broadside: to the best of my judgment this was about 11 A.M., cut away the mainmast to ease the ship; at this time blowing very hard in severe gusts, W.S.W. to W.N.W., with rain, and so thick, that the land which was moderately high, and not more than two miles distant, was very indistinctly seen. The sea now made a clean breach over the ship: all hands collected in the cabin under the poop, and on the weather or starboard quarter, where I took up my station, the sea breaking over with great violence, and sending broken pieces of sheathing and copper over all.

On the ship first taking the ground lost our larboard-quarter boat, which was stove and washed on shore, (by which we observed the tide was falling;) there was no hope of saving our lives but by the wreck holding together, and getting a line on shore.

About noon, William Hayburn, passenger seaman, made an attempt to carry the end of the deep sea lead-line on shore, but owing to the very heavy surf and the very strong drawback he failed, and was with some difficulty hauled on board. Shortly after Mahomed Ally, Lascar made the attempt, and succeeded in getting on shore, but without the line. On the poor fellow getting a few yards above the surge, he fell down on the rocky ledge, apparently quite exhausted and much injured by the rocks. Men were now seen advancing towards the wreck, and to assist the man who had got on shore. Great numbers now came down and motioned us to land.

P.M. 12h. 30m. or half-past noon,—cut away the mizenmast to ease the poop, the ship completely over on her beam ends, and the sea making a clean breach fore and aft, and blowing a severe gale with heavy rain from W.S.W. About this time the ship broke her back and parted at the chest-tree, the fore part settling down into deeper water; an attempt was now made to launch the jolly-boat stowed on the launch, in doing which she was stove, and no part of her seen again; the end of the log-line was now made fast to a musket ramrod, and fired from a musket, but did not reach the shore. John Vincent, cook now made an attempt to swim on shore with a line but failed, and was hauled on board as in the first attempt. A Lascar named Inodee, now made the attempt, and succeeded in carrying the end of the log-line on shore, by which the end of the deep-sea-line was hauled on shore by the natives, but owing to the bight fouling the rocks, our intention of bending on a hawser was frustrated. Hatches, gratings, boats' oars, were all tied to float a line on shore, and lastly a pig, but all failed. It was now

about 3h. P.M., and the flood tide coming in all the natives with our two men left the reef, our only remaining hope being in the after-part of the ship holding together during the flood tide. The weather now became much worse, blowing and raining furiously from the W.S.W., dead on the shore. It was now next to impossible to hold on the quarter, where with several others I had continued to cling; we now retreated under the poop, which afforded us some shelter from the severity of the weather, as also from the risk of being injured by the pieces of sheathing and copper which were continually thrown by the sea over the after-part of the vessel.

During the whole of the flood tide and the next ebb, the sea continued to break over the ship fore and aft with great violence, making the whole fabric tremble as she surged over the outer patches of the rocks on to the ledge, where she at the latter part of the flood settled a short distance from low water mark, on one of the large clusters of rock.

Our great fear now was, in the event of the gale continuing and our not succeeding in getting on shore before the next flood, the vessel would not hold together. A great and good God was most merciful. About 9h. the barometer began to rise and the weather to break,—this cheered our drooping hearts, and hopes began to revive. To judge of our feelings at this time between hope and fear, none but those who have unfortunately been placed in similar situations can have any idea, and far more than my feeble pen can describe. I have omitted to state, that shortly after the ship took the ground, the rudder with part of the stern separated from the vessel, and the sea with great violence forced itself through the aperture into the lower and upper cabins.

Between 11h. 30m. P.M. and midnight, judging it to be near low water, sounded on the lee side, (both sea and wind having greatly abated,) it was comparatively smooth under the lee of the wreck, where we found only five or six feet water. Piped the hands on shore, the wreck of the mizenmast gaff and boom forming a raft, at the end of which the depth was little above a man's waist, except in holes. On all the crew and passengers quitting the wreck and succeeding in getting on shore, Captain Grainger with his officers and myself also quitted, and succeeded in reaching the rocky ledge in safety, with the exception of receiving a few cuts and bruises in getting over the rocks, and walking over the rocky ledge about a mile in the direction of some lights, on a sand bank about high water mark. We were met by the islanders, and greeted with great kindness and hospitality, most of us without shoes, hats, or jackets, and many all but naked. I had nothing but a pair of linen drawers, bannian and shirt, wet and cold; one of the kind islanders noticing my situation, took off his cloak and put it over me. Here they presented us with hot tea, and rice made up in balls. I only regret my inability to do justice to those kind-hearted people. Greater kindness and hospitality could not be shown by any nation than was shown to us by them.

After resting a short time on the beach, we were conducted about a mile higher up through paddy fields, to what appeared a guard or court house, (a comfortable wooden building with tiled roof, and divided into several apartments.) Here we were all supplied with dry clothing, and regaled with a fresh supply of tea, rice, and fowls, of which we

partook, and laid ourselves down to rest, after twelve hours drenching in the sea.

Saturday 15*th*, A.M.—Wind moderating and the weather clearing up, found ourselves on the border of a large village called Pee-koo. Several men, apparently of rank, paid us a visit, and after making enquiries as to the number of Europeans, Portuguese, and Lascars, our ship's company consisted of, shewing great civility and attention to our wants, sent rice, oil, and vegetables, for the crew, and rice, fowls, eggs, &c. for the officers and Europeans,—found however we were not allowed to go beyond the limits of the house and grounds. Our only means of communication being through the medium of the two Chinese carpenters, who spoke the Malay very indifferently, in which language I communicated, and the carpenters again by the Fokien dialect to the Loo-chooers, four or five of whom spoke the latter. We, however, found one Loo-choo gentleman of some rank, and a very intelligent man, that spoke and understood a few words of English, which he stated to have learnt from Captain Beechey, of H.M.S. Blossom, that had touched at the islands about fourteen years before on a visit. Having answered all their interrogations as to where we came from, and where we were bound:—were told not to fear, we should be sent to Singapore with all that we might save, and be supplied with provisions during our residence, and for the voyage, but that we could not be allowed to walk beyond the limits of our present abode. At low water it was intimated that all hands, with the exception of myself, might proceed to the wreck, to save what we could, and that every assistance would be given, which was done by their sending boats and men. We succeeded in saving from the wreck many articles of clothing, instruments, and stock. A request being made to furnish a correct list of each class of persons and the quantity of provisions required, at the same rate as allowed on board our own vessel, it was given accordingly, when I was informed that that quantity or more if required, would be supplied daily. A number of men employed in bringing in materials for erecting two long range of buildings, one for the crew and the other for stores that might be saved, with all requisite out offices which were marked out.—Fine weather.

Sunday 16*th*, A.M.—Light westerly winds and fine weather,—crew and officers with a large party of the islanders employed in saving articles of various descriptions from the wreck, there not being more than four or five feet water alongside the wreck at low water, succeeded in saving most of our wearing-apparel and furniture, some few articles of provisions, wine, and beer, but all completely saturated with water, —had a conversation with some of the principal men on the subject of quitting the island. One proposition from the Loo-choo people was to break up the ship, and to build a smaller one with the materials, offering to supply any other wood that might be required, and men to assist. On explaining the great length of time it would take to break up the ship, and the want of means to do so, as well as the unsuitableness of the old timber, it being full of bolt and nail holes, and being also without tools, a promise was given to send us in about a month to Singapore, in a Loo-choo vessel.

Considerable progress made in the building for our accommodation. Saw two islands bearing from W.b.S. to S.W.b.W., distant six or seven

leagues, and a number of small junks in the offing, apparently fishing boats. Middle and latter part very fine weather, with a smooth sea.

Monday 17*th*, A.M.—Light westerly winds and fine weather, with a smooth sea. From fifteen to twenty canoes with a large party of the islanders, and our own people getting stores from the wreck: succeeded in recovering a number of articles. Nothing can exceed the honesty of these good and kind-hearted people; greater temptation could not be offered to any men; articles of gold, silver, clothing, wines, beer, and spirits strewed in every direction, but not one ever touched, or missing; the greatest anxiety and every means used to render our situation comfortable. Several of the crew returned from the wreck drunk, and very mutinous. Several cases of sickness, principally bowel complaint, but none of a serious nature.

Tuesday 18*th*, A.M.—Throughout light winds, westerly during the day; latter part N.E.b.E., and calms with very fine weather and smooth water; winds from the westward during the day, and north-easterly at night. Several vessels, apparently fishing boats plying between the islands. Continued to experience the same kind treatment from these excellent and polite people. As yet have not seen arms of any kind amongst them: from eighty to one hundred men with ten to twenty canoes assisting our people in saving articles from the wreck: the meridian altitude was taken on board the wreck this day, but owing to the proximity of the land, do not consider it as correct. Latitude deduced from ditto 26° 11′ 34″ N. The barracks for our people and stores being completed with all requisite out offices, sent the crew in, and the young men passengers into the north end of the store range: also obtained permission to retain one wing of the court-house for the commander and officers' accommodation until another building could be erected. Got the starboard-quarter boat on shore only slightly damaged.

Wednesday 19*th*, A.M.—First and latter part light northerly winds and fine weather: middle part light westerly winds and calms.

Noon: bar. 29·80, wind westerly; from 80 to 100 islanders with ten to fifteen canoes employed with the crew at the wreck in saving sundry stores; viz. rope, blocks, kedge anchor, seven-inch hawser, two guns and carriages. Also succeeded in getting the launch out without injury. Our good friends commenced building a barrack for our accommodation, and sent persons to examine the wreck as to the practicability of breaking her up. This day came to the determination to fit out the launch, and to send Mr. Field, chief officer, with ten men in her to Chusan to obtain assistance: made the same known to the principal mandarin, stating, however, she was to go to Macao, to which he agreed, but thought her too small.

Meridian altitude taken on board the wreck gave lat. 26° 16′ 23″ N. long. chron. 127° 13′ E.

Thursday 20*th*, A.M.—Throughout moderate, E.N.E., westerly, and E.N.E.,—land and sea breezes, the former from E.N.E., and latter from the westward with fine weather. During the day if exposed to the sun, found the heat oppressive, but in the house pleasant, and the nights generally cool.

A large party of the islanders building a long shed or house, of rather

a better description than that built for the crew, which we are informed is for our accommodation and the captain's stores. A party of the islanders with their canoes assisting our people in getting stores from the wreck, recovered some provisions, sails, and rope.

Friday 21*st*, A.M.—Moderate winds, north-easterly, easterly fresh, and fine weather during the first and middle part; latter part fresh easterly winds. The house for our accommodation being completed, of which we received intimation from my friend Tung-chung-faw, the principal man at Peekoo, immediately moved in from that we first occupied. Our new abode is a thatched building extending in front of the court-house, on the road from north to south, about 65 feet by 15 east and west, the front facing the east, and the back to the west or seaside. The floor is raised from the ground by beams thrown across at every three or four feet, with small bamboos over, and fine mats, such as used in their own dwellings over all; the sides or walls formed with bamboos and grass worked or sewed into mats, with jumps or windows such as usually are fitted to bungalows in Bengal; the kindness and attention of these good people to all our little wants exceeds everything; every convenience, even a bathing-house is attached to our dwelling.

About noon a mandarin of high rank arrived, before whom Captain Grainger, Mr. Field, and myself were summoned at the court-house: he received us with kindness, and before entering on businsss were requested to partake of a repast with him consisting of boiled eggs, salt fish, fried pork, and balls of some savoury meat with pickled onions, and small cups of sackie, the liquor of the country, made from rice, in which the madarin pledged us. He was an intelligent old gentleman, between sixty and seventy years of age, with a long white beard from the chin, his outer robe or dress was a light blue, a broad yellow sash beautifully embossed, and a high cap covered with rich yellow silk, white stockings made like mittens, with a thumb stall only to admit the great toe, so as to allow the thong of the sandal fitting between the great toe and the next. A long conversation now took place, the substance of which was, that they would build a vessel to take us to Singapore of the following dimensions:—viz. 65 feet keel, 25 feet beam, 7 feet 6 inches depth of hold, or larger, if we thought that was not sufficient, which should be finished in forty to fifty days; that we were to superintend the building of the vessel, and reject any plank or timber we might consider bad or unsuitable. It was also proposed to break up the wreck, and to use such of the timber and plank as suitable in the construction of the new vessel, to which of course there could be no objection. I, however, explained that owing to the great quantity of iron and bolts in the old Indian Oak, it would occupy a very long time, not less than six months, and as with their own wood it would take full two months, strongly urged the necessity of sending our long boat with the chief officer to Macao, from which I thought assistance might arrive in about a month. This they strongly opposed, on the plea, the long boat was too small, and if lost, blame would fall on them, and wished us all to proceed in the vessel they propose to build. After many arguments on both sides, it was agreed the vessel should be built, and the long boat allowed to go after the change of the moon, so that in the event of

the long boat not succeeding, the vessel would still be in progress; for the cost and equipment I pledged the British government.

About 5 P.M. the great man took his leave, accepting six time-glasses as a present, which these good people seemed to prize much, giving an assurance we should be supplied with provisions and a vessel, with every thing necessary to our comfort, but that we could not be allowed to leave the boundary of our abode, except to the wreck. A party of islanders and the crew employed at the wreck, recovered some of the ship's sails and provisions; and made some progress in making the long boat's sails. I omitted to mention yesterday that the mandarin who this day visited us, presented us with one large hog, twelve fowls, and a quantity of eggs.

Saturday 22*nd*, A.M.—Strong easterly winds and fine weather. At daylight this morning the hands were turned up, and ten men volunteered to go in the launch with Mr. Field, chief officer. A party of the islanders and most of the crew employed at the wreck getting out stores and water casks, and others fitting out the launch with masts and sails.

Noon, bar. 29·90, ther. 84; latter part strong breezes with squalls and rain from north-east.

Sunday 23*rd*, A.M.—Light northerly airs and fine weather; 10h. 30m. performed Divine service, and returned thanks to Almighty God for our safe deliverance,—present, officers, passengers, and seacunnies.

Noon, bar. 29·80, ther. 84; strong gusts from north-east and passing clouds; P.M. latter part strong winds N.N.E. to north-east, and passing showers.

Monday 24*th*, A.M.—Moderate north-easterly wind and fine weather: long boat's crew and chief officer fitting out the boat; second officer and a party on board the wreck, and a party of natives endeavouring to break up the wreck.

Noon, bar. 29·72, ther. 84; fresh northerly winds; observed the starboard bulwarks and foremast of the wreck cut away. Midnight, light northerly winds and cloudy.

Tuesday 25*th*, A.M.—First part strong northerly winds and cloudy; chief officer and long boat's crew repairing and fitting out the launch; third officer and part of the crew employed on board the wreck. A party of the Loo-choo people breaking up the wreck.

Noon, bar. 29·70, ther. 84·30; light winds and cloudy with rain. P.M. latter part light northerly winds and cloudy.

Wednesday 26*th*, A.M.—Fresh N.N.W. winds and fine weather. A large party of islanders breaking up the wreck; second and third officer, with a party of crew getting the powder out of the magazine and landed. A party of islanders building a magazine of loose stores on the beach, under my superintendence, about one mile from our residence.

Noon, bar. 29·70, ther. 87; strong breezes from N.N.W. and fine weather,—landed the powder, seventeen barrels, and one keg of flints, and stowed it in the magazine, all of which appeared to me to be damaged. Long boat ready for sea, but consider it prudent for her not to sail until after the change of the moon, which with an eclipse of the sun takes place to-morrow.

Thursday 27*th*, A.M.—Strong north-west winds and cloudy weather

islanders breaking up the ship, and a party of crew with the officers endeavouring to save ship's stores from the wreck.

Noon, bar. 29·68, ther. 87; first part light north-west winds and fine; P.M. latter part light northerly winds and fine weather. A quantity of deck planks, &c. landed from the wreck by the islanders.

Friday 28*th*, A.M.—Light north-west winds and fine weather. A large party of islanders breaking up the wreck. Crew and officers drying and stowing away the stores. 8h. bar. 29·70, ther. 71.

Noon, bar. 29·70, ther. 87; light westerly winds and cloudy; latter part light N.N.W. winds and cloudy.

Saturday 29*th*, A.M.—Dark threatening appearances and light N.N.W. winds; long boat all ready to sail, but consider it prudent to detain her another day, in consequence of the threatening appearance of the weather.

8h. received an invitation from the principal man Tung-chung-faw, to accompany him to the place where the junk was building to convey us to Singapore. Accompanied my friend, taking with me Mr. Field, the chief officer, and proceeding in palanquins of the country, but rather inconvenient being small; we were obliged to sit cross-legged on our hams, as the natives generally travel in India. In our retinue were several persons of the better class of natives, on ponies. Our route lay near the sea coast and rather rough, with a continuation of hill and dale. Had a good view of the Markerima and Kirema Islands, which bore by a Chinese compass, from the entrance of the river where the junk was building W.b.S. $\frac{1}{2}$ S. Each palanquin was carried by four men, by a yoke lashed across the pole. Kept on at a round rate for about two hours and a quarter,—supposed distance eight to nine miles; crossed a bridge built of stone, with three arches, and about twenty feet broad over a considerable river, on the banks of which the junk was building. After crossing the bridge, our route lay towards the sea, over a point of land on the north bank about two miles, we arrived at the place where the junk was building. At the mouth of the river is a small bay, in which were three junks of moderate size at anchor. The entrance from the sea is formed by two high headlands, a reef extending out from each about half a mile; visited one of the junks which came in during our visit. She measured over all sixty feet, and keel forty feet. On the north bank was laid the keel of a new vessel, intended for us, and a great number of workmen employed in preparing timbers and planks, which had been brought from the wreck, to be used in the construction of the vessel. The keel of the new vessel as stated, measured sixty-five feet, had three scarfs about twenty inches deep by eighteen inches broad. I intimated our wish to build the vessel on an English model, and to be allowed to superintend the work with the two Chinese carpenters belonging to our late ship. This they would not agree to. No deviation from their own method of building would be allowed, but requested that we would prepare the sails out of those saved from the wreck. The country through which we passed consisted of hills and dales, with very little level land, but all in a high state of cultivation. The plough and hoe, with a small bill-hook, appear to be their principal tools used in agriculture. All the cattle we saw were yoked to the plough; they are larger than the Bengal and generally black. Saw large fields of sweet potato, several patches

of sugar cane and millet; the former appeared healthy but very small. The soil generally a reddish clay and sand, and in many parts very rocky. Passed several small villages but saw few inhabitants, and very few females except children, and all of the lower order. It is difficult to distinguish the females from the males, their dress being the same. About sunset returned to our camp.

(To be concluded in our next.)

OBSERVATIONS ON THE NAVIGATION OF THE BALTIC, AND GULF OF FINLAND, TO PETERSBURGH, *with the customs of the trade.--By the Commander of a British Merchant Ship.*

(Concluded from page 224.)

In laying the concluding part of this paper before our readers, there are one or two subjects in it on which we may add a comment. It would, in the first place, be desirable that the light-vessel were stationed off the Knobben rock, alluded to in p. 18, as it is evident that the light of Anholt, seven miles off, cannot be seen from a ship in its vicinity in thick weather. The passing trade would benefit much by such a measure, and we recommend the advice of our correspondent to their attention, not doubting that the Danish authorities would readily attend to any suggestion which has for its object the improvement of navigation. The next subject is, the proposal of our correspondent for stationing a beacon, or light vessel, at the extremity of the reef off Falsterbo Point, as "the lighthouse on the Point is *so low as to prevent its being seen at a sufficient distance*;" and "there is nothing to indicate the vessel's approach to the danger except judging of the distance from the land." This proposal is no less important than the former, and we trust will meet with attention from the Swedish authorities, who cannot be otherwise than ready to do their part in taking any measures that "are indispensably necessary to the safe navigation of the Baltic." With respect to the Baltic lights generally, we are glad to hear so good a character of the Russian lights, and wish we could say as much for the Swedish. We are satisfied, however, in the present day when improvement in almost everything around us is making such rapid strides, that the complaint of our correspondent, that the Swedish lights "are only to be seen at a very short distance," and that "neither must any one trust to seeing *any of the Swedish lights very clearly, or at any distance, as they are only of a second rate quality" (!)* so much improvement we say is spreading everywhere, that, we are quite sure, no apathy on the part of the Swedish authorities can prevent it from extending to the Swedish lights. Leaving, however, these observations to the attention of our seamen with the pecular regulation of the Baltic lights, generally not being lighted in the summer months, we may point out the judicious remarks of our correspondent on shaping courses in narrow seas, recommending them to exert their own good sense with a chart and a pair of parallel rulers rather than follow implicitly the courses and distances given in the books of directions, and thereby run the risk of losing their ships. In fact, the whole remarks of our correspondent are worthy of special attention—they are particular useful to those who have not before made a voyage up the Baltic, and not only for his remarks on the navigation in general, but for those on the proceedings at Petersburgh with the authorities and the information concerning cargo, our shipmasters will be very much obliged to him.—[ED. N.M.]

THE ship being ready to receive cargo, a note will be sent on board by the agent, stating that a lighter is arrived, her number, &c.; the

master, or mate, will then proceed to the floating custom-house, and request the cocket for the goods, (called a yerlick), which being first entered in a book, and that book signed by the receiver, is delivered. The craft may then go alongside the vessel, and when ready to discharge, an officer must be procured from the floating custom-house to take off the seals from the lighter's hatchway. Should the cargo come down in a barge, or cutter, (as they are called), the yerlick will be procured at the same place as before named, and on being taken to the officer stationed at the rooms, between the vessel and the landing-place, will be signed by him; the craft may then proceed alongside and discharge without further ceremony. A few days before the vessel is loaded, request the agent to procure the outward pass from Petersburgh. Without this precaution the vessel may be delayed when otherwise ready for sea. When loaded, take all the yerlicks for the cargo, as well as the provision yerlick, (which will have been procured on arrival, from the agent's clerk, to enable the vessel's stores to be taken on board), and proceed to the floating custom-house. Then a manifest will be made out, which, when ready, will be carried to the agent's office. Bills of lading must now be signed, and the cash account settled with the cash-keeper, which being done, the pass and manifest will be carried to the clerk at the custom-house, when the trifling duties exacted on the ship's stores being paid, in about two hours the pass will be delivered. It must then be taken to the floating custom-house where its contents are entered in a book, thence taken to the inner guard-ship, and signed by the captain of the port, which being done, the vessel is at liberty to haul out and proceed to sea. On approaching the outer guard-ship care must be taken to heave to in time; when the pass is signed by the officer, sail may be made for Elsinore, where on arrival, the pass, bills of lading, &c., being taken on shore, the vessel will soon be cleared for her destination.

In stowing cargoes it is customary to employ Russian labourers, they can be hired cheap. The stowage of hemp and flax, however, becomes expensive, as the price paid for the use of screws is high, and they occupy much time. Tallow and other articles are less expensive in stowage, and occupy less time. A vessel of 250 tons register, which loaded 340 casks of tallow, and 120 tons of hemp, cost about £25 for screws and labourers.

The following comparative rates and other memoranda connected with the trade, I give on the authority of the Hull trader already mentioned. As he is a well informed man of great experience and observation, I am confident they may be relied upon, although in some instances they may vary from the printed rates.

Bristles. It is customary to receive 2*s.* 6*d.* to 5*s.* per ton more for bristles than tallow; if the latter is at £1 10*s.* it is the same as bristles, at £1 12*s.* 6*d.*, as five casks of tallow and three casks of bristles occupy the same room.

Deals and Battens. One standard dozen = 72 feet. Ships of 200 tons register take 3½ std. dozen per ton register, o.m.; 300, 4 to 4½.; 400, 4 to 4½; 500, 4½ to 5.

Junk. Ships take of good tarred junk, 10 per cent. more than their register tonnage.

Bones. Ships of good size will take 10 to 15 per cent. more than their register tonnage.

A ship of 270 tons took 320 tons of bones, and 80 tons of iron.

Rips and Hides pay the same frieght as clean hemp per ton of 44 ps.

Rips are however preferable frieght, as at £2 10*s.* per ton for clean hemp, the ship gains about 3*s.* per ton on taking rips.

Linseed and Grain.—Ships will take of linseed 10 to 10½ chetworts; wheat hard 9 to 9½, and soft 10 ditto; rye 10 to 10¼ ditto; oats 12 to 12½ ditto; barley 11 to 11½ ditto, per ton register. The ship will gain 6 to 8 per cent. on the weight of the grain, when allowed to leave out the empty mat bags in which it is brought alongside. A chetwort is 5¾ Winchester bushels.

Flax. Twenty-eight bobbins 9 heads, or 46 bobbins 6 heads, equal one ton weight.

Tallow. A tier is estimated at 2½ feet in depth. Three casks to a ton register is the usual calculation for ships of 250 tons and upwards, and some ships of 200 tons take 3 casks to a ton register. A ship will turn out 2 tons of tallow, beyond 2½ casks per ton, gross weight, for each 100 casks; 100 casks tallow, equal 42 tons gross.

For example a ship of 200 tons register, at 3 casks equal 600 casks, equal 252 tons.

600 casks at 2½ casks, per ton equal	240	tons
add 2 tons for each, 100 casks	12	"
	252	"

Hemp and Flax. Ships of 70 tons to 100 tons stow one-third less than their regular tonnage; 100 to 150 tons, three-tenths; 150 to 200 tons, one-fourth; and 200 to 300 tons, one-fifth; but many full-built vessels, especially Scotch, will take their register tonnage of clean hemp, and flax. Flax as cargo is more profitable than hemp by 8 or 10 per cent. Instead of the proportions of printed rates, which are per outshot one-eighth more than clean hemp, it should be one-twelfth only; and half clean hemp one-fourth more than clean, it should be one-sixth only.

Potashes usually pay the same freight as tallow; but they are worse for a ship by about 5 per cent. If tallow be 30*s.*, potashes should be 31*s.* 6*d.* per ton.

Freights. If tallow 30*s.* clean hemp should be 50*s.* to 52*s.* 6*d.* per ton; linseed 4*s.* 6*d.*, wheat 5*s.*, rye 4*s.*, oats 3*s.* 9*d.* per quarter, and deals 80*s.* per standard hundred: these are fair comparative rates for shipowners, taking the stowers' charges into calculation.

NB. All the regular tons here alluded to, are by the old measurement, 5 casks tallow, 3 casks bristles, 100 casks tallow, or 27 to 28 tons clean hemp, or 27¾ to 30¾ tons clean flax, occupy the same room.

Sixty cubic feet of tallow in measurement, and 85 feet clean hemp in bundles, equal a ton weight. One ton of flax codilla occupies 1¾ to 1⅞ of a ton register; iron, hemp, flax, potashes, tallow, oil, &c. are calculated at 63 ps. per ton; and bristles, hides, wax, &c. at 44 ps. per ton.

Provisions and stores for ships' use may be procured cheaper in Cronstadt, than in England, such as beef, bread, canvas, cordage, spars, &c. All these articles may be procured of good quality, except the first; and it should be remembered, that beef cured in the summer season will not

keep many weeks; beef of a much better quality, and at a moderate price can always be procured at Elsinore.

The mole which contains the shipping is a large and commodious dock, enclosed with a massive stone wall, which is thickly studded with heavy guns, mounted *en Barbette*. The vessels lay in tiers, moored to dolphins, or large posts well secured to the bottom. The mole for the men-of-war is immediately contiguous; it is very extensive and commodious, having at its upper end, the various storehouses, workshops, dry docks, admiralty, &c. None of the men-of-war however, are built in Cronstadt, they are constructed in Petersburg, and floated over the bar, in an immense praam constructed on purpose.

So many stories are related in England by the masters of vessels trading to Russia, of the oppression of the custom-house regulations, and tyranny of the various officers, in the execution of their duty, that I went to Petersburg very much prejudiced against the place, and all connected with it. I left it, however, with a very different opinion. I can safely say, that in the many countries I have visited, and amongst all the authorities I have been temporarily subjected to, I have never met with more civility or consideration, than I did in Russia. I certainly treated every one I had to do business with, in a civil and respectful manner, but I never gave a single ruble as a bribe, the attention, therefore, that I met with did not proceed from interested motives. A great many of the difficulties which are constantly arising to British masters of vessels and the authorities, proceed in my opinion, from both parties being ignorant of the languages; and truth compels me to say, not a few, from the obstinacy, rudeness, and "John Bullism" of my countrymen. I always endeavour to judge charitably of every class of my professional brethren, and I have no hesitation in saying, that I have met in Russia, masters of British coasters and colliers, well informed, respectable men, who would do honor to any class of shipmasters. But I must at the same time affirm, that in Cronstadt, I have met with a set of men in that situation, from whom a very poor opinion of my countrymen could be formed. Meeting them on shore during the day, you could scarcely recognize them from their own crews; dirty, unshaven, and ill-dressed: at night they were to be found in a grog shop or brothel amusing themselves in their own peculiar way. I have seen such men go on business into the custom-house, or on board the guardship, advance into the inner room of the principal officer, with hands in their pockets, hats on their heads, and in a surly, gruff tone, and in the broad patois of their native province, *demand* the paper, or whatever else they may have come for. In such cases, I have seen them treated with indifference, but it was certainly excusable. Another frequent cause of disturbance with this class, is quarrelling with the poor custom-house officer stationed on board their vessel, while the inward cargo remains on board; these men are old soldiers, who have been promoted to this situation as a reward for long and faithful service, and good conduct, accustomed from their youth up, to the strict discipline of the Russian army, they are disposed to perform their duty as custom-house officers, in a strict and literal manner; but I have always found them civil, and respectful, and willing to accommodate so far as they can. I again say, I had every reason to be pleased with my treatment, and

think it perfectly possible for a man to transact his business with the authorities with every satisfaction.

All the merchants reside in Petersburg, the business in Cronstadt being transacted through the agent; to the city, therefore, the shipmaster must proceed, if he wishes to obtain a freight, or communicate personally with his consignee. The communication between the two places is now regular, being maintained twice a day by steamers; this is a decided convenience, as by going in the morning boat from Cronstadt, the merchant may be visited, the Exchange attended, and a return effected by the evening boat. Previous, however, to going, a passport is required, which is procured by the agent, one general pass serving for the period of the vessel's stay in port.

I have never been in any country where business is conducted by British merchants in so aristocratic and exclusive manner as in Russia. On arriving in Cronstadt, the ship-master must put himself under the hands of one man, the merchants only acknowledging one agent, the stranger has no recourse to any other, no remedy if he feels aggrieved by the agent's conduct. I am not now alluding to the present agent, but to the system on which he acts. On the contrary, Mr. Booker the present factotum, is a venerable and highly respectable gentleman, who has for many years conducted the business in such a manner, as to gain almost universal satisfaction; indeed I never saw an establishment where business is conducted so systematically, or attended to so promptly. Mr. Booker being also British vice-consul, has his own share of annoyances. Whenever an apprentice has been chastised by his master, or a sailor, turns lazy, and quarrels with the mate about his grub or his grog, they instantly appeal to Mr. Booker, whose patience on some occasions is very severely tried. I remember being present one evening when two or three of the crew of a North Country brig, sulky, demure looking fellows appeared, complaining of the want of beef; the master also a respectable "canny" north countryman was present. The oldest of the party, whose rolling eye gave evidence of his having lately taken a quantity of "votkey," became speaker and stated his complaint. The master was appealed to, who proved by the butcher's book that 2lbs. a man per day was served out to them, besides vegetables for soup and potatoes, with bread at discretion. Mr. Booker told the speaker he was perfectly satisfied the master's statement was correct, as he had known him for many years, that he had no doubt the deficiency arose from the cook's roguishness; advised him to find out if the cook did not sell part of the meat in order to purchase grog, if he did, to report him, and he should be severely punished. During Mr. Booker's address, I could see something like a smile on the countenance of the other men, and an ill suppressed laugh on the part of the master, who told Mr. Booker when the men were gone, that he had been addressing himself particularly to the very rogue, he being cook. I thought at the time, I should like to have these same fellows an eight or ten months voyage across the ocean, just to make them acquainted with salt junk and mouldy biscuit.

Proceeding to Petersburg, the master will find the method of transacting business very exclusive and arbitrary. When the cargo is delivered and the freight due, it will be paid by the merchant himself

to the ship-master, but under a deduction of 3 per cent. on the amount; if a remonstrance is made against this overcharge, he is told that it is according to the laws of the Russia Company, which regulate all business matters connected with British trade. These laws like those of the Medes and Persians, are, it appears, unalterable, and are quoted to the party complaining whenever he remonstrates on that or any other overcharge. I would advise every shipmaster, therefore, to avoid paying this 3 per cent.; to stipulate, when he charters his vessel to carry a cargo to Petersburgh, that the frieght shall be paid on delivery, free of commission or charge. Let him also be careful to sign bills of lading to deliver the cargo at Cronstadt, not at Petersburgh, which is generally done, as the vessel becomes then liable for the cargo until it is safely landed in the city; and in several instances parties have been made to pay for goods, stolen while in the lighters going up the river.

Wishing to obtain a homeward freight, again the exclusiveness of the Russia Company becomes apparent, there is only *one broker* for chartering vessels, employed by all the merchants, and of necessity by all shipmasters. The freights are thus entirely at their own making; this broker keeps a list of all unchartered vessels according to arrival, and if business is dull, as it was in the early part of last season, the vessel must remain until her turn comes, unless a merchant may be induced through other means to give her a preference. Through the monopoly, enjoyed by the merchants and broker, I saw several instances of injustice towards strangers, Another practice to be guarded against is the common one, of inducing the shipmaster by the temptation of a good freight on two-thirds of his cargo, in the West Indies, Mediterranean, &c. to take the other third on half profit; that is, to receive one half the profits, or that third, when sold at Petersburgh as freight; the produce being invariably consigned to the charterer's agent. This becomes a good business for the merchant, he obtaining commission and charges innumerable, while the vessel is paid on the third, with from £1 10*s*. to £2 per ton, instead of £4 10*s*. or £5, which was obtained on the two-thirds. The sugar or other produce is at times fourteen to twenty days, from its being sent from Cronstadt until it is landed in the city; the consequence is, before it can be sold, the vessel is ready for sea, and the master is told that he may have account sales, at a certain price under the market price, or sail without a settlement, and remain months without his money. Several Americans were very much deceived in their "calculation" in this manner last season.

The port-charges paid to the Russian Government by the vessel, are very trifling, but the master when he receives his account from the agent in Cronstadt, will find a great many charges made against the vessel, at fixed rates, on the authority and by command of the Russia Company. Amongst others he will find a sum of about £5 charged on a vessel of 250 tons register, *every voyage*, for the support of two churches and their respective clergymen, one situated in Cronstadt, the other in the city. This, I conceive, is manifest imposition; I have every respect for religion, and would most willingly contribute my part of a very ample sum, for the support of a church and clergyman in Cronstadt, but I see no reason for requesting me to pay for a church, situated sixteen miles from the vessel, which neither myself nor my crew can attend.

There is also a charge for the company's secretary with whom the master has no chance of acquaintance, except through the medium of Mr. Booker's account; there are also other charges quite as exceptionable; but remonstrance is vain, the all-powerful Russia Company have imposed them, and they must be paid.

While attending to business the shipmaster should not lose the opportunity of spending a few days in the city. Two very respectable and convenient hotels, will be found in Galernoi street, kept by English women, and frequented by all respectable English and American travellers; the accommodation will be found good and the charges moderate. The churches, palaces, theatres, bridges, museum, markets, &c., are all well worthy of attention. The immense granite column, erected by the Emperor Alexander, and the statue of Peter the Great, with its ponderous pedestal, should be seen, in order that their dimensions may be credited. The city itself, with its wide streets and squares, and its magnificent public and private edifices, has a noble appearance; yet there is something very different from the bustle and activity of our large towns, something mechanical and forced were connected with it; this effect is very much increased by the number of persons you meet in uniform; it seems as though you were walking through an immense fortification. Tsarskoe Selo, the summer residence of the Imperial Family, is also well worthy of a visit, the gardens and grounds are extensive and well kept; the armoury compact are allowed to be an excellent collection; the interior of the palace also is splendid. Amidst all its splendour and magnificence, however, one small room occupied my principal attention; it was the bed-chamber of the late Emperor Alexander, this, with its furniture, is kept exactly in the state in which he left it. Every article of furniture in it is of the most common kind, the articles of the toilet of the plainest sort; the hat, coat, sword, boots, &c., remain as they were left, even the blotting paper on the side table remains, soiled with ink as it had been used by the lamented Emperor. A visit should also to be paid to the cottage just built by Peter the Great when he came to build the city; it is very small, and is now protected by another house built over it. The fortress also, containing the old church of St. Peter, where the deceased members of the Imperial Family, from Peter downwards, are buried, is worthy of attention; around the interior walls of the church are thickly planted flags and standards taken at various times from the Persian, Turks, &c.: on one, a white silk flag, is very distinctly imprinted the mark of a bloody hand, evincing the deadly struggle which had taken place for its possession. From Constadt, very agreeable excursions may be made to Peterhoff and Oranienbauend, summer palaces of the Imperial Family, situated on the main land, nearly opposite Cronstadt. The gardens at both places are extensive and well laid out, and the splendid fountains, grotto, and water-works in the garden at Peterhoff, are said to rival those at Versailles. In visiting all these places, and indeed, every public edifice, in or near Petersburg, every facility is given to the traveller for seeing them. I found the servants and guards at the palaces civil and attentive, and a far greater degree of liberty allowed in visiting Imperial residences, &c., than would be tolerated in England.

These are merely a few hints for the guidance of the traveller. I am

afraid they may be thought irrelevant to the subject I have been writing on; but, I think such a city as Petersburgh well worthy the attention of the intelligent mariner, and I trust others who may go there at a future period may enjoy themselves as much as I did, both in the city and in Cronstadt, where I met with much civility and hospitality, and formed some agreeable acquaintances.

MEXICANO.

At sea, 22nd Dec. 1840.

VICTORIA AND ADELAIDE RIVERS form deep indentations in the north-west coast of Australia; the latter, although the smallest, is navigable for many miles beyond where the water is fresh, and therefore is a discovery of vast importance, being the second navigable river in the whole continent. To the settlement of Port Essington it is truly a great acquisition. Victoria River is still a magnificent one, but far from what it was formerly. Strong tides and numerous shoals, some having scarcely six feet water on them, must ever render its navigation hazardous in the extreme. As a point of departure for exploring the interior it is most admirably situated. From its appearance in the last twenty miles, I think there can be little doubt of it extending many miles into the interior, probably coming from some swamps, for such I believe the nature of the interior of this vast continent to be.—*Extract of a letter.*

THE NIGER EXPEDITION.*

THE long talked of expedition to the Niger has at length sailed from our shores, destined to convey another olive branch of good will towards man, in the still benighted wilds of Africa. Small though the effort may be in comparison with those extensive tracts, in which ignorance and suffering prevail, doubtless, it will add an important link to that chain of events which will be recorded for successive generations, as the efforts of this country in behalf of christian charity. Forth go our gallant countrymen, their mission that of peace and prosperity, to Africa, under the protection of an all-wise and Almighty Providence. —May they prosper.

We shall now briefly lay before our readers the following extract, from a little work "the Friend of Africa," which will convey some account of the vessels, and the gallant hearts they contain, and shall hereafter watch and report their progress, with all the anxiety which so interesting an expedition must excite.

"In accordance with the recommendation of Sir Edward Parry, contained in his report on this subject appended to Lord John Russel's letter to the Treasury, the expedition will consist of three iron steamers, strongly built, and of light draught of water, fitted for river navigation. Three such vessels have been built by Messrs. Laird of Liverpool, and fitted with every improvement which their well-known experience could suggest. At their launch in September last the steamers received respectively the names of Albert, in honour of our royal President; Wilberforce, in memory of that venerated name; Soudan, (or more

* See page 265 and others of our last volume.

correctly Habîb-es-Sudan,) or Friend of the Blacks. The dimensions of the vessels, the two larger of which are exactly of the same size, rig, and power, with all their stores precisely alike, are as follows:—

	Albert and Wilberforce.	Soudan.
Length on deck .	136 feet.	110 feet.
Breadth of beam .	27 feet.	22 feet.
Depth of hold .	10 feet.	8 feet 6 inches.
Draught of water .	5 feet 9 inches.	4 feet.
Tonnage, about .	440 tons.	250 tons.
Two sliding keels .	6 feet deep.	

"Each of the larger vessels has two engines of 35-horse power each, and can carry coals for fifteen days, (of twelve hours.) The smaller has one engine of 35-horse power, and can carry coal for ten days. All the engines were constructed by Mr. Forrester, of Liverpool. The vessels have as roomy and airy accommodation as their size would permit. The Soudan is intended for detached service, when required, up smaller rivers; for conveying intelligence or invalids, and especially for sounding ahead of the other vessels in difficult or unknown navigation.

"The vessels are thoroughly equipped with every necessary, nay, every comfort that prudence or foresight could dictate. The supply of provisions of all kinds is most ample, including preserved meats, chiefly prepared by Goldner, and sufficient for the consumption of the crews for four months.

"For the purpose of enabling the medical officers of the expedition to render their services useful to the natives, an extra quantity of medicines has been furnished to each of the ships; and from the great respect, if not veneration, in which the healing art is held throughout Africa, it may be inferred that a judicious and liberal exercise of it will contribute much to the objects of the expedition.

"With the view of endeavouring to supply a remedy for the want of a free circulation of fresh air between decks in a tropical climate, and for the miasma that usually prevails in alluvial soils on those coasts, a system of ventilating tubes has been fitted, under the able superintendence of Dr. Reid. With this is connected a chamber, containing woollen cloths, lime, &c., through which it is intended, whenever the presence of malaria is suspected, the air shall pass previously to being circulated below by the ventilating apparatus.

"A more detailed account of Dr. Reid's plan will be given in a future number of this paper; but in the mean time it may be remarked, that it seems to be quite possible, that, by a careful observation of the effects of a 'malaria' atmosphere on the substances in the chamber, a clue may be given to the nature of this hitherto unknown, but formidable, foe to European life in tropical climates—a result which would deserve to be ranked among those discoveries, by which science may be truly said to have benefited mankind. These observations will be conducted by Dr. M'William, the senior medical officer, who fully enters into Dr. Reid's views, and is well qualified to render these experiments subservient to the advancement of knowledge.

"The command of the whole expedition is entrusted to Capt Trotter, of the Royal Navy, already well known by his services in putting down

slavery while in command of the Curlew, on the coast of Africa.* The two other officers in command are Captain William Allen, R.N., the companion of Lander in his last voyage, and to whom we are indebted for the chart of the Quorra, and Captain Bird Allen, R.N., who has long been employed on the survey in the West Indies, and is well acquainted with the African character. The following table shows at one view the officers of the respective ships:—

Albert.	Wilberforce.	Soudan.
Captain, H. D. Trotter.	*Com.* W. Allen.	*Com.* Bird Allen.
Lieut., E. G. Fishbourne.	*Lieut.* J. N. Strange.	*Lieut.* W. Ellis.
,, H. C. Hartson.	,,	
Master, G. B. Harvey.	*Master*, W. Forster.	*Master*, J. Belam, *act.*
Surg. J. O. M'William, MD.	*Surg.* M. Pritchett, MD.	*Surgeon*, W. B. Marshall.
As.-sur. W. Stanger, MD. *act.*	*As.-sur.* T. R. H. Thomson.	*Assist.-sur.* H. Collman, *act.*
,, J. Woodhouse.		*Clerk in charge*, N. Waters.
Purser, W. Bowden.	*Purser*, C. Wakeham.	*Mate*, F. W. Sidney.
Mate, W. C. Willie.	*Mate*, H. C. Toby.	,, A. B. Davies.
,, M'Leod B. Cockraft.	,, H. F. N. Rolfe.	,, W. R. Webb.
,, J. W. Fairholme.	,,	
Second-mas. W. H. T. Green		*Master's-assistant*,
Clerk, W. R. Bush.	*Clerk*, J. H. R. Webb.	
Clerk's-assist. J. Mouat.		
Gunner, W. Merriman.		
Eng. J. Langley, 1st class.	*Eng.* W. Johnstone, 1st cl.	*Eng.* G. V. Gustaffson, 1st cl.
,, 2d class.	,, 2d cl.	,, W. Johnson, 2d cl.
,, J. Brown, 3d class.	,, G. Garritte, 3d cl.	

"The Rev. T. O. Müller will, we believe, be chaplain to the expedition.

"The crews of the three vessels consist besides, of 22 marines, and 88 seamen and stokers; of these 88, not less than 20, or nearly one-fourth, already entered, are Africans by birth. On their arrival at Sierra Leone, the ships will take on board about 120 Kroomen, who will do all the work that requires exposure, as wooding, watering, &c.

"The commanders of the ships, and Captain Cook, (well known for his skill and humanity in rescuing the crew of the Kent East Indiaman when on fire in the Bay of Biscay,) will be her Majesty's four commissioners for making treaties with the native Chiefs for the abolition of the slave trade.

"So far, the government has thoroughly provided for all the wants of the expedition; and a deep debt of gratitude is due to her Majesty's advisers on this account from all well wishers to the cause of Africa.

"But the committee of the African Civilization Society, deeply impressed with the necessity of embracing the opportunity afforded by the Niger expedition, of carrying out its pacific and benevolent views as stated in its prospectus, and of investigating the resources and capabilities of this part of Africa: desirous also of effectually co-operating with the government in rendering the expedition as complete in a scientific point of view as lay in their power; have spared no expense in selecting and engaging individuals in every department of natural history to accompany it. As a botanist, they have had the good fortune to secure the services of Dr. Vogel, acting director to the Botanic Garden at Bonn, (and highly recommended by Baron Alexander von Humboldt,) an individual who, to a practical knowledge of horticulture,

* See Nautical Magazine for 1837, page 1.

unites the acquirements of a scientific botanist. As a mineralogist they have engaged Mr. Roscher, a practical miner, educated at the Academy of Mines at Freiburg, (the school which produced Humboldt, Buch, Werner, &c.,) who will furnish a report upon the geological structure, as well as on the minerals and metals of that portion of Africa. As naturalist, they have embraced the offer of Mr. Frazer, curator to the Zoological Society of London, who will investigate this department of natural history in a country where no naturalist has preceded him.

"The committee has also engaged the services of a practical gardener and seedsman, who, under the kind superintendence of Dr. Lindley, has made a selection of the most useful seeds and plants to introduce into Africa, and will explain their uses to the natives, and show them how to cultivate them.

"And, lastly, they have engaged a draughtsman, whose aid will be required in all those departments of natural history, where the objects are too large or too delicate to be preserved; and who will otherwise furnish us with sketches of tropical scenery, and with the peculiar characteristic features of the various African tribes which he may be with.

"This completes the *personnel* of the expedition, which, as far as the Society is concerned, has been effected at an expense considerably exceeding 1,000*l*. Another very essential object with the committee has been preparing vocabularies, as far as could be done in this country, of the chief languages of Western Central Africa. At first the task seemed hopeless; but by perseverance and diligent research, a very tolerable vocabulary has been formed of the six languages with which the expedition will come into immediate contact, and a shorter list of some others. These are printed in the most convenient form of reference, together with a series of the most useful questions. In this work the committee have to express their thanks, for valuable assistance, to M. D'Avezac, at Paris; to Ashanti princes now in this country in charge of the Rev. T. Pyne, to Mr. de Graft, a native Fanti, through the kindness of the Rev. J. Beecham; and to Dr. M'William, who has drawn up a series of the most useful medical inquiries, which have been sent to Sierra Leone and Cape Coast for translation.

"The Soudan was to sail from Liverpool on the 28th of December, the other vessels will shortly follow, and they may be expected to arrive at Woolwich in the course of next week, when they will take on board the remainder of their stores. The Ashanti princes, who return by this opportunity to their native country, will also there embark. The expedition will finally leave England about the 30th of January*, and calling at St. Vincent, one of the Cape de Verde Islands, for coal, at Sierra Leone for Kroomen and Interpreters, and Cape Castle, will probably arrive off the mouth of the Niger about the 10th of March. The vessels will here fill up their coals from a store-ship already sent out for that purpose; and having placed their heavy stores, &c., in canoes, and otherwise lightened the vessels for river navigation, they will proceed up the Quorra either by the Formoso or Nun branch, whichever may be reported of most favourably; and steaming rapidly through the Delta, make their first halt at the town of Ibu or western shore of the Nun, about 120 miles from the entrance. Here they will commence their

* This was at first intended, but the month of April was afterwards determined on.

operations with a view to the execution of the principal object of the mission, namely, to make treaties with the African chiefs to put down entirely the traffic in slaves, and to substitute instead of it a friendly commercial intercourse with this country.

"Ibu, or Eboe, we know from Lander and Laird, is a place of some importance; and King Obi, at the time of their visit, was respected or feared even to the extreme point of the Delta. Among Captain W. Allen's "Views on the Niger," * is a very characteristic sketch of the procession of canoes, densely crowded with Africans, invested with all their "barbaric pomp," conducting him and his fellow-travellers up to the capital, to hold a "palavar" with King Obi; the broad stream overhung by the most luxuriant tropical vegetation, the numerous boats, with their gay flags, and the good-humoured natives shouting or singing as they rapidly paddled their canoes, formed a striking and picturesque scene.

"After as short a delay as possible at Ibu, the expedition will proceed up the river: and forty miles beyond, reach the first hills at the apex of the Delta, about 160 miles from the sea,—a distance easily accomplished with even moderate steamers in from three to four days. Here the monotony of alluvial soil, and all the *malaria* of the Delta, are left behind, and the traveller looks cheerfully forward to the remarkably formed range of the Kong Mountains, which soon show themselves in the distant northern horizon.

"At Attah, sixty miles beyond, probably the next advantageous point which may present itself for forming treaties, the *Adansonia digitata*, and the other peculiar vegetation of this luxuriant clime, becoms very striking.

"The Bokweh market comes next, a place of great resort for the produce of the interior, to be exchanged for European merchandize, of very inferior quality, which is brought from the coast. The neutrality of these meetings, whatever wars may be in the land, is said to be held sacred; and cheering, indeed, to humanity would it be were this principle strictly acted upon. But what they have not firmness to accomplish among themselves, by acting up to their own customs, a little conciliation on the part of our Commissioners may induce them to do for us, and thus by our means a great blessing may be conferred upon the people.

"At eight miles beyond, we reach Beaufort Island, of which we may expect to hear more hereafter, and twenty miles further, at a distance of 270 miles from the sea, the magnificent Chadda pours in its tributary stream from the eastward, offering a high road to an unknown, but certainly populous interior.

"Here will probably be the head-quarters of the expedition for some time, and the Commissioners will use their utmost endeavours to form treatises for lawful traffic, and for the extinction of Slave Trade, with the native chiefs. Here an opportunity will be afforded for showing the Africans the best mode of cultivating the ground, and of distributing plants and seeds suited to the climate and soil. By social intercourse, every effort will be made to gain the confidence of the chiefs, to

* Noticed in our February number.

impress upon them, the advantages of free over slave labour, and to endeavour to convince them by every means in our power, that the Queen of Great Britain, actuated by the pure spirit of Christianity, has sent this expedition chiefly for their benefit, if they will profit by the advantages offered to them:—may such be the happy result of the efforts made.

"Should an opportunity be offered, the vessels will probably explore the upper part of the Quorra, (Kawára,) towards Busah, where the lamented Mungo Park lost his life, and also the Chadda, as far as water communication will admit of it, and thus open the road to the missionary, the merchant, and the man of science.

"And here a favourable opportunity will be afforded of gaining more knowledge of the interior; some parties might even reach Lake Chad, about 500 miles to the east; or Tumbuktu, not much further to the north-west, and thus connect the exploratory journeys of Denham, Clapperton, and Laing, with points to be correctly laid down by this expedition, which is furnished with twelve of the best chronometers, and with every instrument that can be necessary for a complete geographical survey of the rivers, and of the countries passed through. The committee contemplating such a possible opportunity, has placed 1000*l.* at the disposal of the commander of the expedition, to be used either in some benevolent plans for the Africans, or in endeavouring to gain a more intimate knowledge of the interior of the country. Such journeys as we have alluded to, would not be bare geographical researches, but the traveller would be instructed to carry out, to the fullest extent, the benevolent objects of the mission, and to procure every information that would, at a future time, enable us the more effectually to become "*The Friend of Africa*."

"From this brief outline of the expedition, and of its probable proceedings, it is manifest that, even should it not fully succeed in its diplomatic objects, our knowledge of the vast rivers of Africa, of the capabilities of its soil, and of the openings for commerce, can scarcely fail to be largely increased; and surely the prospects of such results might encourage us to go forward, even under much greater difficulties than we have any reason to anticipate.

"When we consider the complete manner in which this expedition is equipped, the precautions taken for the health of its officers and crew, the body of scientific men attached to it, the fresh outlet it will open for manufactures, and the great objects it has in view, we cannot but look upon it as one of the most important expeditions that ever left the British shores: (and we write with a full knowledge of every arctic or anti-arctic expedition that has sailed during the last quarter of a century.) But when we contemplate the possible, and far from improbable, consequences of this small beginning,—that it may open the way for carrying civilization and the mild truths of the Gospel over a space in comparison with which Britain itself is but a speck upon the globe,—we cannot but ardently pray that the favour of heaven may rest on the enterprise, and that the reign of our beloved sovereign, which in its dawn witnessed the deliverance of our colonies from slavery, may be prolonged till, through the Divine blessing on British agency the vast continent of Africa shall also be released from the greatest curse that ever afflicted the human race, and grateful millions invoke a blessing upon the country that sent out the *Niger Expedition*."

EXCURSION TO THE LAKE OF NICARAGUA UP THE RIVER SAN JUAN.—*By Mr. George Lawrance, Assistant-Surveyor of H.M.S. Thunder, Com. E. Barnett, in March*, 1840.

(Concluded from p. 257.)

Mr. Bailey's levelling operations were commenced from Puerto de San Juan, and carried across to Rio de Lacas, the result of which makes the lake 128 feet 3 inches above the Pacific; the summit level 126, and the distance across fourteen miles; but, I cannot at present say whether this is the distance in a direct line between the two extreme points of his level, or the actual distance measured in levelling. I am rather inclined to think it is the latter. In this undertaking he was employed by the Government of Central America, and had many difficulties to contend with: he commenced in January with thirty labourers to clear the way, and it took him four months to complete his work.

At 5 A.M. we mounted, and at first felt very much shaken from yesterday's ride. Retracing the path by which we came, nothing worthy of remark occurred, and in the course of four hours we again found ourselves on the summit of the mountain from which we first got a glimpse of the Pacific, and now we took a last retrospective glance before we descended towards Gocoti where we arrived at 11 A.M., and restored our faithful little guide to his padre. After resting our mules and refreshing ourselves, we shaped a course for Nicaragua but had not gone far before we again found ourselves bewildered and were just about to bear up again when our young friend came to our timely relief, he wishing to accompany us to town. Within the last mile or two from town our lost pistol was restored to us by a woman near whose house it had fallen and been picked up. I mention this circumstance to shew that, bad as the people of this country are represented to be, this, at least, is an instance of honesty rarely to be met with, even among our own country people, and it was much enhanced by her reluctance to accept a reward, evidently shewing that she expected none.

Without stopping at the town we hastened to the beach as fast as our jaded nags would carry us, where we arrived at 2h. 30. P.M. and found all well.

Saturday 21*st*.—Still blowing very fresh at S.E.b.E. Got sights A.M. for equal altitude, and sent the Padrone to purchase beef for salting. At noon, compared chronometers and found they had been going very regularly since we came to this place, but they appeared to have altered their rates since leaving Grenada. In the afternoon got corresponding sights; wind still continuing to blow hard from the same quarter, and so much surf on the beach that we found it impracticable to launch our canoe.

In the evening of the 21st, we were invited to visit a settlement, near Palmarta Point, where Mr. Scott's mechanical skill in shewing them how to repair a pump belonging to the estate gained him great applause, of which we all reaped the benefit; for, by way of return for the services he had rendered, they invited us to take up our abode with them, and sent us a bag of fruit and a fine fat ready roasted duck!

Our Ramas all along have behaved extremely well; nothwithstanding

their ruling passion for grog they never once were untractable nor took any unlicensed liberty with our stores.

Monday 23rd.—At 11h. 30m. A.M. the wind having a little moderated we launched our canoe and paddled across to the Island of Ometape, carrying a depth of five and seven fathoms. At 3h. P.M. we landed, the wind coming round to the east.

The south side of this island is thickly wooded, excepting here and there where a few small plantations appear like so many oases in the wilderness, or forest; on the north side there is, I am informed, an Indian village, containing between 200 and 300 huts, where beautiful mats are manufactured out of grass.

At 6 P.M. we again embarked, paddled to the south point of Ometape. The shore, along which we passed, is bold and craggy in some parts, in others low and gently declivitous. Here we remained for the night under the lee of the island, wind blowing in heavy gusts.

Tuesday 24th.—At 4 A.M. started, continuing our course towards Madeira. Here we discovered that Ometape and Madeira, which at a distance appear to be distinct islands, are connected by a low woody neck of land, about forty or fifty feet high. The latter mountain is thickly wooded to its summit and in some parts intersected with ravines and cataracts.

At 7h. 30m. we landed on the S.W. part of Madeira where we found a German, named Oraldo Wormger, had settled with his wife and family. They had lately come from the United States with a view of forming a cotton plantation: he appeared to be very sanguine of success, informing us that, although he had been there only two months, was getting on extremely well; his land amounted to 5,000 acres, he had purchased from the local government of Nicaragua, at the rate of half a dollar an acre, which, after all incidental expenses were paid, would cost nearly as much as land in North America. The delay in getting it surveyed before he could take possession had, he said, been a great source of vexation and expense.

The huts in which this enterprising family had taken up their abode, are made of bamboos and wild cane, fixed perpendicularly into the ground and roofed by a kind of palmetto, neat, airy, and comfortable enough in fine weather, but in the rainy season I should think hardly weather-tight; but, should he succeed to his expectations, he told us, he intended to remove his dwelling, and build a more substantial house near a cascade, (a short distance from this), for the convenience of its falling waters, which he thinks he can make subservient to his cotton gin and other domestic purposes.

At noon the wind having nearly died away and the sea gone down, we again shoved off paddling towards the south shore, and carrying a depth of ten and nine fathoms. At 4h. 30m. we were off the Tortugas shore, and 5h. 30m. landed at the village of that name, consisting of only six or seven huts, inhabited by fishermen, &c. We saw the smoke of Beiga, an active volcano issuing apparently not from its highest peak, but from an elevation on the side of it.

The aspect of the northern shores of the lake is strikingly contrasted with that of the north side, where all is clear Savanna land; here it is densely wooded as far as the eye can reach.

From the composition of the bottom and beaches of this lake, which are both more or less impregnated with iron, one would have expected to find this water slightly chalybeate; but owing, I presume, to the metal not being in an oxidised state, nor associated with carbonic or sulphuric acid, it is not soluble: little, however, is known of the chemical operations of nature in the synthesis of mineral waters.

At 1h. 30m. P.M. we were abreast of Maccaroon, the western extreme of the Solentinane group, which we had a good opportunity of examining as we passed: their geological features do not differ materially from those of the other islands, and they are completely overgrown with the most luxuriant vegetation, resembling that of Corn Island; they are all inhabited by numerous families and produce abundance of stock of all kinds.

At 6h. P.M. took our last departure and bade adieu to this inland sea, our course now being directed to its outlet: passed close to the eastward of the Bocas Cays where the depth is about two fathoms; and at 10h. P.M. anchored off San Carlos where we remained for the night. Wheather threatening; lightning in the horizon.

Thursday 26th.—At 2 A.M. we were awoke by a heavy squall from the north-east with torrents of rain.

Shortly after leaving San Carlos we met three bongos, and were informed by one of them, that H.M.S. Thunder had just arrived at the Boca de San Juan. Continued our course till midnight when we anchored in the middle of the stream, about three miles above the Toro rapid; mosquitos murdered sleep.

Friday 27th.—Away at dawn of day when the sky was overcast and a shower of rain fell, wind easterly, paddling with the stream so much in our favor, that by 5h. 30m. A.M. we had passed the Toro rapid; and at 8h. safely descended that of Castillo Viejo, in neither of which did we experience the slightest difficulty or disaster, by keeping to the northern side. The time occupied in descending the latter was not more than one minute and a half.

At 9h. A.M. we dashed down the river in great style but more cautiously took the Machuca which is considered by the Pa do nes the most dangerous of all the rapids, on account of the tortuous course and the many rocks which lie superficially concealed in its bed. They never attempt to pull their bongos over it but always ease them down by means of a rope. We, however, by keeping good way on the canoe and skilful steerage, managed to shoot it without any inconvenience or danger. I must here alter my opinion respecting this rapid and confess that it well deserves the name, although insignificant in its ascent. The Castillo Viejo rapid is the most formidable and imposing to look at, but being straight and clear of shallow rocks, there is not much danger of capsizing so long as you keep well on the northern bank and "give way."

At 9h. 50m. A.M. we landed to breakfast on the Isla Campana. The river had fallen at least one foot and a half since we went up, and the stream did not run quite so fast. The Padrone said that it would fall one foot and a half more than at present. After May, when it is at its lowest, it begins to rise again, and in October generally, attains its greatest depth. Hence I should think, that the best time to commence

levelling would be about the middle of March, or beginning of April. Mr. Bailey, if again employed by the government of central America, to level between the lake and the Atlantic, *via* this river, intends to lay artificial foundations on its banks by means of planks, six feet by three. In the rainy season when the river is most swollen, and the stream is not too strong, it takes the best bongos from fourteen or fifteen days to go from San Juan to San Carlos.

The largest of these rude vessels, hewn out of immense trunks of trees, carry thirteen hands, including the Captain or Padrone, and are about five or six tons burden. On their passage to Grenada they never take a full cargo, but on their return they are generally deeply laden, on account of the stream and rapids which must oppose a greater resistance to a heavy body, and for other obvious reasons.

At 10h. 30m. A.M. we took our leave of Campana, and paddled down the stream as fast as our brave Indians could apply their brawny arms, and by way of encouragement we gave them an extra allowance of grog, which seemed to infuse fresh vigour. We were frequently drenched by heavy showers which fell during the day. At 3h. 30m. landed to dine on a dry sand-spit, where we remained about an hour, and then resumed our course down the river, heavy showers still falling. And at 7h. 30m. brought up for the night at San Francisco, where we contrived to get our clothes dried.

Saturday 28th.—Started at 4h. A.M.,—sky cloudy,—paddling down the river at a great rate. Passed the river Serapequi at 6 A.M., and at 9 landed to breakfast on the Colorado Island. Found the river very shallow and the stream not so rapid. At 10h. 30m. proceeded, and found the river getting so shallow that the Indians were obliged to jump out and haul the canoe over several bars of sand. The Padrone said, that the bongos in the dry season are often obliged to leave half their cargoes at Colorado, before they can get over the shallows which obstruct this part of the river, and even then the difficulty is so great that it sometimes takes them eleven days to get down to San Juan, digging a channel as they advance. At noon we were abreast of Juanillo Point, where the river takes a remarkable turn, running off at right angles and parallel with the coast as if this had once been its termination, which by the same process of fluviatile deposit now going on before our eyes at its present outlet, has been blocked up and the stream diverted into a new channel; the land intervening between this part of the river and the sea coast is a complete delta, the result of alluvial accumulation, and would seem to countenance this opinion.

With respect to the capabilities of this river as we now find it, I think it might be considerably deepened, and many obstructions removed by shutting the mouth of the Colorado branch. As to the rapids it would be ruin to attempt their removal, but they might be avoided by a canal.

Such improvements, however, can never be thought of in the present revolutionary state of this country. For all its commercial purposes the river is sufficiently navigable, and its bongos quite big enough.

At 2 P.M. we passed the Pauro branch, at 3 the lower mouth of the Juanillo, and at 4 got on board the Thunder, in San Juan harbour.

Voyage of H.M.S. Beagle, on a Survey of the Coast of Australia.—*By a Naval Officer.*

(Concluded from p. 192.)

Proceeding to sea, we examined more narrowly the coast towards Cape Schanck and Western Port, and came to anchor at 9h. 30m. P.M., under the west end of Phillips Island, at the entrance of that spacious port, and the following day, after examining the shores, and sounding the entrance, stood along the north side of the island, and came to an anchor off a low sandy point, its north-east extremity half a mile from the shore.

Our stay at Western Port was until the 19th, collecting materials for a plan of the place, and the outer coast, together with wooding and watering fully occupied our time; and we were agreeably surprised at finding so much more commodious a resting place than from the directions we had been led to expect. The greater part of the time it blew hard from north-west to south-west, and no inconvenience was felt, the ship lay perfectly quiet, and only once was it necessary to suspend the watering, and then for a few hours only. The boats might at all times have communicated with the shore.

An excursion was made to endeavour to find the remains of the settlement without success; and as our only object on that head was to satisfy curiosity, nothing more was thought about it. Little was found to interest the curious; a few rare insects, and the kangaroo of a small description was seen on Phillips Island, of the latter none were taken. The black swan was numerous, and being the moulting season, many were shot, and some run down by the boats; they afforded us several good meals.

The entrance to this excellent harbour is between a bold cliffy projection on the main, called North Head, and Point Grant. After passing the latter which is a round head, appearing at a distance like an island, and has some detached uncovered rocks half a mile to the south-west, the island gradually becomes lower, and is covered with a thick stunted tree. Sandy beaches skirted with outlying rocks, which at low water uncover to the distance of two cables from the shore, form the general character of the northern part of Phillips Island.

The opposite coast is higher and more cliffy; it also gets lower as Sandy Point is approached; from hence it trends abruptly to the northward, and with the shore of French Island, forms a deep inlet that our time did not admit of examining.

From abreast of Red Point in Phillips Island, which must be given a berth to in passing, a bank of sand particularly dry extends eastward, and joins Sandy Point, narrowing the channel to three-quarters of a mile. This bank is steep to, but shews distinctly; and as the tides set along its side there is little danger of getting on it, in turning in or out.

There is also a bank that uncovers from the shore, running along the south side of French Island; it likewise is steep to, but from not shewing so distinctly must be avoided. There is a long mile of clear water

between it and Phillips Island, which may also be approached within a quarter of a mile all along, therefore there will be no necessity to borrow on those banks. The tide runs about two knots in mid-channel; which with the ebb and a fresh westerly wind causes an unpleasant ripple off Red Point, and at the entrance.

We found fresh water by digging in the centre of a clump of bushes quite at the extreme of the north-east point: at high water this became an islet, and in consequence the water was occasionally brackish; no doubt better might have been found in the neighbourhood, as the usual indications were observed.

Leaving Western Port on the 19th, we pursued the examination of the coast toward Cape Paterson, the wind was light from the north-east with passing intervals of fog, so that small progress was made.

The south side of Phillips Island is partly in the shape of a crescent: between Point Grant and the Pinnacle Rock, the coast is cliffy from one hundred to two hundred feet high, thence to Cape Wollami is a sandy bay with hillocks covered with verdure. We saw nothing to prevent a ship standing in as far as a line between the extremes of the island. On revisiting it, the bank off Point Grant, marked by Flinders, was seen; ten fathoms was the least water we found on it; but it is not improbable there may be less, for not having seen it before we passsd over some portion of it before the lead was hove.

Cape Wollami, the south-east extreme of Phillips Island, is a remarkable headland, in the shape of a helmet, and may be readily distinguished from being the boldest land near the sea coast about this part. There is a narrow entrance to Western Port between it and the opposite point of the main land, but from the strength of tide, and flats extending off the shore on either side, it is intricate and difficult of access.

From hence we worked along towards Cape Patterson, from one to two leagues off shore. The coast here is low and sandy, with grassy hillocks reaching close to the sea, and regular soundings at a moderate distance off it. We anchored about two miles to the north-west of Cape Patterson, in twenty-three fathoms, but the wind coming directly on shore during the night obliged us to weigh, and stand to the southward.

The morning brought light and variable airs with a thick fog so that the land could not be perceived a league off, and at noon the examination of the coast eastward was abandoned, until a future period, and a course shaped towards Port Phillip. The soundings were found to be tolerably regular, except off the entrance of Western Port, where there are some deep holes, the depth varying, and as quickly returning to its former depth.

At eleven the next morning we passed Point Nepean, stood up the west channel, and came to in Hobsons Bay at five P.M. Our business here detained us the two following days; and on the 23rd we were again underway; and in steering through the south channel grounded on the elbow of the northern bank, in consequence of running with the sun ahead. This is the second time of being led into a scrape from the same cause, a sufficient warning not again to attempt what prudence would dictate not to be done. The flood tide had just made, and set

strongly across the bank, we were then on so that she was not got off until the returning ebb.

This detention made it the next noon before we passed the entrance: our course was then held with a moderate south-east breeze and fine weather towards Kings Island, carrying soundings from forty to sixty fathoms, the depth increasing as the island was approached. By eight the following morning we were abreast of New Year isles; and with a favourable wind ran along the west side of Kings Island, carrying an outer line of soundings: in the evening the anchor was dropped near the former berth on the south-west bay of Kings Island.

Daylight of the 26th saw us with an easterly wind, steering for the Minerva or Bells Rock, but as the day advanced the breeze fell light, and our intention of setting this doubtful question at rest was frustrated, for the flood tide carried us rapidly between its assigned position and Reids rocks.

Many whirlpools and eddies were observed; the most suspicious looking one I myself sounded in, from one of the boats purposely lowered; no bottom was found with twenty-five fathoms of line.

We had now an excellent opportunity of viewing Reids Rocks;—they extend in a north-west and south-east direction, and cover a space of some miles. At the north-west end there is an uncovered lump half a mile in length, about fifteen feet above the sea, and when seen from the south-west takes the form of a saddle. Due south from this is another uncovered lump, surrounded with breakers, but considerably smaller than the former; a passage between them may probably exist, but except in case of necessity, it would be highly imprudent to run the risk.

The French charts exhibit a cluster of sunken rocks to the northward of the largest lump,—we saw nothing of them, and as their survey of Bass Strait is far from being accurate, and a good look-out was kept, I am inclined to think that they either do not exist, or are a distinct shoal imperfectly laid down.

Reids Rocks are unquestionably the principal, and perhaps, only danger to be avoided in passing through the strait, south of King's Island. They may be passed on either side, but must be approached with caution, for the soundings do not indicate their vicinity, and as the tide runs rapidly among them, should a vessel be unfortunate enough to become entangled, not a soul would remain to tell the tale.

From these rocks we carried a line of soundings to the Black Pyramid, over a mixed bottom of sand and shell; within a league of its east side there is twenty-four fathoms. This is a remarkable lump of black rock, rising abruptly out of the sea to the height of several feet; its steepest side is on the south-west, the east slopes more gradually, and is slightly covered with verdure; there does not seem to be any danger more than half a mile from it.

We stood off and on during the night, keeping sight of the Pyramids, and in the morning with a freshening breeze from south-west, stood towards the south Black Rock, passing about a mile to the southward of a small cluster of rocks lying off it; our course was held to the northward, between it and Steep Head Island, with the view of completing the examination of the passage between Barren Island and Cape Grim.

Our former opinion concerning this point was now fully confirmed, and we became perfectly satisfied that no serviceable channel existed.

In case of necessity, a passage might be effected, by passing between Steep Head and Barren Island, but except under such circumstances it should not be attempted, for the whole space is strewed with rocks, among which the tide sets from two to four knots, and being thrown out of its course by these scattered dangers, causes heavy ripplings and eddies, in which a ship would become almost ungovernable. The west side of Barren Island presents an uninviting appearance to shipping, it is moderately high, slopes gradually to the coast, and is covered with thick brushwood; ragged rocky points, with numerous outlying rocks, form the general feature, but we did not observe any sunken rocks,—all the dangers seemed distinctly visible between it and the two black rocks. The Beagle passed through this channel, and between the north Black Rock and Albatros Island, with regular soundings, increasing quickly towards the latter; the flood tide set with us about two knots an hour.

By the time we were abreast of Albatros Island the wind had freshened to a brisk gale, and it became necessary, under treble reefed topsails, to make for an anchorage; fortunately our old berth on the west side of Three Hummocks Island was not far off, so passing a reef between Albatros and Barren Island, we rounded the north end of the latter, but it blew too hard to admit of reaching our former anchorage, and we brought up in seven fathoms water, in the sandy bay on the north-west side of the island.

It blew a fresh gale from this quarter until the morning, when it veered round to the north-east, and the ship was moored to the spot she had formerly occupied. The two succeeding days it blew a hard gale from the eastward with squally gloomy weather, and on the morning of the 30th shifted in a squall to W.S.W., and continued to blow hard from that quarter with heavy squalls, (with only a short interval,) until the 6th of February.

This day, the 6th, being more moderate, we left our snug resting-place, and occupied the day sounding between Hunters Isles and Circular Head, and in the evening brought up in the bay on the north side of the latter, near our former berth.

We found everything at the establishment in the same prime order as on the former visits, and the hospitality of the superintendent, made us regret that our stay must unavoidably be so short. Early on the 9th we bade adieu to this flourishing little spot, and with a freshening gale worked up to an anchorage under Robbins Island.

There seems to be no end to the bad weather in these straits; we were again detained at this anchorage for two days, with the heaviest gale that had been experienced since our arrival. It came in violent gusts from west, accompanied with heavy peals of thunder; vivid forked lightning, and much rain. Upon enquiry afterwards at Port Phillip, it appeared the same had been felt there, and committed much damage among the buildings then in progress: from the havoc it caused, the residents designated it by the name of "Tornado."

On the 11th we left this blowing spot, and with the wind still fresh from the westward carried a line of soundings past the east side of Three

Hummock Island, and thence across the strait to Sea Elephant rock, about the centre of the east side of Kings Island, and had an opportunity of verifying the position of some shoal water laid down in the French charts, two leagues due east of the middle of Sea Elephant Bay. At this distance we fell suddenly into seven and six fathoms, and from thence towards the rock, the depth varied between ten and sixteen fathoms. There may probably be less water in this neighbourhood; so, until it is more fully examined, vessels will do well to keep a sharp look out on approaching it.

In the evening we came to an anchor on the north side of the Sea Elephant Rock, between a reef extending off it to the north-east and the opposite shore of Kings Island in seven fathoms water.

The following day was occupied in making a sketch of this anchorage, and tracing the north-east part of Kings Island. The former is the only sheltered spot on this side; and although small, is nevertheless a tolerable place of refuge from easterly gales.

Sea Elephant Rock by which it is formed, lies off a sandy projection of Kings Island; is about three-quarters of a mile in circumference, a hundred and twenty feet high, and covered with a tough wiry grass. A rocky reef lies off its northern part to the distance of a mile, apparently unconnected; but our short stay did not admit of ascertaining if a safe passage existed between.

Between the reef and the shore the soundings are uniform, decreasing gradually from ten fathoms over a clear sandy bottom to the beach; near the reef the ground is uneven; and a berth should be given the end in passing a little north of the sandy point, jutting out towards Elephant Rock; there is a salt water inlet with a depth of two fathoms in it, which appeared to run a considerable way inland, but as the entrance is too shoal to admit even a small boat it is rendered completely useless.

We saw numerous kangaroo tracks among the thick shrubs that everywhere cover this part; two wild dogs were seen by the party that visited the island, but they would not approach within gun-shot. It is curious how they manage to subsist, for it is only at a particular season that the mutton bird, (which burrows in the ground), is to be found on the island: at other times a few shell-fish adhering to the rocks is all that can be found at all capable of sustaining life.

From this bay to the north-east point of Kings Island the coast is low and sandy, from thence to the north-west extreme it assumes a totally different aspect; tolerably high grassy sand hills fronted by alternate rocky projections, and small sand bays with clusters of straggling rocks a cable's length off the shore, form the general character; towards the north-west it is higher and more rocky. We anchored in a wild spot, near that point, and in the morning proceeded to examine the much dreaded Harbingers, and misplaced Navarin Rock, which, from our anchorage the previous evening, was both seen and heard: none of them proved so formidable as we had been led to suppose.

The latter is a small cluster about a quarter of a mile in circumference, close to their north-east and west sides; we did not pass to the south, but there is little doubt that a free passage exists between these rocks and the shore.

The Harbingers are similar to the Navarin Rocks, two small clusters

(or more properly single rocks) lying north-east and south-west, a mile and a half from each other, and some miles from the north-west point of Kings Island; the south-west is always visible, but at times when the water is still the other does not shew. The Beagle passed within a short mile along the outer part of these rocks, and between them within a quarter of a mile of the south-western, with not less than twenty-seven fathoms, so that the danger is from the great depth in the immediate vicinity giving no warning during the night, or in thick weather, added to the strength of tide which runs more than a knot an hour in the neighbourhood of these reefs.

As the little fine weather we occasionally experienced seemed now entirely at an and, and the time for our leaving the straits was approaching, the course was shaped towards Port Phillip, in order to complete the plan of the entrance before our return to Sidney.

Our kind friends at Melbourne seemed to vie with each other during our short stay among them in their attentions, and endeavours to make it as agreeable as possible; several pleasant excursions were made and many more planned for our amusement, and no little regret was felt at leaving this astonishing rapidly rising, and happy town.

On the 1st of March we bade a final adieu to our hospitable friends, and proceeded towards Sydney. In standing down the bay we again saw the necessity of something to point out the channel; two vessels were on shore at the same time, the nearest, a large brig, was assisted off by us; indeed, few vessels that trade to this port escape unscathed, and all this may be easily avoided by a few buoys and a competent person to superintend the port.*

A slight detention at Western Port, and a succession of fresh easterly winds among the islands at the eastern entrance of the strait, made it the 11th before we reached Sydney. The time here was fully occupied provisioning the ship and making other preparations for the next cruize to the north-west coast, and Torres Strait, besides making up the charts for the Hydrographer's office.

As the Beagle's next trip was to be a repetition of the same heated atmosphere experienced last year, I did not, in consequence of my wound, (which was occasionally very troublesome) consider my health sufficiently good to undergo the trial, particularly as the greater portion of the work would be gleaned by the boats, in which service I could now participate so little. Therefore, consulting with the surgeon, (Mr. Bynoe,) who concurred with me, I mentioned my inability to proceed on the voyage to Captain Wickham, at the same time requesting that a survey might be held on me.

Accordingly, a few days prior to the time appointed for the Beagle's departure, (the 18th of May,) a survey was held, by Messrs. Dabey France, and Bynoe, surgeons, and Mr. Tait, assistant-surgeon of the Beagle, whose opinion was, that it was necessary for my health not to go on in the Beagle, but, that I should be allowed to return to England.

* This has been remedied by buoys placed. Our present number also contains the notice of a light at Williamstown of Melbourne.—Ed.

China.

Capture of Chuenpee and Tykoktow Forts, *on the 7th of January.—From the Canton Register.*

The boats were manned and armed, and the Royal Marines of the squadron under Captain Ellis, were ready to land on the morning of the 7th.

The detachments of the 26th and 49th regiments, 37th Madras Native Infantry, and Bengal Volunteers, embarked on board the steamers, Enterprise and Madagascar, and were conveyed to the point of debarkation and landed in the transports' boats.

Captain Knowles commanded the artillery, having under him Lieut. the Hon. —Spenser; the force of this army consisted of two 24-pounder howitzers and two 6-pounder guns. The guns were worked by the artillerymen, but to each howitzer thirty seamen of the Blenheim were attached, and to the 6-pounders fifteen seamen of the ships from which they were landed, to drag them into position. The guns were placed on the ridge of a hill commanding the entrenchment.

The Queen and Nemesis took up a position within good shell distance, as the depth of water allowed, and attacked the fort on the hill, which was soon deserted.

The Calliope, Hyacinth, and Larne weighed, and proceeded above the batteries to be ready to attack in that quarter, and to capture the junks. Capt. Herbert commanded this portion of the force.

The Samarang, Druid, Columbine, and Modeste, were ordered to make a simultaneous attack on Tykoktow, the object being to dismantle the fort. Capt. Scott had charge of this division.

The Madagascar and Enterprise having landed their troops proceed to join the Calliope's division.

All the dispositions having been made, and the troops landed at the watering place to the southward of the island, they formed, and pushed strong covering parties in advance of the guns, and then waited the effect of their fire, as well as that of the squadron; they then marched in two bodies on the hill fort into which the Queen and Nemesis had previously thrown some shells; on reaching the intervening valley, the stockade opened a fire on the troops; but was soon silenced by the field pieces, placed, as noticed above, on the edge of the hill; the troops (the Cameronians and Marines) then pushed forward up the hill, and took possession of the fort, whilst the Bengal Volunteers and the 57th Madras Native Infantry debouched from the valley to the northward, and then left, shoulders forward, marched round the hill. After driving the Chinese, who made a handsome defence, out of the stockade, the Cameronians and Marines deployed, and rushed down the hill on the lower and largest fort, entered the embrasures, and drove all before them, the garrison escaped through the northern gate, when, in a few minutes, they were intercepted in their *sauve qui peut* retreat by the native troops, which had debouched from the valley, who opened a most destructive fire upon them. This spot, a short distance from the northern gate and beach, was the slaughter-house: it was here the hiptae, a mandarin of the third class, was killed, obstinately refusing quarter from a serjeant of marines, who ran up to him as his people were carrying him off severely wounded. He cut at the sergeant, who parried the blow with his bayonet, and nearly had the worst of the encounter. The Chinese, with the Cameronians and Marines in their rear, and the native troops in front, rushed into the water to escape, but there fell beneath the united fire of the troops. It should be here remarked, that the Chinese do not understand either giving or taking quarter in the European military sense of those conditions; many of the Chinese, when in the water, fired their matchlocks at the native troops, and then threw them away and made no submission; but this hit-and-fall-down proceeding the Sepoys did not understand, but returned the fire of the Chinese—of course with fatal effect.

The left division, led in splendid style by the Druid, Captain Smith, were in their stations about half-past ten o'clock A.M. The Druid reserving her fire, although a brisk cannonade was kept up from this extensive fort until she dropt her anchor, when instantly she poured in a destructive broadside; her example being followed by the other ships, as they came up in succession. A landing was effected to storm the fort, but the Chinese obstinately defended themselves at the north gate, being driven by the broadsides from the batteries, but not until a great many of their guns were dismounted or rendered unserviceable. Several personal encounters here took place; and, to show the obstinacy of their defence, a mandarin having lost his arms, grappled with an officer of the Modeste, and bit him severely in the arm. The Columbine being on the flank, her batteries enfilading the fort, threw in upon the enemy, who were now firing and retiring, a destructive discharge of grape and canister. In an hour the British flag floated over the fort. The enemy's loss was great, but we are unable to speak accurately as to number. Here, as at Chuenpee, the clothes (padded with cotton) of the killed and wounded as they fell, were ignited by their matches and ammunition-boxes, which they carry in front, and the bodies were almost consumed by fire.

Thus fell the forts, stockades, and garrisons of Chuenpee and Tykoktow to her Britannic Majesty's arms on the 7th of January, 1841.

The stockades were well and strongly built, but their situation was not well selected, being commanded by the neighbouring hills. They afford a proof of the advance the Chinese have made in the means of defence. From the freshness of the materials employed in their construction it would appear that they have been erected within these few weeks, while the British Plenipotentiary has been negotiating; and, had they been held by determined men, or rather skilful soldiers, it would have cost our troops some trouble to have taken them. As it was, the marines had a good many men wounded in the attack; and, although exposed to a heavy and galling fire from the field pieces and musketry, the Chinese resolutely defended them for twenty minutes, and it was only a forward movement of the gallant and ever-distinguished Cameronians—not invalids, as they have been elsewhere most egregiously misnamed—and marines that induced them to evacuate the works. The deep dry ditch and breastwork of these defences offered no small obstacles to our attacking force. Some amusing scenes occurred whilst our men were struggling who should be the first up the steep and hard clay sides of the dry ditch, proving how totally reckless are British soldiers and sailors "in the day and hour of danger."

During the attack Major Pratt of the Cameronians, was seen a long way in advance, under the very defences of the enemy, with admirable coolness making a reconnoitre of their position. The gallant Major, on looking through one of the embrasures, saw there was a body of Chinese close to it, when he coolly turned to the only soldier with him, a marine, and said, "Just shoot me one of these fellows, will you?" The action followed the word, and the rest of the Chinese forthwith retired to a more respectful distance.

We do not expect to find in the construction of Chinese forts any exhibitton of engineering skill; they have not had a Vauban. It appears, however, that the materials they employ for the upper part of their works, such as parapets, embrasures, &c., are particularly well chosen for the purpose. It appears to be a composition like Chunam, upon which our shot made but little impression. Most of the Chinese guns were of small calibre, the metal wretched iron, and as wretchedly manufactured, a single blow of a hammer being sufficient to knock off the trunnions; they were all spiked or otherwise destroyed, and most of them were thrown into the sea; the carriages were all burnt. The breastwork and ditches of the stockades escaped with only partial dismantling, but every thing within them has been totally destroyed by fire, and the guns removed, with the exception of a long Spanish piece of larger calibre than usual, which is lying dismounted at a flanking breastwork commanding the approach from the valley at the base of the hill: had this formidable gun been

well served, its shot would have mowed down many of the gallant Cameronians and marines.

The sites of houses of huts are now only to be distinguished by smoking ruins. The ground over the whole extent of the fortifications is thickly strewn with tattered remnants of clothes, &c.; the Chinese suffered horribly from falling when wounded, on their burning matches, which set fire to their padded cotton garments and powder-flasks, which they wear round the waist, and literally blew them up, and burnt them slowly to death. The burial of these black, mangled corpses was a fearful spectacle.

The beach running from Chuenpee fort down into Ansons Bay is strewn with the charred timbers of the junks so effectually destroyed by the Nemesis and boats of the squadron, among which many Chinese corpses are yet lying January 12, 13, and 14. Many of the bodies were large and athletic, much beyond the generalty of the natives of this province.

Just over the brow of the rising ground at the landing place of the Chuenpee fort, great numbers of the dead lie buried in one large common grave, over whom some careless, thoughtless "jolly Jack tar," has raised a board, bearing the following inscriptions:—"This is the road to glory."

The poorer natives do not show any fear at our having taken Chuenpee: numbers of boats are about the fleet, and in many instances the Chinese have returned to seek the bodies of their slain relations, which they have exhumed, and although in a state of decomposition, they are carrying away the bodies in great numbers. But among these exhibitions of filial and fraternal feeling there have been some impostors, seeking their "young brothers," evidently trying to excite the compassion of the officers. Provisions are easily procured. One old man and woman are the only natives left in the island; they were on the point where death was rifest, but would not abandon the hearth of their fathers. The old man was slightly wounded, but is under the care, as are many of the wounded Chinese, of our surgeons. Great praise is due to those gentlemen for the humane attention they bestowed, as far as was in their power, on the wounded sons of Han.

The following anecdote exhibits the base cunning, and callous heartlessness of the Chinese character. A charge was brought by them against some of our men for murdering a man; the charge, however, upon investigation, was proved to be unfounded, and that, instead of a man, it was a bullock that had been murdered. The Chinese said they could produce the body of the murdered man, in proof of their charge; they were required to do so, when they brought a corpse in a state of decomposition, which had evidently been procured for the occasion from the graves in the fort. We have heard of similar charges having been made, and similar proofs having been exhibited, more than once at Whampoa many years ago.

When a place is carried by storm, it is always given up to plunder, but there was nothing found in the Chuenpee fort but a few cloaks and caps; yet one thing was discovered, which, although it may surprise some, will not surprise others—about 160 balls of the "foreign smoke" were found. It is probable the spirits of the Chinese were exalted to the gallant resistance they opposed to our troops by a few additional pipes or pills of this stimulant; and if such was the effect, we think neither the Emperor nor his commissioners will blame its use on that occasion. We are really inclined to think so, from a most singular instance of obstinacy of a Tartar officer at Tykoktow fort, as recorded above, which brings to mind the old ballad of "Chevy Chace" and the gallant Witherington, as well as from the obstinacy of the *hiptae;* although an ignorance of our conditions of quarter, and an ignorant and foolish fear of torture if they were made prisoners, might have had an effect in producing such determined resistance in both cases.

We are conscious the above account requires many corrections.

The proceedings of Captain Smith's division, and the anecdote of the gallant bearing of the *hiptae*, we have extracted from the description of the day's proceedings by the correspondent of the *Canton Press.*

A friend has sent us the following particular statement of the services of the Nemesis. The Chinese say that the shells and rockets thrown by this iron steamer, are the invention of the —— or rather of infernal invention.

A statement of the services of the Honourable Company's Iron Steam Ship Nemesis, on the 7th of January, 1841.

Arrangements having been made by Commodore Sir James J. Gordon Bremer, K.C.B., &c., &c., for the capture of the Chuenpee forts, and the opposite one of Tykoktow — the Nemesis, after disembarking the 37th regiment Native Infantry, took up an advantageous position under the upper battery of Chuenpee, in company with the Hon. Company's ship Queen, and commenced throwing shell with good effect, lodging many within the walls, thereby enabling the troops to advance and take possession, which they did in the most gallant style. This accomplished, she proceeded round the point to assist in silencing the lower fort, throwing in grape, canister, and musketry, thereby distracting the attention of the enemy on the sea-side, and giving the troops, and some of the Hyacinth's crew, whom we observed scaling the walls, greater facilities for entering, which they speedily did, driving all before them. She then pushed on to attack the "war junks" strongly moored at the mouth of a small and shallow river, at the bottom of Ansons Bay, and when within 500 yards commenced a heavy fire of shot and shell on the four largest, which was returned by them. The first Congreve rocket fired by her took terrific and instantaneous effect, blowing up one of the largest with all her crew. The others being soon silenced, she then despatched her boats, in company with those of her Majesty's ship Sulphur, and one or two others from the Larne, Calliope, and Hyacinth—junk after junk was boarded and set fire to. The whole, eleven in number, blew up as the fire reached their magazines, and thus were completely destroyed. She now proceeded to a town up the river, much to the astonishment of the natives, and brought away two war junks which were moored to the shore, without firing a shot or receiving any; such was the consternation at her appearance alone at a place only navigable for junks. We understand that the Commodore expressed himself much pleased with what the Nemesis had accomplished; and a remark made by Captain Elliott, the chief superintendent, that the Nemesis had done the work of two line-of-battle ships, proves her services were somewhat important.

On the 8th of January, agreeably to the instructions from the Commodore, the Nemesis, in company with two rocket-boats from her Majesty's ship Blenheim, took up a raking position about 1,100 yards distant from the Anunghoy fort, mounting 100 guns, and commenced throwing shot, shell, and rockets, with the greatest effect, which was not returned, from the peculiarity of the position she was enabled to take up from her light draught of water; indeed, the enemy could only bring four guns to bear on her, and these were of small calibre. Ten minutes, or thereabouts, after commencing firing she was recalled by the Commodore, he having received a chop from the Chinese, which ended in his hoisting a flag of truce, and ceasing operations for the day. Of course the particulars given above refer more immediately to the Nemesis, but every praise is due both to the men-of-war engaged, and to the European and native troops which formed the storming party. We learn that the Chinese admiral who commanded the largest junk, escaped severely wounded; after the action he sent requesting that the red ball of his cap (which he lost in his retreat) might be returned to him, as it is the emblem of his rank, and its loss would greatly degrade him. It has since been found and returned to him through the kind and honourable exertions of one of our countrymen.

IRONSIDES.

It is known that the British plenipotentiary, through some one of the prisoners, sent a message to the commandant of the Anunghoy fort, saying, that if

he would haul down his flags, hostilities should cease. The commandant replied, "That though he desired peace, he was also prepared for war." The flags, however, were hauled down, and have never, we are told, been hoisted since.

We have not a sufficiently correct knowledge of the proceedings of her Majesty's plenipotentiary on this occasion to offer any comments upon them; but we have heard that the whole fleet is disgusted at the total want of any dignified bearing on the part of the British plenipotentiary, when treating through the medium of old tanka men and women and officers of the lowest grade, with the higher military officers of the most punctilious nation in the world; and when we say the whole fleet, we mean emphatically the whole, including officers of all grades, with the exception of his Excellency the commander-in-chief.

On the 13th her Majesty's ships Calliope, Sulphur, Modeste, Columbine, and Starling, moved up the river to the westward of the north and south Wantung islands. Captain Maitland, Major Pratt, and Captain Knowles, landed, and crawled up to the top of the south Wantung hill, to reconnoitre the fort; they were observed by the Chinese, who trained their guns to bear upon the ships, but did not fire.

We regret to state that in blowing up Tykoktow fort, Lieut. —— the first of the Modeste, was struck by a stone on the right thigh, which broke the limb, and rolled down on his left leg and broke that also; but it is hoped the fractures will be safely reduced.

On Tuesday, the 26th ult., as we have been informed, the British flag was to be hoisted at Hong-Kong, and a portion of the force to be disembarked, to take formal possession of the island in the name of her Majesty. The troops were then to re-embark and to remain on shipboard until proper quarters were provided for them on shore. Captain Elliot was to proceed in a few days in a steamer up the river to Second Bar, where he was to have an interview with the Imperial Commissioner Ke-shen.

The following particulars regarding the loss of the Kite have at last transpired, from communications obtained from the captives at Whampoa. This vessel struck on a quick-sand off the coast during a squall, and capsized immediately. Captain Noble and child were thrown into the sea and drowned, and Mrs. Noble was also washed overboard, but saved with great difficulty by Lieut. Douglas, of the Royal Navy. How many survived does not appear, but Douglas and Mrs. Noble, with several others, Lascars and soldiers, got into one of the ship's boats, in which they were for the space of four days, and they had nearly succeeded in effecting a bargain with a junk to convey them to Chusan, when they were pounced upon by the mandarins and conveyed prisoners to Ningpo, where they were at first most inhumanly treated. Poor Mrs. Noble, like the rest, was thrust manacled into a cage, the only difference in her treatment being that her irons were lighter than those put on the men. This by degrees gave way to milder treatment, until they were all at last allowed apartments, bedding, &c., in their prison, and finally some further indulgencies were granted, much contributing to their comfort.

We have also received an authentic account of the circumstance attending the capture of Captain Anstruther, which differ in every particular from what has yet been published on the subject. It appears that this officer, while out on a survey, accompanied only by an old and favourite native servant, was surrounded and attacked by a crowd of Chinese, whom, armed only with the spade his servant had brought with him, he manfully kept at bay, until the numbers augmenting, and seeing his poor follower, whom he vainly endeavoured to rescue, inhumanly murdered, and all retreat precluded, he endeavoured to fight his way through the mass that encompassed him on every side, but was of course overpowered by numbers, and struck down, with some severe cuts on

his head, from the effect of which he, however, very shortly recovered. Further particulars of this transaction we shall be able to give in to-morrow's number. An order had gone up to Ningpo from the Imperial Commissioner, directing the immediate release of all the prisoners detained there.

Some disappointment has been experienced at the Enterprise bringing no letters or papers for this; but we understand information was duly and timely given of her intended departure on the evening of the 23d, and the omission, from what we learn, appears to have originated in a belief that she would not sail until the following morning.—*Singapore Free Press, Feb. 3rd.*

The Maplin Light-house.

In the second volume of the Journal,* page 38, we gave a description of the foundations of a light-house to be constructed on a novel principle, by direction of the Trinity-board, under the superintendance of Messrs. Walker and Burgess, the eminent engineers; the spot selected was the southerly point of the Maplin Sands, which form the northern extremity of the Swin Channel, at the entrance of the river Thames. The foundations, as we before described, consisted of nine of Mitchell's patent mooring screws, with shafts of wrought iron five inches in diameter and twenty-six feet long, one was fixed in the sands in the centre, and the remaining eight at the angles of an octagon forty feet diameter the screws were turned into the sands to the depth of twenty-one feet six inches, the top being then within four feet of the low water mark of a spring tide.

After the screws were fixed in August 1838, it was determined to leave them for a few months; from that period to June 1839, every change in the surface of the sand was observed, and notwithstanding that in the early part of 1839, there were several storms of more than ordinary violence, yet the screw piles stood firmly, and the sand at no time was lowered more than three feet. As a precautionary measure, the engineers had constructed an open platform or raft of timber in two thicknesses, crossing each other at right angles, and bolted together at their intersections, which covered the whole site within the piles, and also extended some distance beyond them; round the exterior was raised a curb eighteen inches high; over the platform was laid brushwood, and then about 200 tons of rough stone which sunk the raft on to the sand and prevented it being displaced; between the spaces of the platform and the brushwood the sand was allowed to work its way up, which soon filled the interstices of the stone. Very shortly after the whole of the platform and stone was embedded below the surface of the sand, which gave considerable support sideways to the screw piles, and formed a solid body for the water to wash upon. Nothing farther was done on the spot till the framing for the construction of the light-house was ready to be fixed in August 1840, when upon a careful examination it was found that the raft had completely settled down, and the piles as firm as the first day they were screwed in,—it was then determined to proceed with the erection of the superstructure, which we shall now proceed to describe. The lower part consists of eight cast iron pillars eighteen feet long, eleven inches diameter externally, and nine internally, they are fixed at the angles of the octagon, and in the centre there is a similar pillar twenty-two feet long; the lower part of the pillars forms a socket, and is fitted over the top of the shafts of the screw piles to the extent of four feet, to which they are attached by adjusting screws of wrought iron; the upper part of the pillars also forms a socket twelve inches clear diameter, and four feet deep, into which are fixed the principal posts of the timber framing—these pillars are fixed inclining towards the centre. The pillars are tied together at top and bottom with wrought iron horizontal bars two inches and a half diameter, fitted with collars and screw bolts; similar bars are fixed on the same level in a raking position to the

* We quote from that useful work, the "*Civil Engineer and Architect's Journal.*" Published monthly, at 57, King Street, Westminster.

centre pillar, by the aid of which the whole are firmly tied and braced together —the top of the pillars stand about four feet above high water mark of a spring tide. The timber framing was commenced by first fixing the centre post twenty-one feet long and fourteen inches square, and subsequently those of the angles, thirty feet long, twelve inches square at the base, and ten inches square at the top; they are tied together at the bottom by double horizontal tie beams, twelve by five, and twenty-seven feet long, and at the top ten by four, and twenty-one feet long; the ends are secured to the angle posts by wrought iron nuts and screw bolts and iron knees. There are also raking braces from the angle posts to the centre ten and a half by nine, and fifteen feet long; upon the tie beams are laid the flooring joists nine by three, the principal posts of the carcase framing are six by four.

The interior accommodation consists of a living room twenty-two feet long, and a store-room in the upper part, and store-rooms for coals and water in the lower part. Thus far the erection was completed in October 1840, within a period of three months.

Above the living room is fixed the lantern with a gallery all round—it is a polygon of sixteen sides, twelve feet diameter internally, and sixteen feet high from the floor to the roof; the principal part of the framing is of cast iron—the roof, the interior lining and floor are covered with copper. In the centre, upon a pedestal, is the beautiful apparatus of a second order of Dioptric light, made and fitted up, together with the iron work of the lantern, by Messrs. Wilkins and Son, of Long Acre. The height of the light above the mean level of the sea is forty-five feet, and may be clearly seen from the deck of a vessel, in fine weather, upwards of ten miles off in all directions. The light was first exhibited on the evening of the 10th of February last.

[As the utility and security of this description of light-house has now been tolerably proved, not only in this, but in another instance on a sandbank, in a still more exposed situation off the coast of Lancashire, (we allude to the Wyre,) the piles being covered during spring tides to a depth of thirty feet and upwards, we hope soon to see such structures take the place of those uncertain aids to navigation light-vessels on such sandbanks, as the Goodwin, Hasborough, and many others that surround our coasts, on which there is such an annual sacrifice of life and property. Ed.]

Plymouth Breakwater Light-house.

A light-house is in course of erection upon the western extremity of the Breakwater, the first stone of which was laid by Admiral Warren, on the 22nd of February last, it was designed by Messrs. Walker and Burges, the engineers of the Trinity Board, in July last, and submitted to the Admiralty. Shortly after, their lordships gave directions for its immediate construction. It is to be erected upon an inverted arch, the foundation of which is laid about one foot six inches below the level of low water spring tides; its centre at top is at the distance of thirty-seven feet six inches from the western end or head of the Breakwater, and at the level of low water 195 feet. The diameter of the head of the Breakwater at the level of low water is 390 feet, and at the level of the top of the Breakwater seventy-five feet. The light-house is to be of granite fourteen feet clear diameter, the centre of the light will be fifty-five feet from the top of the Breakwater. The interior will be divided into floors, forming a store-room, a dwelling-room, a bed-room, and a watch-room. The lantern twelve feet wide and seven feet six inches high, is to show a Dioptric fixed light of the second order, with mirrors; the south half to show a red light, to distinguish it from the coast lights, and the north side towards the Sound, is to be white. The stones of the lower courses are to be secured with dowels of slate, independent of a vertical and horizontal dovetail; the dowels are eighteen inches long and six inches square at the centre, and sunk eight inches into the lower course of stone; both ends are dovetailed and secured in their places by plugs in the upper, and by wedges in the lower stone. It is expected that the light-house will be completed by the end of 1842.

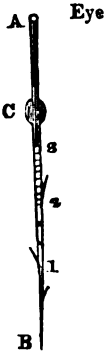
Sounding.

Plymouth, March 4th, 1841.

Sir.—The manner whereby seamen ascertain the nature of anchoring ground in unfrequented, or imperfectly known roadsteads appears to me to be very unsatisfactory. The usual method is to *arm the lead* with a little tallow, which brings up from the bottom a portion of the soil; a conclusion is then drawn of the *quality* of the bottom forming the anchorage. It must, however, be apparent that this method only shews the nature of the soil forming the superstructure at the bottom, and therefore, a single inch in depth of fine sand may cover hard rock, and thereby indicate anchoring ground where none really exists! The excellence, or otherwise, of holding ground must obviously depend on the *quality* as well as *quantity* of the soil forming the bottom of the sea.

A very simple and cheap machine was used by me for testing the anchorage in Plymouth Sound, and as every ship might get one made for a few shillings, it is surely desirable one should be onboard to try the nature of any bottom wherein it may be expedient to anchor.

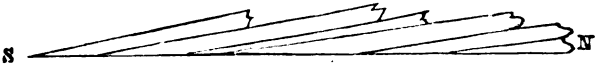
A B is a bar of iron about one inch and a half square, and three or four feet long, with an eye at A, and pointed with steel at B. C is a knob of iron to increase its weight, and from C to B the graduated scale will shew the depth to which it enters the soil, and when greased the *quality* will be ascertained.



This machine should be as heavy as a deep-sea lead, and when thrown overboard will descend point downwards, being guided by the line: on entering the soil, the graduated scale will shew the depth to which it has descended: the barbed notches on the side, or its greased surface, will indicate the *quality* of the bottom.

I take this opportunity of giving a very useful hint relative to anchoring on rocky ground, which is now often done with chain cables. Seamen are seldom geologists, and their attention may probably be drawn to the subject. The rocks forming the cliffs on a coast are generally of the same kind as those forming the bottom of the adjacent sea. Now the dip of the stratified rocks may be seen above water, and hence the dip of the rocks lying under water may be inferred.

The dip of all the rocks near Plymouth is toward the *south*, and the rugged top towards the north (the Mewstone is an example.)



Let S. N. be a section of the stratification near Plymouth, dipping from north to south; it is evident an anchor might be dragged from south to north, with little chance of hooking the rocks; but if dragged from N. towards S. against the grain, it would soon meet with resistance, and would either hold on, or be broken. Now this is precisely what happens at Plymouth, whenever ships anchor over parts of the

bottom that has been scoured by the tide, they drive northward; but in driving the other way the anchors or cables soon get fast among the rocks.

Those, therefore, who are compelled to anchor on a hard or rocky bottom should have an eye to the dip and stratification of the rocks on the adjacent shore, and calculate accordingly. It would be an improvement in chart making to insert the dip of rocks upon the coast, and also their geological character.

I am, &c.

WILLIAM WALKER,
Queen's Harbour-master.

To the Editor of the Nautical Magazine.

COLLISION OF STEAMERS WITH SAILING VESSELS.

City of Dublin Steam-packet Company's Works, Clarence Dock, Liverpool, 5th April, 1841.

SIR.—Having been a subscriber for many years to your valuable periodical of course the numerous contributions of "Mercator" have passed under my notice, and although I cannot agree with that writer in a vast number of the opinions which he has advanced from time to time, I must, in courtesy, acknowledge that he possesses much talent, and an intimacy with *many* of the scientific subjects he has treated on.

In your number for April "Mercator" again comes before the public as the writer of a letter on "Collisions of Steamers with Sailing Vessels," in which there appears much objectionable matter founded on manifest erroneous data. He says that the crew of the Gil Blas mistook the *light* of the steamer, with which she came in contact, for the South Sand Head light; if this were true, I think the owners of the steamer had hard justice dealt out to them by the jury before whom the case was tried, for surely they would not have condemned the Royal Adelaide in damages and other heavy costs, if the crew of the Gil Blas *mistook* one light for another; such a mistake would clearly take the onus off the vessel carrying the light. But the fact is, and it was proved in court, the steamer had her *three* lights burning, and the collision occurred from the want of a "rule of the road," in passing in the English Channel.

"Mercator" says in his next paragraph that "a light was observed" on board the Nottingham, by the crew of the unfortunate Governor Fenner, and inferences are drawn that *one* light is not sufficient for a steamer. I will ask Mercator from whence he got his information about a *light*, for the commander and mate of the Governor Fenner, on arrival in Liverpool, deposed to the editors of several journals, that they saw the "lights of the Nottingham, and they *knew* her to be a steamer."

In the next paragraph Mercator asks a question, and answers it himself, assuming that if the steamer "had been properly lighted, *so as to put it beyond question that she was a steamer,*" the collision would not have occurred. Now as the Nottingham was properly lighted, having those peculiar lights in action which Mercator himself recommends a little further on in his letter, and as the officers of the Governor Fenner knew she *was* a steamer, to what will Mercator now attribute the collision?

As regards the peculiar lights which Mercator at this *late* hour recommends, I have only to observe, that they have been in use on board the steamers plying from the port of Liverpool, since the year 1835, and if Mercator has *not* seen a description of them in the "report of the Commissioners on steam navigation," ordered by the Admiralty, I would recommend him to refer to it now, if it is only to prove that *he* is not the inventor;—'tis true Mercator advises the red light to be placed on the *starboard* paddle-box instead of the larboard one, but what extra security that will give I cannot imagine. But I *can* imagine that such a change, if made imperative, would cause serious mistakes on *this* coast, in the same way as putting the helm a *port*, and thus superseding the rule of *starboarding* it, *as adopted in the Irish Channel for years*, has caused many collisions. It has always appeared to me as something very strange, that the East Coast folks are apparently quite ignorant of what is doing on the West Coast.—*Is* it ignorance? Is it jealousy of the *application* of inventions?—the steamers trading to and from Liverpool, have for years been in the habit of *starboarding* their helms when meeting each other. *No rule of any kind has existed on the East Coast.* All at once the "body of gentlemen on Tower-Hill," as the Elder Brethren of the Trinity House, are described by Mercator, drew up a series of nautical arrangements, and recommended that steamers should *port* their helms. To prevent actions for damage in the event of these recommendations not being followed, the rule has been *changed* here, and collisions have been the consequence. The reason why the plan was adopted of *starboarding* the helm, was to cause vessels to pass each other as vehicles pass on the high roads and in our street, —the order to *port* must be bad, because no good reason can be assigned for a deviation from common practice, whether at sea or on land. Again, the steamers trading to this port have for years carried a bright white light under the cross-trees of the foremast,—a bright white light on the starboard paddle-box, and a red light on the *larboard* paddle-box. Those on the East Coast have never had any defined system of lights, and now a recommendation comes from the "east," to place the red light on the *starboard* paddle-pox! why, I cannot conceive, but such a change would cause great confusion in the minds of nautical men here, and must lead to accidents of a frightful nature.

Mercator says, the three lights placed as he describes, would form an "equilateral triangle,"—they would do no such thing, they would make an *isosceles* triangle.

As for Mercator's remarks about steamers not being justified in carrying sails, in the channels of England or on the coast, as an old seaman, and having been seventeen years connected with this Company, I cannot agree in those remarks. Mercator says, "it is pretty clear" that had it not been for the Nottingham's sails, her crew would have seen the Governor Fenner. Again, I am at issue with your correspondent, for how the *fore and aft* sails of a steamer can prevent men seeing to windward, or over the bows, I am at a loss to understand, for Mercator must be told that the Nottingham was never to *windward* of the Governor Fenner, on the contrary, she was to *leeward* of the ship from the moment she was seen to that of the collision. Again, the world is told that steamers are not under command when their sails are set,—indeed!

I always thought they were less liable to be *controlled* by their sails than any other craft, but perhaps it is not so.

With respect to the collision between the Nottingham and the Governor Fenner, the facts were, that the three brilliant lights of the former were visible at a considerable distance, whereas, the night being hazy, with rain, it was impossible to see the Governor Fenner, *she being without any light*, until so close, that the only chance of escape was the starboarding the helm, since to have then ported it would have run both vessels into inevitable destruction. Had the Governor Fenner been a seaworthy vessel she would have received but little comparative damage, but being old and crazy, and unsound, as now appears to demonstration from duly authenticated reports, on the state of the wreck washed on shore and identified,—she was so damaged by the collision that her bottom and stern gave way, and her two sides floated up, gunwale to gunwale, and kept together by the rigging.

I am, &c.

J. C. SHAW,
Marine-Manager.

To the Editor of the Nautical Magazine.

ICEBERGS OFF THE CAPE.

Ship Seringapatam, Madras Roads, September 26th, 1840.

SIR.—On the outward voyage of the Seringapatam, nearly on the meridian of Greenwich, and in lat. 39° S., we fell in with a great number of icebergs, some of them very large and dangerous; the ship was at one time completely surrounded by them; if she had struck one during the night nothing could have saved her. The ice was in large solid blocks, and she was going at the time twelve miles an hour with a strong north-west wind. There is every reason to believe what Captain Horsburgh mentions in his East India Directory, "that greater caution is necessary than hitherto supposed, for it seems very probable that some missing ships have been lost by striking against icebergs in the night, during tempestuous weather." August 7th, 1840, at daylight saw a large iceberg, and at 11 A.M. another larger one; when passing it the ship was going twelve miles an hour.

August 8th; at 1h. 30m. P.M. saw a great many icebergs, some of them very large, and all of them evidently breaking up, with a great many loose pieces of ice; steered accordingly to keep clear of them: at 2 P.M. passed close to a very large iceberg, about one hundred feet high, bearing north: at 2h. 30m. P.M. passed another which upset and turned completely over when nearly abreast of it, at the same time one in sight to the southward, the largest of any seen, with a number of smaller ones; the ship completely surrounded by icebergs and pieces of ice: at 3h. 30m. P.M. no more ice in sight to the eastward from the masthead; kept a good look-out but no ice seen: at 7h. P.M. hauled the courses up and double-reefed the topsails, reefed the mainsail, and kept the ship's head to the northward under topsails during the night, and a good look out: wind north-west to W.S.W., blowing hard and squally; at daylight no ice in sight, steered E.S.E. by compass, and made all sail. At noon, lat. 38° 17′ S., long. 59′ E.—When the ice was first seen the ship was going twelve miles an hour, and if she had struck one of the icebergs she must have been knocked to pieces.

I shall feel obliged by your giving this publicity, as it will caution all commanders of vessels running in those latitudes to keep a good look out; as I am

so certain had we struck one of the icebergs, the Seringapatam would have been amongst the missing ships.

I am Sir,

Your most obedient servant,

W. F. Hopkins,

Commander Seringapatam.

Madras, October 26th, 1840.

Sir.—I beg to inform you that at 5h. A.M. on the 8th of September, we discovered a large iceberg bearing north-east about three leagues distant, the ship being then in lat. 40° 20′ S., long. 26° E.: at 6h. saw four smaller ones, two on the same bearings, and two bearing about E.b.N.; wind moderate from the north-west with fine weather, vessel running with all sail set, hauled up N.E.b. E. to clear the small ones to the eastward. I beg to observe that it had been blowing hard from the eastward on the 6th, and part of the 7th, but had moderated and shifted to the north-west at meridian on the 7th; on that day, at about 4 P.M. we were surrounded as far as the eye could see with innumerable flocks of the snow petrel, the ship being at that time about thirty miles south of the icebergs; the height of the larger berg I should suppose to be nearly 100 feet, the length 140 with a heavy sea breaking on it; the two we passed to the westward were like pillars of ice covered with snow, not more than ten or twelve feet above the water, and about six feet in diameter, and therefore more dangerous than the larger one. I beg to inform you that I sailed in company with the Roxburgh Castle from Madeira on the 3d of July, and lost sight of her on the 5th, she having out-sailed the Ida, I did not observe that she was leaky.

I am, &c.

M. Passmore,

Barque Ida.

[The above have been forwarded by Capt. Biden the Master-Attendant at Madras.

Calcutta, November 17th, 1840.

Sir.—Should you deem this communication of any use to the *Nautical*, I shall feel obliged. As a sailor I am doing no more than my duty towards all who have to plough the deep, in giving any information, it matters not how far from home, and this is copied from the *Calcutta Englishman* newspaper.

"Icebergs.—Instances of icebergs having been seen by vessels on their homeward and outward voyages are becoming daily more numerous, no less than four vessels bound to India have fallen in with fields of ice of considerable extent, during the months of last September and October, and the ice appears to have been met with by those vessels between the latitude of 37½° and 41½ S., and longitude 12° and 36° 19′ E. During the last homeward bound voyage of the Seringapatam, on the 7th of August the vessel was completely surrounded with ice-islands. She was then so far to the westward of the track of these vessels as the meridian of Greenwich, so that it is evident the ice-fields are not confined to a certain latitude and longitude, but extend as far as our present knowledge goes, from the meridian of Greenwich to 41½° E., and no doubt in many other places not yet reported; and here we cannot help repeating our recommendations to all commanders of vessels, voyaging hence through southern latitudes, to be always on the look out for ice, whenever their vessels may be surrounded with flocks of snowy petrel.

"We think it will not be uninteresting to our readers to have the following for reference, as to where ice has been lately seen:—

Ida, on the 18th Sept. in Lat.		40°	20′	South	Long.	26°	00′	East
Earl Durham	"	38	47	"		36	19	"
"	"	37	30	"		36	19	"
Maidstone, on 1st October		37	55	"		12	00	"
Jessica Logan, 22d Sept.		41	30	"		14	10	"
"	23d	40	25	"		19	00	"

" The last mentioned vessel, which was announced yesterday, reports the iceberg seen on the 22nd, to have been about 1,000 feet in length and 400 in height:—that passed on the following day was about 300 feet high and 400 feet long."

I should recommend the thermometer used when in near the above situations which I always found give me plenty of warning to escape them, and that in very foggy weather indeed.

I am, Sir, &c.

J. Cornforth,
Commander Majestic of Liverpool.

Pilot Station off Point Palmyras, and Light of False Point,—*Bengal.*

Fort William, April 21st, 1840.

Orders having lately been received from the Honourable the Court of Directors, that the old station off Point Palmyras shall be resumed by their pilot vessels, during the south-west monsoon. Notice is hereby given, that from the 15th of March to the 15th of September, pilot vessels will cruize as formerly, during the day off Point Palmyras, in latitude 20° 42′ to 20° 48′ north, with the point bearing from west to W.b.S., and anchor usually during the night in a line east and west of each other, when the vessel having on board the first turn pilot, will burn a blue light and maroon alternately every hour, commencing with the former at eight o'clock and continuing till daylight.

Commanders of vessels are hereby informed, that the former light-house on Point Palmyras has been undermined by the sea, and is now in so ruinous a state, that no dependence must be placed on seeing any part of it.

Commanders are further informed, that the new light-house at False Point stands in latitude 20° 19′ 25″ north, and longitude 86° 48′ 8″, rising 120 feet above high water mark, and being coloured dark red, or reddish brown, with a large white star in the centre. The building may be seen in clear weather by day, and the light (formed of Argand lamps with reflectors) by night, from eighteen to twenty miles, at a height of twelve or fifteen feet from the level of the sea.

Commanders are recommended not to come under eight fathoms at the lowest for the purpose of making the light-house, or light at False Point, and having made it, to deepen their water again,—say from thirteen to eighteen fathoms according to circumstances, on steering to the north-eastward for the purpose of getting a pilot off Point Palmyras. They are also recommended, whenever the weather assumes a threatening appearance, and the wind inclines to the eastward to keep a still larger offing, particularly late in the season, as they may expect the pilot vessels to do the same, and that the latter will then be found nearer the tails of the reefs than Point Palmyras.

From the 15th of September to the 15th of March, the pilot vessels will cruize as before, between Saugre Sand and the Western Sea Reef, according to the old regulation.

(Signed) T. T. Harington.

Compass Deflection.

The variation of the magnetic needle, by local influence in the ship, may be produced in two ways:—1st, by two compasses being placed so

near each other as to cause variation, by the attractions or repulsions of their respective poles upon each other, a cause of variation which is obviated in merchant vessels by having only one compass to steer by instead of two, as in ships of war. 2nd, by the action of the ship's iron formerly attributed to induction, but now well ascertained to proceed from all masses of iron in a quiescent state in the ship, being rendered magnetic by the earth's induction, even to the guns, the upper parts being of course the reverse poles of the under. If all the masses of iron in a ship were so situated that a straight line drawn from stem to stern could be made to intersect their centres, than by placing a compass in this centre line, (which, of course, is one in which the poles of the needle would neither be attracted nor repelled), no deflection would be produced as long as the ship remained *on an even keel;* but, as this is impossible, from the iron being scattered in all directions through the ship, then the best securing method of preventing deflection is, to suspend the compass at a sufficient height above the centre of the deck, to withdraw it altogether from the influence of the magnetic iron in the hull; or, at all events, to insure only the upper poles of the hull iron influencing it, by which less irregularity in the deflections would be secured.

Some six years ago it occured to me, that a needle might be constructed in the following way, less capable of being influenced by the attractions and repulsions of the magnetic iron in the ship than the present compass. Instead of a single bar two were made use of with their opposite poles in contact, in the centre of the card, the result of the experiment with it being as follows:—It pointed towards the magnetic north and south like the common needle: while on moving it upon a low pivot stand over, and from end to end of a long magnet, no perceptible dip took place, nor any perceptible deflection of either pole toward the magnet, on moving it in a parallel line along the edge of the latter—one magnet acting as a keeper to the other, consequently no loss of power was sustained by time, the only defect being its unsteadiness; that is, being much more easily agitated and much longer in returning to its magnetic bearing under such circumstances than the common needle. This defect might probably be diminished by future improvements; but, should it be found inapplicable, for the above reason, to sea purposes, none such can apply on shore.

Magnetizing by lightning and electricity, in vessels struck by lightning, the various steel articles on board have not only been frequently magnetized, but the compass poles reversed, in one, even the compass being made to point east and west. This latter could only have been caused by a transference of the magnetism from the ends to the sides of the needle, which, by magnetizing a steel bar laterally, I found to be the case, the whole of one side being a north pole and the whole of the other a south pole. The following experiment (frequently repeated with the same result) shewing the mode in which an electric mass passes along a conductor as well as the mode of magnetizing by electric agency, may not be unacceptable to some of your readers. Having charged a jar with vitreous electricity, a copper wire was twisted into two helixes, one from left to right and the other from right to left, in each of which a needle was placed and a spark from the jar passed

through, when the needles were found to be magnetized, in opposite directions as in similar helixes when operated on by galvanism, but with this difference—that the prob of the jar represented the negative end of a galvanic battery, and the outside coating the positive end.

From the above it would appear, that an electric mass has, like a galvanic current, a spiral motion around a conductor as well as a progress one along it; and that electric masses have a reverse spiral motion to galvanic currents, the motion of electric masses being from right to left; a curious coincidence with the similar motions of hurricanes, whirlwinds, and water-spouts. I failed to charge the jar on board ship with resinous electricity by all the various means recommended, and consequently, was unable to ascertain whether the negative spark had a reverse magnetizing power to the positive spark, which must naturally be the case. Should this latter turn out as I surmise, then a ready way of ascertaining the species of electricity that strikes a ship, may be arrived at by soldering the ends of a horizontal wire helix to Harris's conductor, at some inches distant from each other, in a perpendicular line, and placing a non-magnetized needle in it. As no vessel fitted with Harris's conductor has ever been struck with lightning, the inference has naturally been drawn, that they carry off the atmospheric electricity slowly and silently; and this the helixes would not only ascertain, but also, as I am led to hope, the species of electricity prevailing in different parts of the earth, as I am inclined to believe that the prevailing electricity in the northern magnetic hemisphere is the reverse of that in the southern. Securing needles across the lightning conductor by some adhesive substance, would, no doubt, answer equally well in the helix when strong electric discharges took place, the helix having simply the property of multiplying the revolutions of the electric mass, and thereby increasing its magnetic action upon the needle exposed to its influence.

Naval Rendezvous.

There is so much importance in the following remarks which appeared in the *Standard* lately, that we are induced to transfer them to our own pages. But it is in the light of a safe rendezvous for our men-of-war, or even merchantmen in any future continental war that we attribute so much importance to these remarks. Such a rendezvous as would afford protection from weather and sea, and at the same time allow of a numerous fleet of all sizes of vessels to have a ready access and departure at all times, and in all seasons, from it, is what is wanted, and not a paltry refuge harbour just big enough to contain a few merchant vessels. The insufficiency of Dover even as a packet harbour is notorious; and any work carried on outside of it would be costly. The Downs has been alluded to.—*Query.*—Would our Dutch neighbours have allowed the Goodwin Sands to have remained a prey to the sea as many centuries as we have? We repeat again there is much for grave consideration in the following extract:—

"*Friday Evening, March 19th.*—It is most desirable to direct the attention of the country to that which was the subject of the conversation

upon Mr. Rice's unsuccessful motion last night,—the necessity of providing a capacious harbour of refuge for merchantmen, and of rendezvous for ships-of-war, at some place in the Channel. This great commercial and naval state has at present but three harbours in England suited for ships-of-war, Plymouth, Portsmouth, and Sheerness, and none of these is in a position adapted for military purposes. The immense commerce of London too has to be conducted through a labyrinth of banks which the boldest and most skilful seaman does not encounter without anxiety in the darkness of night, or in foggy or tempestuous weather, but which, nevertheless, he must encounter at present, if at night he arrives near the mouth of the river. The Downs, it is true, affords protection in some winds; but in a wind from the south or S.S.E., or any point between, the Downs is without shelter. Is it right that there should be no harbour of rendezvous for ships-of-war between Portsmouth and Sheerness, exactly the most accessible part of the coast to an invading enemy, and exactly that part of the coast from which we could most effectually molest an enemy in turn? Is it right that the commerce of London with the whole world, and what we may therefore call the commerce of the world, should remain in its present state of exposure to danger? Nearly forty years ago the subject engaged the attention of Mr. Pitt, and all that has occurred within the interval gives reason to regret deeply that the exigency of the times disabled that great man from realising the design of defending England by a capacious deep-water harbour at the narrowest part of the Channel, which it is known he entertained.

"The introduction of steam navigation, which must in future bring every contest of naval powers to close quarters and to a short issue, however, leaves us now, if we see our interest or our danger, almost without a choice.

"It is not because we have any ill feeling towards France, or because there is naturally an opposition of interests between France and England, but because of our equality with France in Europe, and because of our proximity to that power, that we must always look to a French war as the most probable, and as that from which we have most to apprehend; and therefore with reference to France most of our defensive measures must be taken. But we are on the coast of Kent within eighteen miles of the French coast, and within less than thirty miles of ports from which France, if we neglect to guard against the danger, might send out war-steamers of considerable power to attack not merely our trade, but our towns and villages. A rendezvous harbour, however, in the narrow part of the Channel, would render such insults impossible—would be the more than adequate substitute for 20,000 men garrisoning the exposed positions on our shores. The proper site for such a harbour is a question for professional and scientific men; but many considerations, to which we shall advert presently, seem to recommend Dover. Now, let us suppose a rendezvous harbour at Dover, with a fleet of war-steamers and line-of-battle ships. Would not such a harbour and such a fleet keep, as it were, so effectually the key of the Channel, that no hostile vessel could show itself between Havre and Flushing,—need we say, dare show itself at the mouth of the river, as, even in the late war, some hostile vessels have done? But this is not all. War, though its

objects be strictly defensive—and we hope England will never have any but a strictly defensive war—must be carried on by offensive operations, or it will be interminable. Now, what an aid would the harbour of which we speak be in an offensive war. A steam fleet in such a harbour would have the whole of the coast of the continent from Rotterdam to Brest at its mercy for a day's run. This is an advantage which would more than double, treble, or quadruple the military power of Great Britain. Let men only look back to the weeks, nay, months, lost in the embarking and transporting expeditions to the Helder, to Walcheren, &c., and they will feel that we do not overrate this prodigious augmentation of power which Providence has given us, if we will only secure the means of exercising it. It is not too much to say, that a rendezvous harbour in the narrow part of the Channel would render necessary an army of at least 200,000 men to protect the opposite coast from invasion by less than a tenth part of the number,—would enable Great Britain to clear out in succession every port from Rotterdam to Brest.

"Sir Robert Peel plainly sees this, though he considers that in his peculiar circumstances it better becomes him to recommend the capacious harbour, which he approves of as a harbour of refuge than as a military post. It is quite true, as Sir Robert said, that a harbour of refuge upon a great scale is what is wanted—and that one such harbour is worth fifty small harbours, and is proved to be worth fifty small harbours by the demands made for the improvement of the latter. Why are such demands made? Because in certain winds or states of the tide these small harbours are of difficult, or dangerous, or impossible access; but give them a capacious refuge harbour in the neighbourhood, and vessels entering such a harbour under all circumstances of wind, weather, or tide, can choose their own opportunity, whether of wind, weather, or tide, to approach the smaller harbour. The question of expense ought not to be weighed for a single moment when such an object as that under consideration is to be obtained—call it 2,000,000 (1,500,000*l.* has been named)—call it two millions, three millions, four millions. Why, as regards the safety of trading vessels, to say nothing of the lives of their crews, the harbours would repay the whole in ten years. The advantages in war would repay it in half ten months. As to the value of the harbour, we have the honour of concurring in the opinion of Sir Robert Peel; but we must respectfully differ from the right honourable baronet as to the time of commencing to provide what is so valuable. Sir Robert hesitates to press it now, in consideration of the expense and the state of the public finances. We think that no consideration ought to delay the pursuit of an object so all important.

"Whatever may be the state of the public finances, the multitude of our railroads proves that the private finances of the country are not in a state of exhaustion. We are not sure that a refuge harbour scheme in shares might not turn out a better speculation than most of the railroads, more particularly if the government would engage itself to pay liberally for the use of such a harbour whenever its use might be required as a rendezvous harbour for her Majesty' vessels. In this way the whole cost might be raised in a few days without imposing any burthen upon the finances of the country. But, however provided, the

harbour ought to be provided, and provided at once. War, should war come, will bring its own expenses, and if the harbour be not in progress before the commencement of a war, there is too much reason to fear that it may be delayed another forty years.

"In conclusion, we shall briefly explain on what grounds we think Dover the preferable place. The position of Dover, besides being opposed at about equal distance to the principal western ports of France, Belgium, and the Netherlands, is a salient position near the French coast, and in the very narrowest part of the Channel; secondly, at Dover you get at once into deep water, free on both sides from banks, an advantage which Dover possesses in an eminent degree over all the ports to the north, and in some degree, though in a less degree, over all the ports to the west—the western ports being otherwise objectionable on account of the expansion of the Channel westward. In the third place, a great deal has already been done for the military defence of Dover, both by nature and art. We know of no position in the Channel suitable for a rendezvous harbour (and such a harbour must be strongly defended), which could be made as strong as Dover now is, except at an enormous expense, an expense probably equal to the expense of the harbour itself. Fourthly, the railroad now in process of completion, and which would of course, be finished before the harbour, will bring Dover within three hours of the seat of government—within three hours of London, whither all the railroads of the island converge, and where, in consequence, the whole military strength of the island might be collected in a day or two. With a rendezvous harbour and a steam fleet at Dover, no camp would be necessary to menace the opposite coast—*all Great Britain would be the camp*. Have we trespassed beyond our province in treating this matter so much at large? If we have, it is because we have a deep sense of its immense importance; and in any case, if our views are false, the public will be the wiser for having the subject fully canvassed."

Notices to Mariners.

Hydrographic-office, Admiralty, March 25th, 1841.

Gottenburg Lights.—The Board of Admiralty at Stockholm has given notice, that;

1. A light-house of stone has been erected on the island of Winga at the entrance of Gottenburg inlet, which will be lighted in the course of next summer. It will shew a fixed light of the third order, and visible from all parts of the horizon at the distance of twelve miles. The light-house stands in latitude 57° 37′ 30″ north, and in longitude 11° 39′ east of Greenwich.

2. Two Channel lights for the guidance of vessels up to Gottenburg are also preparing, one of which will be placed on Buskar and the other on Botto.

Further particulars of all these lights will be published hereafter.

The following are from Lloyd's.

Light-house at Hobson's Bay, Port Philip. The following notice to mariners has been transmitted to Lloyd's by the harbour-master at Melbourne, Port Philip:—

"After the 1st of August, 1840, a plain stationary light will be shown from sunset to sunrise from a light-house erected on the extremity of Gellibrands-

Point, William's Town, Hobson's Bay, visible five leagues in clear weather from any safe position to the southward.

"From the north end of the Western Channel the anchorage at Williams Town bears north 14° east.

"From the north end of Symonds Channel the anchorage at Williams Town bears north 6° east.

"From the north end of the Pinnace Channel the anchorage at Williams Town bears north 5° east.

"From the north end of the South Channel the anchorage at Williams Town bears north 6° west.

"The courses indicated will give vessels a fair berth from the shoal off Gellibrands Point. Care must be taken after bringing the light-house to bear north 67° 30′ west, not to stand into less than four fathoms water on the western shore, and also to guard against a bank which lies off the eastern beach, bearing from the light-house from about north 22° east, to north 67° east, one mile and a half. After rounding the light and bringing it to bear about south, 40° west one mile, the anchor may be dropped in four fathoms water in good holding ground of stiff clay and mud." The bearings are all by compass.

Water at Port Praia, *March 16th.*—"For the information of the shipping proceeding to the south, we beg to acquaint you that water of the best quality is now brought down from the mountains to the beach in iron pipes, at the harbour of Porto Praia St. Jago in these islands, the cost of which is only 320 reis the hogshead. Vessels can take in a supply of water in a few hours."

Patras, February 25th.—The Candiot refugees in Greece having resolved to return to their own country, to raise an insurrection against the Ottoman authorities, have seized upon several vessels in the Modena waters, and taken them to Carabusa, in Candia, whether for this or piratical purposes is unknown. An English schooner was taken off Sapienza by a boat full of armed men, and taken to Candia. The British Consul at Navarino warns all vessels to give the Sapienza isles a wide berth, as the isle of Schieza is the place where the Candiots lurk.

Caution to Mariners Entering Patras. From several vessels having grounded on a bank of soft mud about ½ a mile west of St. Andrews church at Patras, mariners are hereby cautioned of the spot, it not being very generally known.

In our volume for 1834, we gave Sir John Franklin's remarks on Patras, in which the position of the above shoal water is pointed out.—See p. 454.

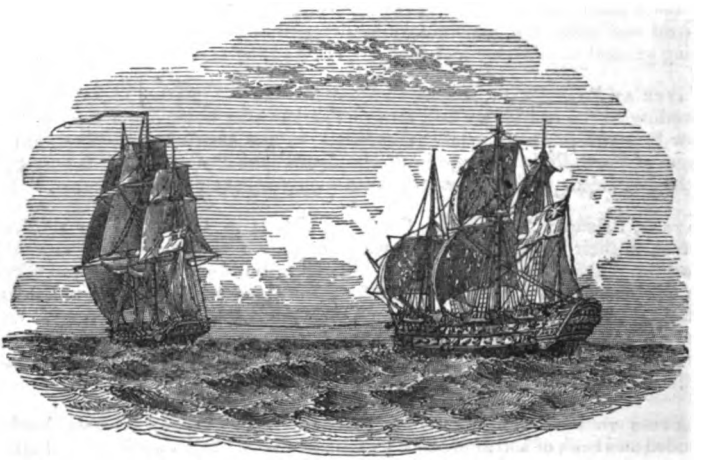
Biographical Memoirs.

The late Vice-Admiral Sir Thomas Dundas, K.C.B., (see obituary,) had been in the navy sixty-three years. The deceased admiral had seen much service and was one of the heroes of Trafalgar, at which glorious victory he commanded the Naiad, when he repeated Lord Nelson's signals. Previously, when in the command of La Prompte, he destroyed a Spanish vessel-of-war of superior force. His commission bears date, lieutenant 15th July, 1793; commander, 2d September, 1795; captain, 9th July, 1798; rear-admiral, 27th May, 1825; and vice-admiral, 10th January, 1837. For his eminent services he was nominated in September, 1831, a K.C.B., and was one of those naval officers who had an honorary reward from the Patriotic Fund.

Commander William Swiney, (see obituary,) entered the service in early life, and served under Howe, St. Vincent, Nelson, Keith, &c.; was junior lieutenant of the Leander, in the battle of the Nile, and also in the desperate action that she fought with the Genereux; was actively engaged in the landing in Egypt; and subsequently commanded small craft in the Mediterranean, coast of Africa, West Indies, &c.

THE NELSON MEMORIAL.—There is so much good spirit, and downright worthiness of purpose in the publication of Colonel Drinkwater Bethune's account of the Battle of St. Vincent, which we have already notified to our readers, that we are induced to take another leaf out of the worthy Colonel's book, with the view of pointing out to their attention that the proceeds of it (after defraying the expenses) are to be added to the fund for the erection of the column in Trafalgar square. This cannot be too widely known, and as a further specimen of the style in which it is "got up," as the booksellers say, we annex the following spirited cuts of some of the effects of the action. We are glad to find that the work is added to the list of books to be found in our Naval Libraries.

H.M.S. CAPTAIN IN TOW OF THE MINERVA.



THE CAPTURED SALVADOR DEL MUNDO IN TOW OF H.M.S. NAMUR.

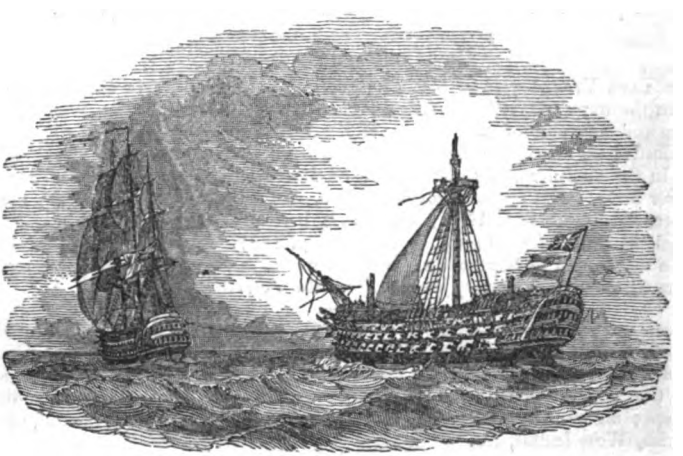


TABLE LXIII.

For converting Cassel Feet into English Feet, and English Feet into Cassel Feet.

1 Cassel Foot = 0·9313116899 English Foot.
1 English Foot 1·0737436358 Cassel Foot.

Cassel feet or Eng. feet.	English feet and Dec. parts.	Cassel feet and Dec. parts.	Cassel feet or Eng. feet.	English feet and Dec. parts.	Cassel feet and Dec. parts.	Cassel feet or Eng. feet.	English feet and Dec. parts.	Cassel feet and Dec. parts.
1	0·931	1·074	40	37·252	42·950	79	73·574	84·826
2	1·863	2·147	41	38·184	44·023	80	74·505	85·899
3	2·794	3·221	42	39·115	45·097	81	75·436	86·973
4	3·725	4·295	43	40·046	46·171	82	76·367	88·047
5	4·657	5·369	44	40·978	47·245	83	77·299	89·121
6	5·588	6·442	45	41·909	48·318	84	78·230	90·194
7	6·519	7·516	46	42·840	49·392	85	79·161	91·268
8	7·450	8·590	47	43·772	50·466	86	80·093	92·342
9	8·382	9·664	48	44·703	51·540	87	81·024	93·416
10	9·313	10·737	49	45·634	52·613	88	81·955	94·489
11	10·244	11·811	50	46·566	53·687	89	82·887	95·563
12	11·176	12·885	51	47·497	54·761	90	83·818	96·637
13	12·107	13·959	52	48·428	55·835	91	84·749	97·711
14	13·038	15·032	53	49·360	56·908	92	85·681	98·784
15	13·970	16·106	54	50·291	57·982	93	86·612	99·858
16	14·901	17·180	55	51·222	59·056	94	87·543	100·932
17	15·832	18·254	56	52·153	60·130	95	88·475	102·006
18	16·764	19·327	57	53·085	61·203	96	89·406	103·079
19	17·695	20·401	58	54·016	62·277	97	90·337	104·153
20	18·626	21·475	59	54·947	63·351	98	91·269	105·227
21	19·558	22·549	60	55·879	64·425	99	92·200	106·301
22	20·489	23·622	61	56·810	65·498	100	93·131	107·374
23	21·420	24·696	62	57·741	66·572	150	139·697	161·062
24	22·351	25·770	63	58·673	67·646	200	186·262	214·749
25	23·283	26·844	64	59·604	68·720	250	232·828	268·436
26	24·214	27·917	65	60·535	69·793	300	279·394	322·123
27	25·145	28·991	66	61·467	70·867	350	325·959	375·810
28	26·077	30·065	67	62·398	71·941	400	372·525	429·497
29	27·008	31·139	68	63·329	73·015	450	419·090	483·185
30	27·939	32·212	69	64·261	74·088	500	465·656	536·872
31	28·871	33·286	70	65·192	75·162	550	512·221	590·559
32	29·802	34·360	71	66·123	76·236	600	558·787	644·246
33	30·733	35·434	72	67·054	77·310	650	605·353	697·933
34	31·665	36·507	73	67·986	78·383	700	651·918	751·621
35	32·596	37·581	74	68·917	79·457	750	698·484	805·308
36	33·527	38·655	75	69·848	80·531	800	745·049	858·995
37	34·459	39·729	76	70·780	81·605	850	791·615	912·682
38	35·390	40·802	77	71·711	82·678	900	838·181	966·369
39	36·321	41·876	78	72·642	83·752	1000	931·312	1073·744

RENNIE'S PADDLES.—We understand that the results of the experiment with the Trapezium Paddle Wheels fitted to the African, and alluded to in our last number, is quite satisfactory. This experiment was made with a heavy draught of water; the trial with a light draught having been unavoidably postponed owing to an accident. It has most satisfactorily proved that the trapezium paddle-wheel with *half* the breadth, *half* the surface, *half* the weight, and we believe half the cost will produce a greater effect than a common rectangular paddle-wheel; and that in the experiment alluded to, thirty-five square feet of immersed surface of float made the African go nearly one mile per hour faster than sixty square feet of immersed surface of her old paddle float did before, and that with fewer revolutions of the wheels. Finally there was little or no vibration in the vessel, little back water, and little or scarcely any ripple behind.

PERRY'S INKSTAND.—We perceive that Mr. Perry, has improved his Patent Inkstand by attaching the cap of the cup with the filter holding the ink for use, to the air pump, and fitting the cup to screw and unscrew into the top, thus doing away with the third stopper, and preventing the cap from being lost. These are so far improvements both in the use and appearance of this valuable article which we have long since recommended to the notice of our readers.

THE Committee of Lloyd's have passed a vote of thanks to Mr. Drummond Hay, the English Consul-General at Tangier, for his active and zealous exertions in the interests of British merchants and shipowners, as displayed in late cases of shipwreck on the coast of Barbary.

HIS ROYAL HIGHNESS PRINCE ALBERT, as a mark of his anxiety for the success of the Niger enterprise, has presented to the Commanders of the Albert, the Wilberforce, and the Soudan, steamers respectively, a highly-finished gold pocket chronometer, bearing the following inscription:—"Presented by his Royal Highness Prince Albert to ....., of her Majesty's steamer ....., on his departure with the expedition to the Niger, for the abolition of slave-trade.—*March* 23, 1841."

SLAVE-TRADE.—Extract of a letter from Rio Janeiro, dated Jan. 14, 1841:—"On the 31st of December last, H.M. brigantine Fawn, Lieut. Foote, and Partridge, Lieut. W. Morris, being 25 miles to the eastward of the island of St. Sebastian, on this coast, cruizing for the suppression of the slave-trade, descried a brig in the E.N.E., standing in for the land. The wind being very light, both vessels sent their boats to board the stranger, which at six P.M. took possession of her. She proved to be the Portuguese brig Acceicera, having on board 332 slaves, 24 having died on their passage from Quillimane, on the coast of Africa, bound to Ilha Grande. The misery and wretchedness endured by those hapless creatures, and being short of water, when the brig was captured, was most extreme. Slavery is still carried on to a great extent on this coast."

STEAM COMMUNICATION WITH INDIA.—An arrangement of the greatest public importance is on the point of being concluded between the East India Company and the directors of the Peninsular and Oriental Steam Navigation Company. It is well known to all persons connected with India how great and constant an effort has been made to extend the advantages of steam communication to Ceylon, Madras, Calcutta, and other places besides Bombay, and how much blame has been thrown upon the East India Company for not assisting cordially in such extension. They are now, it seems, about to relieve themselves from that imputation, if not by taking the whole matter under their own superintendence, at least, by lending very powerful assistance to other parties with whom there is every prospect that what is required will be done effectually. They have therefore proposed to the company above-mentioned to grant to them a premium of £20,000 per annum for five years, which will commence as soon as the first of their vessels of 1,600 tons, and 500-horse power shall be put on the line between Calcutta and Suez, and with the further stipulation that within one year from the date of the first voyage, an addition shall be made for the service of that line of two vessels of equal power. This grant is independent of any contract for the conveyance of the mail on the route mentioned that may subsequently be entered into, only that it is to emerge into any such contract as may be concluded in the course of the five years in which the premium or gratuity is to operate. The East India Company will thus be placed in a situation to judge of the competency of the parties to fulfil the higher duty which would be confided to them, in the event of their having the conveyance of the mails on so important a route before they thereby subject the public to any risk. The proceeding is, therefore, both a judicious and a liberal one on the part of the East India Company, who still maintain their original engagement with parliament, by conducting it upon their own responsibility. So much has been done already by the Oriental Company, that little doubt need now be entertained of the success and of the extension of the project. Thus will the "comprehensive" scheme, but by means differing from those at first contemplated, be at length carried out. —*Times.*

The following table contains the number of officers on the Navy list of January in each of the years mentioned, from 1816 to 1841 :—

	1816	1831	1834	1837	1838	1839	1840	1841
Flag officers . . .	343	216	193	154	212	216	201	187
Captains and Retired ditto . .	889	833	792	759	697	697	692	739
Commanders and Retired . .	894	1192	1144	1105	1084	1087	1085	1057
Lieutenants . . .	3776	3357	3155	2994	2918	2871	2813	2752
Marine Officers . . .	1336	893	856	831	810	805	789	782
Masters . . .	693	524	485	454	439	469	462	459
Medical Officers . . .	1537	1153	1017	977	1042	1046	1056	1020
Pursers . . .	957	646	619	578	570	558	557	538
Naval Instructors . . .	. .	. .	. .	. .	. .	11	22	25
Chaplains . . .	62	71	63	69	72	70	69	75
Total .	10487	8885	8324	7921	7844	7830	7746	7634

MEHEMIT ALI.—A medal of Mehemit Ali, Pacha of Egypt, is being engraved in England, as a memorial of respect for his character as a promoter of science and commerce, and as an advocate of religious toleation.

NEW BOOKS.

A NARRATIVE OF SOME PASSAGES IN THE HISTORY OF EENOOLOAPIK, &c. *By Alexander Mc Donald, L.R.C.S.E, &c. Edinburgh: Fraser and Co.*

The Esquimaux, whose name is in the above title, was brought to this country in the ship Neptune, 1839, commanded by Captain Penny, with the view, of obtaining from him geographical information for the extension of the whale fishery in a part of the Arctic regions, of which few traces are left us; and also with the laudable motive of introducing among those harmless, ignorant people, one ray of civilization. The little work before us contains a few particulars of him during his stay among us and his return voyage, and abounds in interesting traits of character as well as information on shores long neglected, but, which it seems there is reason to believe, afford at certain seasons of the year, a good whaling ground. With this we must commend the book to those of our readers who interest themselves in Arctic discovery (a subject we propose shortly taking up in our own pages,) merely adding that the ground alluded to lies between Frobishers Strait, and the southern part of Davis Strait.

TREATISE ON THE IMPROVEMENT OF THE NAVIGATION OF RIVERS, *with a new theory on the cause of the existence of Bars. By W. A. Brooks, M. Inst. C.E. London: Weale.*

The experience which Mr. Brooks has acquired in the management of the Tees, as a river engineer, (if we may use the term,) has led him to consider the various theories on the formation of bars; and not finding to his mind a sufficiency in them of *cause for effect*, he has produced one of his own. It is not our present intention to discuss its merits, but we may say that his views appear judicious, and his work to which we shall occasionally return hereafter, is one that should be consulted by every engineer.

INSTITUTES OF ECCLESIASTICAL HISTORY, ANCIENT AND MODERN. *By John Lawrence Von Mosheim. London: Longman.*

Ecclesiastical History does not fall within our province to discuss, and, therefore, we record the above title of one of the most important and valuable works we have yet met with, not in the spirit of strict criticism, but as announcing to our *clerical naval readers*, the appearance of an indispensable integral part of what should be found in their libraries. They are of course acquainted with Dr. Maclaine's translation, and its defects of *partiality*, which defects originated the idea of the present new and literal translation, by Dr. Murdock, edited by Mr. Soames, and improved by his additions. The whole work is contained in four octavo volumes, comprehending the divisions into periods which are named *Primitive, Medieval, Reformation*, and *Modern*, the latter extending down to the year 1700. Need we say to the general reader as well, that it opens a source of information of the most interesting description. If, as a naval officer, he is present on the coast of Syria, the seat of the holy wars,

"Where saints did live and die,"

he is presented with all their doings for the sake of "holy lucre and ambition," and is initiated, not only into the ingenious artifice which gave rise to this extraordinary warfare, but also into the characters of those by whom it was followed. But it is evident that, to all thinking men, "a general history of Ecclesiastical Institutes," has claims to their attention of more than an ordinary description. For the present, therefore, we shall commend it to them,

being well satisfied that as it concerns their spiritual welfare so should it have the preference among the multitudes of books, however great which they may possess relating to their wordly pursuits.

NEW CHARTS.

(Published by the Admiralty.)

In our last two numbers we announced the publication of the valuable series of charts and plans, which have resulted from the late voyage of H.M.S. Beagle, under the command of Captain Fitzroy. Having gone over the charts, we shall now proceed with the plans, and as their geographical positions will be made clearer by taking each chart and naming the plans of places in it, we shall adopt this method. Commencing then with the Eastern Coast, we find the various sheets accompanied by plans of places, which we have marked against them.

East Coast.—*Sheet* 6.—Port Belgrano to its extreme point navigable.—Union Bay.—San Blas Harbour.—Rio Negro. On scales about an inch to the mile.

East Coast, *Sheet* 7.—Port San Antonio. Scale similar.

East Coast, *Sheet* 8.—Port Desire in three plans,—the entrance enlarged. Port San Julian on a larger scale. Port Santa Cruz with the river to Mystery plain.

The South-eastern part of Tierra del Fuego, *with Staten Island, Cape Horn, and Diego Ramirez Islands.*

A chart shewing the navigation of the southern extreme of the South American continent in a clear and distinct manner. The separate plans it comprehends are those of Staten Island, on a scale of about half an inch to the mile; also, Good Success Bay in the strait of Le Maire, and Lennox Harbour, and Goree Road between the former and Cape Horn.

The Falkland Islands.

These form one large chart, the various harbours on the south-east coast being elaborately sounded, and presenting a strange indentation of rocky shores. The scale is about four miles to the inch, and restores the two islands from that division to which they had been condemned by the previous published authority, viz. Lieut. Edgar's chart. The Sound which separates the islands remains unexamined.

Berkeley Sound and the upper part of the same enlarged, the former on the scale of an inch, the latter on two inches to the mile.

The above include, we believe, all on the eastern coast of South America, done by Captain Fitz Roy—those on the Western we must defer for our next, for we have other matter at hand. The first is—

Bonifacio Strait from the survey of M. Hell, Capitaine de Fregate, in 1821 and 1822, with additions, by Captain Smyth, R.N. The scale is an inch to a mile.

Ports on the East Coast of Spain, viz.—*Mataro Road, Blanes Bay, Lloret Bay, Tosa Cove, Port San Feliu,* all from Spanish plans.

Galita Island.—*Surveyed by Captain, W. H. Smyth, R.N.*

A scale of about three inches to the mile, shews well the approaches to the islands, and the passage between them.

Sandwich Islands—*South Coast of Oahu.—Surveyed by Lieut. R. C. Malden, R.N.,* 1825.

The coast included is that between Diamond and Barber Points with the harbour of Honoruru and that of Honuliuliu to the westward, the former appearing on an enlarged scale on the same sheet.

SANDWICH ISLANDS—HANALAI BAY *on the north side of Atooi,—By Commander E. Belcher, H.M.S. Sulphur.* 1838.
The scale is about two and a half miles to the inch.

WAIAKIA, OR BYRON BAY, *on the north-east side of Owhyhee.—Surveyed by Lieut. C. R. Malden, R.N.*, 1825.
The scale is about an inch and a half to the mile.

ANNATTO BAY.—*By Lieut. B. Baynton, R.N.* 1839.
The scale is about five inches to the mile.

RIVER ST. LAWRENCE, BERSIMIS RIVER,—*Surveyed by Captain H. W. Bayfield, R.N., F.A.S.*
Scale, a mile and a half to an inch—the plan extends from the mouth to the falls.

ADMIRALTY ORDERS.

A General Memorandum has been issued at Portsmouth, stating that the Lords Commissioners of the Admiralty would not in future recommend to the Treasury that the remission of duty on Foreign Spirits and Cigars should be allowed to the Officers of the Fleet.

NAVAL OFFICERS' WIDOWS.

The order by which the Widows of Officers of the navy could only hold pensions by their husbands having served 10 years in active service has been rescinded, and 10 full years on the list of commission or warrant officers, will now entitle them to their pensions.—NAVAL PAPERS.

[This is not the case, as our readers will find on reference to Article 4 of Regulations, p. 165 of Navy List.]

Admiralty, March 22nd, 1841.

Great inconvenience having been found to arise from the separation of Inclosures from the Covering Letters in which they are transmitted, when no description exists to shew the connexion of those Papers with each other, the Lords Commissioners of the Admiralty desire (with reference to Circular No. 38.) that such Letters containing Inclosures as may be addressed to this Office, or for the several Departments of the Principal Officers of the Admiralty, shall be accompanied by a Schedule in which the particular nature of each Inclosure is to be described, according to the annexed Form.

At the head of each Inclosure a note is to be inserted of the Covering Letter to which it may belong, and the number is to be marked upon it, which is assigned to it in the Schedule.

Their Lordships further desire that separate letters shall invariably be written on separate subjects.

By Command of their Lordships,
R. MORE O'FERRALL.

To the respective Commanders in Chief and all other Officers of Her Majesty's Fleet

Schedule of Inclosures contained in a Letter from to dated

No.	Date	From whom received.	To whom addressed	Subject
1				
2				
3				

PROMOTIONS AND APPOINTMENTS.

(From the Naval and Military Gazette.)

PROMOTIONS.

St. James's Palace, March 24th, 1841.

The Queen was this day pleased to confer the honour of Knighthood upon Capt. J. Douglas, late of the ship Cambridge.

The Queen has been pleased to grant to O'Neill Ferguson, assistant-surgeon, RN, permission that he may accept and wear the insignia of a Knight of the Royal Order of Isabella the Catholic, which her Majesty Maria Christina, late Queen Regent of Spain, was pleased to confer upon him, in testimony of her Majesty's approbation of his services in the cause of her Catholic Majesty, at the raising of the siege of Bilboa in 1837.

COMMANDER—E. B. Tinling.

LIEUTENANT—W. Hamilton, and appointed to *Melville*, v. Sulivan, to command *Favourite*, in death vacancy of Commander Croker.

MASTER—W. Jeffery, in death vacancy of W. Langden.

SURGEONS—R. R. B. Hopley, M. Cory, P. B. H. Liddell, R. M'Crea. F. Mansell, MD., to *Blenheim*, in death vacancy of Mein.

APPOINTMENTS.

Whitehall, April 7th, 1841.

The Queen has been pleased to direct letters patent to be passed under the Great Seal of the United Kingdom of Great Britain and Ireland, appointing Admiral the Honourable Sir Robert Stopford, GCB., to be Master of her Majesty's Hospital at Greenwich, in the county of Kent, in the room of Admiral the Honourable Charles Elphinstone Fleeming, deceased.

APPOINTMENTS.

CAPTAINS—P. Richards, (1828) to *Cornwallis*, destined for the flag of Rear-admiral Sir W. Parker, KCB. M. Seymour (1826) to *Britannia*, v. Drake, superseded at his own request.

COMMANDERS—C. Richards (1840) to *Cornwallis*. W. W. P. Johnson (1835) to *Winchester*.

LIEUTENANTS—A. G. Bulman (1828) to command *Fair Rosamond*. M. de Courcy (1838) to command *Charybdis*, v. Tinling, promoted. H. Wright (1832) to *Dee*. A. C. May (1838) to command *Skipjack*. J. Fitzjames (1838) to *Excellent*. T. Densten (1812) agent on board the *Belle Alliance* victualler. C. Wise (1833,) J. J. Lacon (1835,) J. Stoddart (1838,) and G. Skipwith (1834,) to *Cornwallis*. Lieut. J. Lowry to *Impregnable*, v. Stoddart, to *Cornwallis*. E. N. Troubridge (1838) to *Southampton*. J. Lodwick (1837) to *Winchester* from *Dee*, v. E. A. Glynn, invalid. L. P. Burrell (1840) to *Tyne* v. Johnson. J. E. F. Risk (1840) from *Princess Charlotte* to *Bellerophon*, v. Saunderson, invalided. A. Cumming (1840) from do. to *Hydra*, v. Malley, sick. C. H. Binstead (1824) from *Queen* to command *Spitfire*. J. C. Pittman (acting) to *Druid*. J. Dirom (1841) to *Iris*. J. Dunsterville (1840) to *Royal William* yacht. W. C. Chamberlain (1840) to *Excellent*.

MASTERS—B. W. Robinson (1830) from *Winchester* to *Columbia*, v. Thompson, deceased. J. Fowler (1831) from *Cleopatra* to *Winchester*, v. Robinson. Raines (acting) to *Cleopatra*, v. Fowler. W. Jeffery (acting) to *Pilot*, v. Langden, deceased. G. Wright (acting) to *Edinburgh* from *Dido*, v. Davies, invalided. J. R. Aylen from *Wasp* to *Dido*, v. Knight. Roberts from *Alecto* to *Wasp*, v. Aylen. G. B. Hoffmeister (1828) to *Cornwallis*.

MATES—W. A. R. Lee, and N. Vansittart to *Queen*. J. R. Thompson (1834,) and T. C. Herbert (1839) to *Excellent*. H. Wall, J. A. Paynter (1833,) G. Hancock, and W. D. Carrol (1838) to *Vernon*. N. Vansittart from *Queen* to *Cornwallis*. Pyne and Vyse to *Polyphemus*. A. P. Greene (1828) to *Cornwallis* from *Salamander*. H. D. Blanckley (1839) from *Excellent* to *Salamander*. H. S. Hillyer (1838,) C. K. Jackson (1839,) S. Fowle, *b* (1836,) and D. Lane (1838) to *Cornwallis*. A. D. Gordon (1840) to *Excellent*. Smith and Harvey to *Gorgon*. Marryatt from *Ganges* to *Edinburgh*.

MIDSHIPMEN—C. W. Elton to *Cambridge*. Dew to *Thunderer*. C. C. Maddicot to *Cornwallis*.

VOLS. 1ST CLASS—W. B. Masson and J. Miller to *Inconstant*.

SECOND-MASTERS—F. C. Kent to command *Echo* steam-tug. R. Read to command Portsmouth yacht. N. H. Ballisto to *San Josef* for Plymouth Buoy Boat.

DEPUTY INSPECTOR OF HOSPITALS AND FLEETS—J. Cay (1823) late Surgeon of *Princess Charlotte*.

SURGEON—J. Gibson (1835) Superintendent to *Westmoreland* convict-ship.

ASSISTANT-SURGEONS—J. S. Burn, (acting) to *Queen*. Campbell to *Victory*. J. P. Burke and P. Porter to *Winchester*. A. Elliott, MD., J. Simpson, and A. Sibbard, MD., to *Queen*. T. E. Molesworth, MD., to *Crocodile* from *Dee* st. S. Sproule, MD., (1837) from *Sappho* to *Flamer*, v. Pascoe, invalided. W. Cass (1836) to *Queen*, for duty of Haslar Hospital. J. Simpson to *Queen*. J. Campbell to *Victory*. A. Sibbald to Haslar Hospital. C. P. Blake to *Cornwallis*. W. C. Hancock, MD., to *Implacable*.

PURSERS—H. H. Chimmo (1840) to *Thunder*. J. Tapson (1808) to *Cornwallis*.

CLERKS—Lewes from *Winchester* (in charge) to *Gleaner*.

NAVAL INSTRUCTOR—Rev. J. A. Burrough to *Impregnable*.

COAST-GUARD.—*Commander*—A. T. Goldie (1839) to be inspecting Commander.

Lieutenant—E. Knapman (1812) to be Chief Officer.

Mates—J. G. S. M. Moore, and C. Ludlow to be Chief Officers.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ACORN, 16, Com. J. Adams, 12th April, arr. at Plymouth from St. Helena.

ASIA, 84, Capt. W. Fisher, 17th March, arr. at Spithead, 25th, Sheerness, 10th April, paid off.

BONETTA, Lieut. F. W. Austin, at Chatham, fitting for coast of Africa, 19th April, at Sheerness.

CORNWALLIS, 72, Capt. P. Richards,

at Plymouth, fitting for flag of Rear Admiral Sir W. Parker, KCB., commissioned 7th April.

FAIR ROSAMOND, 2, Lieut. Com. A. G. Bulman, at Portsmouth, fitting.

IRIS, 23, Capt. H. Nurse, 24th March, left Plymouth for Africa.

PIQUE, 36, Capt. E. Boxer, 17th March, arr. at Spithead, under jury masts, 21st at the Nore, and proceeded to Chatham.

SALAMANDER, (st. v.) Com. J. C. Davis, 20th March, sailed for Sheerness.

TWEED, 20, Com. H. D. C. Douglas, 26th March, left Spithead for American station.

AT PORTSMOUTH, 15th of April,—At Spithead, Indus, Vernon, Pelican, Nautilus. *In Harbour*—Queen, Victory, Excellent, Royal George yacht, and Rapid.

AT PLYMOUTH, 12th April—*In Harbour*—Caledonia, San Josef, Cornwallis, Stag, Acorn, Soudan—Steamers, Avon and Carron. In the Sound—Impregnable, Belleisle.

AT DEPTFORD—Albion, England, Orbit, Liverpool, St. Ann's, and Enterprize, to embark troops for Canada—Diligence and City of Rochester—Remain Bodicea, transport, for Rio, Adelaide for India, Garland, Grove, Westmoreland, convict ships, and Wilberforce, iron steamer.

ABROAD.

ANDROMACHE, 25, Capt. R. L. Baynes, CB., 28th January, in Simons Bay.

BEACON (sur. v.) T. Graves, 4th March, returned to Malta from the survey of Graham Shoal.

BELLEROPHON, 80, Capt. C. J. Austen, 4th April, left Malta for Gibraltar.

BENBOW, 72, Capt. H. Stewart, 10th March, arr. at Malta.

CAMELION, Lieut. Com. G. M. Hunter, 4th February, left Rio for the Cape.

CARYSFORT, 26, Capt. H. B. Martin, 3rd April, left Malta for Corfu.

CASTOR, 36, Capt. E. Collier, 9th of March, arr. at Malta.

CHARYBDIS, 3, Lieut. Com. E. B. Tinling, 2nd February, left Port Royal for Nassau.

CLEOPATRA, 26, Capt. Milne, 27th February, arr. at Jamaica from Barbados, having captured a Spanish slaver with 260 negroes off St. Thomas.

COMUS, 18, Com. E. Nepean, 4th February, left Port Royal for Honduras.

CROCODILE, 26, Capt. Johnson, 26th February, arr. at Jamaica.

CURACOA, 24, Com. W. Preston, 2nd February, arr. at Rio.

CURLEW, 10, Lieut. Com. T. C. Ross, 8th January, arr. in Simons Bay.

CYCLOPS, (st. v.) Capt. H. T. Austen, 11th March, arr. at Malta from Suda.

DAPHNE, 18, Com. J. W. Dalling, 18th March, left Smyrna for Malta.

EDINBURGH, 72, Capt. W. Henderson, HH., 8th March, left Malta for Smyrna, 11th, returned, 4th April, sailed for England.

GORDON, (st. v.) Capt. W. H. Henderson, 3rd April, left Malta for Alexandria.

GRECIAN, 16, Com. W. Smyth, 22nd February, left Rio on a cruize.

HASTINGS, 72, Capt. J. Lawrence, CB., 22nd February, left Malta for Candia, 25th March returned.

HORNET, 6, Lieut. Com. R. B, Miller, 20th February, arr. at Jamaica from Carthagena, 2nd March, sailed for Chagres.

HOWE, 120, Capt. Sir W. O. Pell, 26, March, arr. at Malta from Marmorice.

HYDRA, (st. v.) Com. R. Stopford, 5th March, to leave Malta for Marmorice, Suda, and Candia, 10th March, arr. at Malta.

IMPLACABLE, 74, Capt. E. Harvey, 3rd March, arr. at Malta, 20th, sailed for Syracuse.

INCONSTANT, 36, Capt. D. Pring, 15th March, about to sail from Malta for Trieste and Venice visiting the continental ports to Barcelona.

LILY, 16, Com. J. J. Allen, 3rd Nov. in Mozambique channel.

MAGICIENNE, 24, Capt. F. P. Michell, 28th March in the Bosphorus.

PHOENIX, (st. v.) Com. R. Stopford, 1st April, left Malta for Beyrout.

PICKLE, 5, Lieut. Montresor, 13th February, arr. at Jamaica from Honduras, 2nd March, sailed for Chagres.

RACEHORSE, 18, Com. Hon. E. A. Harris, 8st February, left Port Royal on a cruize, 24th returned.

RACER, 16, Com. T. Hervey, 38th Feb. arr. at Jamaica from Bermuda.

RINGDOVE, 16, Com. Hon. K. Stewart, 3rd February, arr. at Barbados.

ROVER, 18, Com. T. W. C. Symonds, 16th January, arr. at Jamaica, 18th, left Jamaica on a cruize.

SAPPHO, 16, Com. T. Fraser, 19th February, arr. at Jamaica from Port au Prince.

SKIPJACK, 5, Lieut. Com. H. Wright, 25th Feb. arr. at Jamaica.

TALBOT, 26, Capt. H. J. Codrington, 28th March had sailed for Corfu.

THUNDERER, 84, Capt. M. F. F. Berkeley, 2nd April, left Malta for Syracuse.

TRINCULO, 16, Com. H. E. Coffin, 31st

March, arr. at Gibraltar from Lisbon.

VANGUARD, 80, Capt. Sir David Dunn, 23rd February, left Malta for Candia, March, returned.

VESTAL, 26, Capt. T. W. Carter, 12th February, at Belize.

VICTOR, Com. W Dawson, 2nd Feb. arr. at Tampico, 21st at Jamaica, 28th, sailed for Barbados.

VOLAGE, 26, Capt. H. Smith, arr. at the Cape.

WASP, 16, Com. G. Mansell. 8th March left Malta for Beyrout, 10th returned.

WINCHESTER, 50, Capt. J. Parker, 28th February, arr. at Jamaica from Antigua and Bermuda.

WIZARD, 10, Lieut. Com. T. F. Birch, 22nd February, left Rio on a cruize.

IN PORT—MALTA, *5th April.*—The Princess Charlotte, 120, bearing the flag of Admiral Sir R. Stopford, GCB., GCMG. Ceylon, 6, bearing the flag of Rear Admiral Sir J. Lewis, Bart. Powerful, 86. Howe, 120. Benbow, 72. Hastings, 72, Vanguard, 80. Carysfort, 36. Castor, 36. Dido, 18. Steam frigates—Vesuvius, Cyclops, Stromboli, and Acheron. Steam packets—Megæra, Locust, and Prometheus.

PORT ROYAL, *4th March.*—Admiral Sir Thos. Harvey, with his flag in the Winchester—Magnificent, Cleopatra, Crocodile, Pilot, Victor, Sappho, Racehorse, Racer, Charybdis, Pickle, Skipjack, and Dee and Tartarus steamers.

BARBADOS, *17th Feb.*—Seringapatam, Cleopatra, Ringdove, Griffon, Crane packet—and the Hecla, Columbia, Tartarus, Flamer, Gleaner, and Blazer steam-vessels.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 2d of April, the lady of Lieut. Young, RN., of the Coast-guard Service, at Hill Head, of a daughter.

Marriages.

At Malta, on the 30th of March, the Rev. E. Kitson, Chaplain of H.M.S. Princess Charlotte, to Anne Jane, eldest daughter of Colonel Bredin, Royal Artillery.

At Newington, April the 10th, Lieut. T. A. Butler, RN., to Emma Louisa, eldest daughter of Commander Sir H. E. Atkinson, RN.

At Rogate Parish Church, Lieut. W. H. Kennedy, RN., to Georgina, fourth daughter of the late Hon. Admiral Sir C. Paget, and niece of the Marquis of Anglesea.

At Newington, on the 25th of March, J. Hay, Esq., of Canal Grove, to Eliza Jane, daughter of the late H. M. Cunningham, lieutenant RN.

At Plymouth, on the 16th of March, T. Coral Esq., assistant-surgeon, RN., to Harriet Elizabeth Beresford, youngest daughter of Com. J. Patey, RN.

At Meopham, Kent, on the 3rd of April, F. M. Brown, Esq., to Elizabeth, daughter of the late S. Bromley, Esq., surgeon, RN.

At Blendworth, the Rev. H. Forster, to Ellen, daughter of the late Rear-admiral Sir M. Seymour, Bart.

Deaths.

At Reading, Berkshire, at an advanced age, Vice-admiral Sir. T. Dundas, KCB. and DCL.

At his residence at Southsea, on the 21st of March, after a lingering illness, Com. W. Swiney, aged 64 years, leaving a disconsolate widow.

At Ramsgate, retired Com. W. Hutchinson, RN., aged 76.

In Grosvenor-street, on the 4th of April, Jane, relict of the late Admiral Sotheron.

At Falmouth, Lieut. Pawle, RN., late Commander of the Mutine packet. He was seized with paralysis whilst taking a walk;—immediate surgical aid procured, but in vain.

On the 20th of February last, of fever, off Beyrout, Mr. H. Prior, Master of HMS. Zebra, highly esteemed and much regretted by all who knew him, as a truly deserving and persevering officer.

At Prospect Lodge, Reading, on the 11th of April, W. Foster Esq., in the 82d year of his age, formerly of the Navy office, Somerset House.

At Falmouth, Lieut. Forrester, Commander of her Majesty's brig Linnet.

At Windsor, Canada, on the 19th of February, P. Wright, Esq., lieutenant RN., (1313,) and Collector of Customs for that port.

At Com. Cuppage's, Wilton Cottage, near Ross, Hertfordshire, Letitia, daughter of the late W. McCurdy, Esq., surgeon, RN., of Hambledon, Hants, aged 52 years.

Lately, S. Eades, Esq., Purser, RN., (1798)

Lately, R. Dunn, Esq., (a) 1790, surgeon of Woolwich Yard.

METEOROLOGICAL REGISTER.

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

From the 21st of March, to the 20th of April, 1841.

Month Day	Week Day	Barometer, In inches and Decimals.		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P.M.
		In Dec.	In. Dec	o	o	o	o						
21	Su.	29·61	29·62	46	51	39	53	S	SW	6	4	b	or 4)
22	M.	29·36	29·40	52	55	49	56	SW	SW	7	8	qor (1)(2)	qbc
23	Tu.	29·85	29·99	47	57	40	58	W	W	5	6	bc	bc
24	W.	30·22	30·23	50	53	44	55	SW	SW	2	2	o	bc
25	Th.	30·10	30·03	50	60	37	61	SW	SW	2	2	bm	b
26	F.	29·69	29·59	55	62	40	65	SW	SW	3	2	bc	bcp (4)
27	S.	29·74	29·77	49	53	40	55	SW	SW	4	4	bc	bcp (3)
28	Su.	29·90	29·91	44	56	36	57	W	SW	2	2	b	bc
29	M.	29·90	29·86	50	53	46	55	SW	SW	2	4	o	or (4)
30	Tu.	29·86	29·93	45	53	39	54	W	W	2	2	bc	o
31	W.	29·64	29·59	46	53	41	54	W	W	4	8	qbcp (1)	qbcp (3)
1	Th.	29·61	29·62	44	49	42	50	NW	NW	4	2	o	o
2	F.	29·61	29·66	46	50	42	51	NW	NW	3	4	bcr (1)	bc
3	S.	29·68	29·63	45	52	32	53	NW	W	2	1	bcm	bcm
4	Su.	29·63	29·55	43	50	33	52	NW	SW	2	4	b	bcp (3)
5	M.	29·37	29·42	45	54	41	55	SW	SW	3	2	qor (1)	bc
6	Tu.	29·67	29·72	46	48	38	52	NE	NE	2	2	bc	op (3)
7	W.	29·77	29·79	44	49	35	51	E	NW	2	1	bc	o
8	Th.	29 76	29·75	45	50	39	51	NW	W	3	4	bcm	bcp 3) (4
9	F.	29 86	29.85	45	52	36	53	NW	N	3	4	bc	bcphr3)(4
10	S.	30·02	30·00	45	45	38	47	N	NE	2	2	o	o
11	Su	30·90	29·89	40	45	31	47	N	NE	3	4	o	bcphr3)(4
12	M.	29·86	29·89	39	44	32	45	NE	NE	4	3	bc	bcphr (3)
13	Tu	29·04	30·09	44	49	31	51	S	SW	2	2	bc	or (4)
14	W.	30·06	30·01	50	53	42	54	SW	SW	2	2	o	o
15	Th.	29·88	29 82	47	44	37	50	SW	SW	2	3	b	or (3)
16	F.	29·70	29·73	43	49	32	52	SW	N	2	1	bc	bc
17	S.	29·87	29·92	48	53	33	54	SW	SW	2	1	b	bcm
18	Su.	29·93	29·92	49	58	39	59	SW	SW	5	5	o	bc
19	M.	29·87	29·88	46	54	43	55	NW	NW	3	4	bcp (1)	bc
20	Tu	29·76	29·66	44	50	47	51	W	W	1	1	o	bc

March—Mean height of the barometer = 29·910 inches : mean temperature = 46·7 degrees : depth of Rain fallen = 1·28 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

We are much obliged to the Harbour-master at Madras for his attention, and we would request the same attention from other harbour-masters of our colonies, that they forward to us as soon as possible, all Hydrographical notices passing under their cognizance as they may occur,—the establishment of this Journal having proved itself a receptacle for their reference, at once economical, secure, and immediate.

We have inserted the letter from Liverpool, and shall be happy to hear from the writer whenever he pleases.

It was our intention to have inserted the memorial presented to the Lord Mayor and Corporation of London, in favour of the widows left by the officers and crew of the Fairy, but our limits have prevented it. In our next it will appear, with the list of donors and their donations to Mrs. Hewett's fund. In the mean time the latter will speedily appear in the columns of the *Times*.

Lieut. Williamson is thanked. His manuscript is returned.

Bank in the River La Plata.

H.M.S. Curacoa, Monte Video, Jan. 14th, 1840.

Sir,—On the 13th of last December the United States frigate, Potamac, left this place to complete with fresh water from the river. The wind was about E.S.E. at the time, and fine weather, and while steering N.W.b.N., by compass, believing themselves to be about five miles from the Ravines of St. Gregory and St. Lucia, the leadsman having at the previous minute got a cast in four fathoms, the ship ran aground in seventeen feet water, drawing at that time twenty feet six inches.

She was cleared of everything excepting her ballast and lower masts, and after remaining fast until the 24th of December, by great exertions she was hove off S.b.W., their efforts to heave her off stern foremost having proved ineffectual, and her tendency being to clear away the sand and mud forwards, where she was less deeply immersed than aft; when she floated she drew seventeen feet six inches.

The wind was south-east when she got off, fine weather, with a remarkable high river.

During the eleven days they were aground the least water they had alongside was twelve feet, the most (the day she hove off) eighteen feet. The surface of the shoal consisted of a light coloured quick-sand, but about three feet was mud and shells.

As no notice is taken of this shoal in the chart of that part of the River Plata, supplied for the guidance of her Majesty's ships; and as it lays in the way of ships proceeding up the north side of the river to Point de Santa Maria, to water, I have thought it my duty to furnish you with this information of its existence, and send also a chart showing the shoal, &c.

When the Patomac was aground, *the true* bearings of Santa Maria, and the Ravine of St. Gregory and St. Lucia, were N.W. and N.E.

On the Admiralty chart the least depth of water marked on the shoal is three fathoms, and that close to Santa Maria, four fathoms being the average depth.

I have the honour to be, sir,
Your most obedient humble servant,
Jenkin Jones, *Captain.*

Captain Beaufort, R.N., F.R.S.,
Hydrographer of the Navy, London.

Madras Roads.

The roadstead of Madras is tolerably well known to our navigators, but time produces changes there as elsewhere, and there is room for a few remarks even on that much frequented anchorage. A short time ago a survey of these roads was made by Mr. Mc Kennie, then acting-master-attendant, principally with the view of shewing the position and state of progress of a stone breakwater, for facilitating the landing. What is the actual condition of it at present we are not aware, but considering the well-known dangerous nature of the roads in which, year after year vessels are placed in the greatest jeopardy, particularly

during the monsoon, either from want of knowledge of the roads, from temerity on the part of their commanders, or from their incredulity that bad weather is near at hand, while the barometer indicates no material change, such a survey was absolutely necessary.

Also, from want either of sufficient knowledge or of proper attention, it is too often the case that vessels arriving in the night, anchor in a position from which they could not possibly be assisted if the wind had had subsequently set on shore, and their inevitable loss would be the consequence.

The survey published by Mr. Mc Kennie gives the position and sections of the breakwater, and the following notice to commanders of ships and others, was issued from the Master-Attendants' Office, on the 14th of May, 1839:—"By a recent survey of the site of the projected breakwater, the extreme length of the work from N.N.E. to S.S.W., was found to be about seventy-six feet. Extreme breadth from E.S.E, to W.N.W. about fifty-five feet.

"The soundings upon it were found to vary from twenty-five to twelve feet. The work is laid down in twenty-five feet water, bearing from the master-attendants' flagstaff, S.E.b.E. $\frac{3}{4}$ E., distant from the shore 300 yards. The stones do not appear to have been moved by the action of the sea from where they were originally placed. As it is now considered a danger a good buoy is laid down on the south end; and it is in contemplation to lay down another at the north-east end to mark the two extremes to seaward.

"By Order of the Marine Board,

(Signed) "H. D. E. Dalrymple, *Acting-Master-Attendant.*"

Mr. Mc. Kennie has also added to his survey many important particulars of currents, tides, set of the sea, rise and break of the surf, and which latter information, when made known to commanding officers of vessels, cannot fail in being of great use in enabling them to issue orders to their boat's crew when on bar duty, not to venture nearer the surf than the prescribed distance.

Referring to the loss of the Hope, at Madras, at the end of 1827, and subsequent shipwrecks there, the nature of the soundings in the roads with the quality and colour of the sand, &c., commanding officers of vessels would also be better aware of their approach to the surf, with the assistance of the plan, in the event of driving.

The bearings and distance of the Pulicat Shoals from these roads, (being the nearest danger to Madras,) are also marked, and the spot on which the statue of the late Sir Thomas Munro, governor of Madras, standing face to seaward, has lately been erected.*

There are two shoals running almost parallel with the beach, which also appear in the plan, not that they are dangers to the shipping, (for they are well within the anchorage ground, but it might be well to

* This statue was sent out from England, and the landing and erecting it were so creditably performed by Mr. Mc Kennie, that he received a handsome acknowledgment of his services from the people of Madras. This gentlemen is now busy maturing a plan for communicating with the ships in the roads, sending out anchors, &c., which, if it answers, we shall take the opportunity of laying before our readers. We understand that a life-boat with a rocket apparatus, is to be established at Madras, according to the proposal of Mr. Mc Kennie.

notice their existence, and the probability of their having grown up from the too frequent and imprudent practice of ships throwing overboard stone ballast, against the regulation of the port, a proceeding which will in time make the anchorage ground (which has always been considered good for holding) very uneven.

Mr. Sprent, the intelligent master of H.M.S. Wellesley, gives us the following useful information concerning Madras roadstead.

Madras.—The Wellesley was anchored in the roads in nine fathoms, with the lighthouse south 67° west, and the master attendant's flagstaff north 62° west.

Machinery has been sent from England for a revolving light, but at present a fixed light is shewn from a temporary building for that purpose: this light is very useful running in at night; by bringing it to bear W.b.S., or W.S.W., a ship may run in by the lead, as the water shoals very regularly, and when in eight fathoms she may anchor: do not get too close in during the north-east monsoons, for a heavy swell generally sets in, which might cast a ship's head towards the shore when weighing, and drift her into danger before she could wear round. Bound to Madras during the north-east monsoon, the land should be made to the northward, as there is generally a strong current setting along the coast to the southward; but in the south-west monsoon the land should be made to the southward of Madras, as the current sets in the opposite direction.

Men-of-war generally lie on the south side of the roads, clear of the merchant ships. By the port regulations merchant ships are to anchor with the master-attendant's flagstaff bearing from N.W. to W.b.N.; and vessels anchoring in more than eight feet are charged double boat hire.

When the surf is so high as to render it dangerous for boats to land, a red and white-chequered flag will be hoisted at the master-attendant's flagstaff; and the following signals are made from the same place, should the weather assume a threatening appearance. *White* flag with a blue cross; the weather is suspicious, prepare for running to sea. *Red* flag, with a swallow tail; cut or slip. Upon the indication of an approaching gale of wind after sunset three lights will be hoisted, one at the mast-head and one at each yardarm, and a gun will be fired every five minutes.

For ascertaining the error of chronometers, you must note the time of the flash of the 8 P.M. gun fired at the fort, and the corresponding Madras mean time, as noted at the observatory, will be sent off the next morning from the master attendant's office; but as the flash is not always distinctly seen at the observatory, too much reliance is not to be placed on this mode of ascertaining the error.

The variation of the compass by azimuths, taken on board with the ship's head in different directions, was 2° east."

The first appearance of Madras and the coast in its neighbourhood is thus spoken of by Mr. Massie, in his work on Continental India.*

* A valuable work in two octavo volumes, published by Ward, Paternoster-row, from which we shall take another passage hereafter.

FORT ST. GEORGE, MADRAS.

THE appearance of Madras from the roads is imposing and grand. Fort St. George lies upon the margin of the coast, and its walls are washed by the flowing tide. The buildings along the shore, have all a stately aspect, and seem rather the palaces of great and wealthy princes, than the habitations of stranger-merchants in a foreign land,—Bentinck-buildings, of which the supreme court and other law offices form but a part, are in the first style of splendour. In the same line is the custom-house on one side, and the post-office on the other, constituting a range contiguous from the southern point of the fort to the flood town-gate, with a slight and rarely perceptible interval of nearly three miles. The walls of the houses susceptible of the highest polish, which at a distance, when the building is new, is as pure as alabaster, and by age acquires the colour of greyish marble. Madras is situated on an extensive plain. A low range of hills to the north rises in the distance extending to the interior, and another line of low mountains which we have already singled out from Sadras reaches southward. The former you see to the right and the other to the left, as you look upon the town from the deck of the ship. Thus the chief objects of attraction are the town and its environs, and especially the European villas. There is all the luxuriance of an eastern clime discoverable in the face of the surrounding country; so that, casting your eye beyond the foaming surf, the low sandy beach and the city buildings, with their lofty verandahs, columned piazzas, and terraced roofs, the spires of three or four churches, the dome of the Armenian convent, and the crested minarets of the Moslem faith, you fix upon the waving acacia, the sweeping,

drooping bamboo, the broad-leaved plantain, the aspiring, tufted palmyra, and the stately and wide-spreading hospitable banian—all wooing the zephyr, which is scarcely strong enough to excite vibration in the lightest tendrils, while not a cloud intervenes between them and the clear ether in the mid-air. We had no sooner dropped our anchor than the ship was boarded by — men, they were, but whether their habitation was on land, or in the water, a stranger could hardly decide. We were two miles from the shore, we saw no boat coming alongside, neither was there one on the larboard or starboard. Our visitors were not shaking their black locks as if they had passed through the water, neither were they wringing their garments—they were *in nudibus;* yet, more surprising, they handed a document of an official character from the shore to our captain.—And who were they? or how could they come there? The sailors called them catamaran jacks—men who ploughed the billows and the raging surf upon two and sometimes three planks, six or eight feet long, with a short paddle in their hands; they sit on these planks cross-legged, or astride, as suits their convenience, striking the water first on one side then on the other with their solitary paddle. These are our first medium of communication with the shores of far-celebrated and long-civilized India!

Now all is bustle and preparation, anxiety and anticipation. The sun has gone down, the day has closed, and prudence dictates a brief delay. This exercise of patience is necessary and is yielded to—more of constraint than of a willing mind. Another night must be passed on board—then the daylight will be before us. A new country, a strange people, and our ignorance of both, prescribe the morning as the period of our debarkation. And now, how many mercies should be recorded—how sincere the gratitude, how devout the praise, how enduring the memorial, here presented, since a thousand opening waves have not swallowed us up; since the storms, with all their fury, have not overwhelmed us; and since all the billows of the mighty have not gone over us; but even in the midst of the storm—on the verge of the heaving gulf, the throne of prayer, the ear of a Father, have been accessible, and the fountain of mercy has been open, and the love of God has been shed abroad.

Before we leave the rivers and seas, the floods and climate of Hindostan, the Indian monsoon, deserves a notice. Some conjecture that the word derived its application from the name of a pilot, who made his way across the Indian Ocean by observing the prevalence of the *trade wind.* The change of the trade wind from east to west is accompanied generally by violent and broken weather; deluges of rain, and cold seasons attend them, and they are followed on land by a regeneration of the vegetable world, and the most cheerful transformation of the face of nature. The monsoon from the west breaks up on the Malabar coast at one season, and on the Coromandel coast it breaks up from the east at a different season of the year; but a greater quantity of rain usually falls in the province of Malabar than on the opposite coast. Sometimes the rain falls in such torrents as to prevent egress from their houses to the European inhabitants during successive days; and even so as to confine visitors who may have gone out only for a morning call. There are generally official notices given, as from the flagstaff, to inti-

mate that vessels should leave the roads, otherwise, I believe, insurances are forfeited. Where the peril has been braved, sometimes vessels have been overtaken by hurricanes as violent as any western tornado, when many lives and much property have been lost. The 15th of October is the day for signal at Madras. I have witnessed similar phenomena to what are described by Rev. Mr. Caunter, and would do him the justice to testify that he has admirably delineated this and many other scenes.

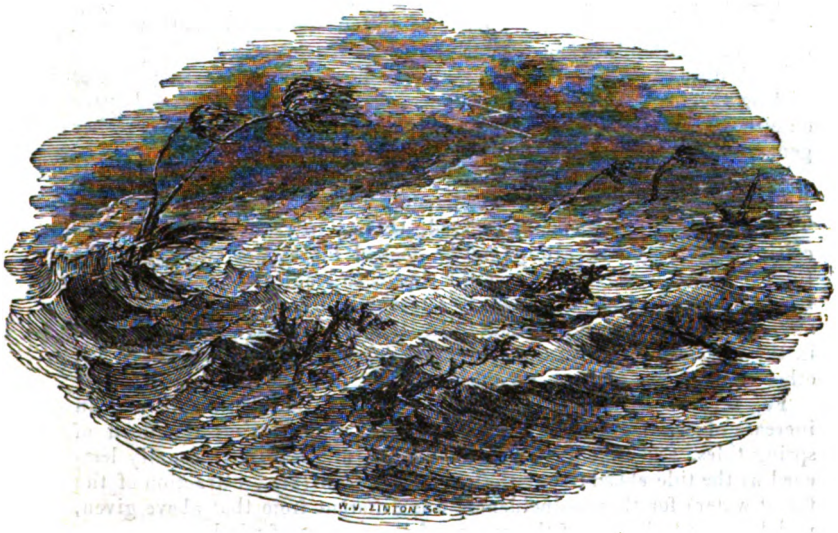
On that very morning some premonitory symptoms of the approaching 'war of elements' had appeared; small fleecy clouds were perceived at intervals, to rise from the horizon, and to dissipate in a thin and almost imperceptible vapour over the deep blue of the still bright sky.

There was a slight haze upon the distant waters, which seemed gradually to thicken, although not to a density sufficient to refract the rays of the sun, which still flooded the broad sea with one unvarying mass of glowing light. There was a sensation of suffocating heat in the atmosphere, which at the same moment seemed to oppress the lungs and spirits. Towards the afternoon the aspect of the sky began to change; the horizon gathered blackness, and the sun, which had risen so brightly, had evidently culminated in glory to go down in darkness, and to have his splendour veiled from human sight by a long gloomy period of storm and turbulence. Masses of heavy clouds appeared to rise from the sea, black and portentous, accompanied by sudden gusts of wind, that shortly died away, being succeeded by an intense death-like stillness, as if the air were in a state of utter stagnation, and its properties arrested. It seemed no longer to circulate, until again agitated by the brief but mighty gusts which swept fiercely along, like the giant heralds of the storm. Meanwhile the lower circle of the heavens looked a deep hazy red, from the partial reflection of the sunbeams upon the thick clouds, which had now everywhere overspread it. The sun had long passed the meridian, and his rays were slanting upon the gathering billows, when the black and threatening ministers of the tempest rose rapidly to the zenith.

About four o'clock the whole sky was overspread, and the deep gloom of twilight was cast over the town and sea. The atmosphere was condensed almost to the thickness of a mist, which was increased by the thin spray scattered over the land from the sea by the violence of the increasing gales. The rain now began to fall in sheeted masses and the wind to howl more continually, which, mingling with the roaring of the surf, produced a tumultuous union of sounds perfectly deafening. The wind, with a force which nothing could resist, bent the tufted heads of the tall, slim cocoa-nut trees almost to the earth, flinging the light sand into the air, in eddying vortices, until they had either so increased in gravity, or beaten it into a mass, as to prevent the wind from raising it. The pale lightning streamed from the clouds in broad sheets of flame, which appeared to encircle the heavens, as if every element had been converted into fire, and the world was on the eve of a general conflagration; whilst the peal which instantly followed was like the explosion of a gunpowder magazine, or the discharge of artillery in the gorge of a mountain, where the repercussion of surrounding hills multiplies with terrific energy its deep and astounding echoes. The heavens seemed to be one vast

reservoir of flame, which was propelled from its volumnious bed by some invisible but omnipotent agency, and threatening to fling its fiery ruin upon every thing around. In some parts, however, of the pitchy vapour by which the skies were by this time completely overspread, the lightning was seen only occasionally to glimmer in faint streaks of light, as if struggling but unable to escape from its prison—igniting, but too weak to burst the impervious bosom of those capacious magazines in which it was at once engendered and pent up. So heavy and continuous was the rain, that scarcely any thing save those vivid bursts of light, which nothing could arrest or resist, was perceptible through it. The thunder was so painfully loud that it frequently caused the ear to throb; it seemed as if mines were momentarily springing to the heavens. The surf was raised by the wind and scattered in thin billows of foam over the esplanade, which was completely powdered with the white feathery spray. It extended several hundred yards from the beach: fish upwards of three inches long were found upon the flat roofs of the houses in the town during the prevalence of the monsoon, either blown from the sea by the violence of the gale, or taken up in the water-spouts, which are very prevalent in this tempestuous season.

The annexed sketch, from Colonel Reid's valuable work on the Law of Storms,* represents the condition of the mouth of the Hoogly in a hurricane, from a painting by Huggins.



The Influence of Spring Tides on the Weather.

Interesting facts with respect to the fluctuations of the weather are constantly occurring, but unheeded by the majority of persons who have

* We are glad to perceive that this work is now going into a second edition.

leisure to make useful observations: yet, were these fluctuations studied with the attention they deserve, it is highly probable that they would afford us the means of often anticipating the changes, and of regulating our movements accordingly. To be enabled to do this, it will be admitted by all, would be a very comfortable reflection.

One of the most prominent of these variations is that of the spring flood-tides bringing from the ocean a vast collection of aqueous vapour; a fact known to fishers and pilots long before it was verified by Colonel Capper, on the Welsh coast, there can be no doubt. The Colonel also considers that an increase of the electric-fluid takes place; and he suggests that, the changes of weather hitherto ascribed to the direct influence of the moon may be imputed to the circulation of that fluid, and which is, in a great degree, immediately occasioned by the flux and reflux of the tides. That the vapours, thus brought in by the spring tides, are also attracted by elevated land, and by electrical action of the clouds, become precipitated, seems to admit of little doubt. The circumstance of the Scilly Isles, although surrounded by a humid atmosphere, not being so subject to rain as the main shore, which is more elevated; as also the east coast of England, which is comparatively low land, and well-known to be considerably dryer than the western and south-western coasts, may be advanced as corroborative of such operation. In all seasons during the continuance of the spring tides, in the vicinity of the estuary of the Severn, and probably the same may be the case on all the hilly parts of the western and south-western coasts of England, when westerly and south-westerly winds prevail, pluvial discharges are frequent; and we have been often surprised at finding these so local, in many instances occupying a very limited space on either side of the river Avon. On the turn of the tide the weather generally clears up.

An incidental remark of Mr. Rootsey, at the late meeting of the Philosophical Society, held at Bristol, is worthy of consideration. That intelligent gentleman observed, that, "in variable weather, the *crisis* of the day was always to be looked for at the changes of the tides. The tide-wave, when of the enormous magnitude with which it reached Bristol, (fifty feet,) must alternately lift up and let down the atmospheric column which stood upon it, and thus gave rise to changes in the barometric state of the column, which everybody knew caused the other changes, or, at least, preceded them."

For several years past it has been noticed that both rain and an increase of wind (westerly) generally took place during the flood of spring tides, and that the first often ceased, and the latter usually lessened as the tide ebbed; but the reason assigned (viz., attraction of the fluent water) for these coincidences was different from that above given, which seems to be one of the causes of an increase of wind.

May not the gravitating pressure acting downwards, combined with the upward forcing of the incumbent atmosphere, have the effect of accellerating the progressive movement of the westerly wind, or of creating a motion of the air when it may be calm, under certain conditions?

By the vertical pressure of the tide, would not the condensation of the column of air be increased? And this, if so happening when already

in motion, would there not be a tendency to increased action?* As the strongest principle of water is, to maintain its level, so in the fluid air the principle is as strong to be at rest; and this state in either, we all know from observation, can often be only fully accomplished by a violent struggle.

But, as an increase of wind, although generally occurring, is not an invariable consequence of the tidal operation, it must be presumed that there are auxiliary causes in action at the time, or preceding it, to produce such an effect.

The fact, however, that an increase of strength of the westerly winds, when attended with moisture, is generally coincident with the rise of spring tides, and as generally subsides again with the ebb, is too remarkable to be questioned. We need not, therefore, be at a loss to account for those temporary gales so commonly experienced in the locality of the Bristol Channel at such periods. It may be well for those mariners who navigate that arm of the sea to study the subject with care; for, assuredly, to be enabled to predict the coming and probable duration of a storm is an advantage not to be despised near coasts so full of dangers.

Indeed, this view of the subject might be extended to the wide ocean, and the same effect, proportioned to the difference of rise, may happen as the great tidal wave advances along the Atlantic, modified, of course, by the state of the weather, and principally regulated by the hygrometric condition of the air.

If it should be calm, a movement of the air in the direction of the tidal wave as it rises under any parallel, would probably be the result. If a light wind should be blowing, it would, perhaps, in like manner, be increased to a fresh breeze, and so on to a gale. In this way we may readily account for those sudden but temporary increases of wind so often experienced at sea. The great extent of the wave may, in some measure, make up for the want of elevation, and the effect, although it may not be so considerable when compared with that which takes place when the waters become fluent, and the vertical rise augmented, may not be the less certain. At all events, the suggestion is offered as one of the probable causes of a sudden increase and short duration of wind in the ocean, as whatever disturbs the equilibrium of the atmosphere must create a movement of the air.

The process appears extremely reasonable, under certain conditions, and those who will call to mind the compressive action of a bellows may perhaps be disposed to reconcile the observed effect with the given cause.

In pursuing the investigation of the subject, the following inferences were drawn from observations already made. When the wind is at any point between south-west and west of whatever strength it may be previously to, it will generally be found to increase with the spring flood tides, if these should be *attended with moisture*, and to subside again with the ebb; the increase of the wind commencing some hours before

* Whilst this process, if it be admitted, is going on over the water, the heat and moisture brought in from the ocean would increase the expansibility of the air as it reached the land, and account for the violent gusts which are experienced at such times.

high water, and the decrease a variable time after the turn of the tide.*

That, when the wind is between those points, and it happens to be dry clear weather, little increase of the strength of the wind may be expected to follow, which would seem to point to the hygrometric state of the air as the regulator.

If the wind be at south, and attended with wet, it will increase with the flowing tide, but the ebb seems to have little effect in diminishing its strength, and the crisis may be looked for as the sun attains his meridian altitude; or, if a shift of wind takes place to the northward, after that has passed without alteration.

If the wind be blowing across the channel (Bristol) during spring tides, it becomes very unsteady, vacillating several points to and fro, or veering and backing, according to sea-languge, incessantly, with alternate rapid increase and decrease of its strength. If it should be oblique in its direction before the tide commences in the ocean, it will probably veer to the westward until the ebb takes place.

These are the facts as far as they yet have been observed; and without meaning to determine the philosophical deduction for these phenomena, the following reasons are offered why the alternation spoken of should reciprocate with the tides:—

1st. That, the points named are in accordance with the lines pursued by the tidal wave up the channel—that is east and north-east.

2nd. That, a disarrangement of the air incumbent over the channel water takes place by the vertical rise of the tide.

3rd. That, from electrical changes which supervene on the inspringing of the sea and land clouds, rain is precipitated.

4th. That, an accession of heat is brought in from the ocean "upon the wings of the wind," as also aqueous vapours in excess.

5th. That, moist air is increased in expansibility by heat.

It must be borne in mind that these remarks are made at a position being about three miles direct from King-road, which is nearly at the head of the Bristol Channel.

Multiplied observations are necessary to establish the given facts, and the inferences drawn from them. Naval officers who may reside at the following places,† are therefore invited to contribute to the desired end, assuring any who may be labouring under that most vexatious of all vexatious distempers, termed in common parlance, the "Blue Devils," that they cannot find in the whole Materia Medica, a recipe more potent for dispelling the affection, or affliction, than that of renewing their acquaintance with Doctor Fresh Air!

A West Country Coaster.

On the Action of the Wind.

Sir John Herschel remarks that, "meteorology, one of the most complicated but important branches of science, is, at the same time, one to

* The tides here are very irregular, differing sometimes as much as four hours from the table.

† Barnstaple, Bideford, Penzance, Falmouth, Plymouth, Chepstow, Newport, Swansea, Milford, and Fishguard.

which any person who will attend to plain rules, and bestow the necessary degree of attention, may do effectual service."

There is much encouragement given in these few lines to the *small fry* who possess a penchant for science, without the acquirements of the philosopher. If, therefore, naval officers who may have leisure to attend to such matters, would but enter upon the subject with zeal, not only in this country, but wherever they may happen to reside or sojourn in distant parts of the world, a fund of useful information would be the result; whilst in the very undertaking they would be advancing their own happiness, by being rationally employed—be still aiding their noble profession—and conducing (no matter in how trifling a degree) to the advancement of science. Having myself paid some attention to, and reflected much on the subject of our present paper, I have ventured to embody here my remarks, and now submit them, Mr. Editor, to yourself, and to the readers of the *Nautical*, with the hope that, if any have made similar observations, or entertain the same opinions, they will favour us with them through the medium of your pages.

1. The long received opinion of winds blowing over a large tract of continent, or ocean, on a rectilinear course, it is highly probable, in the course of future observations, will be greatly modified.

That the operation takes place cannot be doubted, but not so generally as is supposed: indeed, to speak strictly, such opinion would amount to a physical impossibility, as to any extent, the earth being spherical, the currents of air must necessarily form curved lines: but, taking the area of the horizon, or the ocean between any two points as a plane, the following remarks will allude to an horizontal curve.

That westerly winds, (leaving aside the perennial winds of the tropics,) do extend from continent to continent unbroken, and often undeviating across the Atlantic, is true beyond dispute, the fact being proved in thousands of instances, as also to a great extent in the Southern and Great Oceans, if, indeed, they do not entirely encircle the globe in the other hemisphere.

But there is reason for considering that winds frequently pursue a curvilinear course. This may probably be the case when two currents of air happen to meet obliquely, the strongest turning aside the weakest, so that a ship crossing the space occupied by the stream of air, would experience shifts of wind as she moved along the curve. Such an operation would serve to account for the remarks (and the frequency of such remarks is one of the reasons which give rise to the opinion) so common in the journals of seamen, "of the wind shifting round the compass," but which often amount to a vague and incorrect mode of expression contrary to fact, the extent of the variations not embracing the quadrant of a circle. It is not denied that the wind shifts round so as to complete an apparent circular movement, but oftener six or eight points only may be taken as the amount of the variations.

When the strength of two winds thus opposed may be equal, or nearly so, then they may combine and pursue one direct course: for instance,—if a north-west and a north-east wind meet and flow together, a south direction would be given to the combined currents. A ship, consequently, going with either the north-west or north-east vein, on arriving at the angle of incidence, would experience a sudden shift of

wind from the north; and if the temperatures of the two currents vary greatly, (which is not likely,) there would be an increase in the strength of the wind.

If two veins of air in motion—say, one from the W.S.W., and the other from the E.S.E., combine, under certain conditions of strength, temperature, &c., it is probable that a circular motion would be induced, and an increase of wind follow; and such an operation be one of the causes of the frequent occurrence of tempests in the higher latitudes.

If two winds of equal strength, blowing from opposite points, meet, the probable effect would be a brisk gale for a certain time, which (in an intermediate space) would be followed by a calm, their progressive power of action becoming, as it were, neutralized. This is often the case some leagues from the mouth of the English Channel, when a contention happens between the east and west winds; and this state often continues for several days, until some barometric changes take place in the atmosphere, which give the preponderance to one or other—generally to the westerly wind, when it comes roaring in like a wild conqueror.

If we dwell with attention on the veering and backing of the wind, which, as sailors, all of us have so often had occasion to notice, whilst traversing the ocean,—its play, as it were, like the swinging motion of a pendulum, we must arrive, without being deeply versed in the doctrine of the air, at the conclusion that an oscillatory motion, in some way or other, has been induced. The wind, as is well known, often veers gradually four, five, or six points of the compass, and not unfrequently returns as gradually to the point whence it first started.* Sometimes the shifts are quick, (flying round," as the expression is,) and the return as quick, this sort of vascillation continuing for some time; hence the term, "baffling" applied by seamen to this often perplexing action of the wind. Frequently, however, the wind remains steady after having shifted, in which case, the ship may have entered a different vein of air in motion on a rectilinear course.

That five or six different veins, or strata, of air in motion may be moving onward at one and the same time, is granted; but it appears equally likely, if not more in the line of probability, that, often at least, when a ship experiences such changes in the direction of the wind, the air might be considered as performing an oscillation in a curve or otherwise, when the wind does not back, pursuing, in fact, a curvilinear course, which would account also for shifts, the intervals varying according to the extent of the sweep.

The latter action would explain the circumstance which has hitherto been so perplexing, that of several vessels at a few leagues apart experiencing each the wind from a different point, a fact that is indisputable and must occur to the minds of seamen as having happened during their experience at sea. The great cause of perplexity hitherto seems to have been the commonly received opinion of wind always blowing on a rectilinear course.

These fluctuations having been repeatedly observed, and watched for

* This circumstance must not be confounded with "local attraction" on board of ships, which causes a deviation of the needle on different tacks, and formerly gave rise to the idea of the wind having shifted.

the last three or four years, have led to conclusions on the subject that have been gradually strengthened. On the 10th of February this year, there was a fine display of the play of the wind from south-east to south-west, and back again, in the forenoon, and from S.S.W. to W.S.W. in the afternoon, after which it set in steady at west, and by nine at night it was nearly calm, the whole period before being a succession of squalls, rain, and gales.

The variations which take place in the vicinity of land have been long understood as arising principally from the elevations deflecting the wind, and causing portions of air to assume new directions; ravines and vallies running transversely to the line of coast, generally have drafts of wind flowing down them, which often occasion the loss of small spars. Those seamen who have sailed up rivers, the banks of which in some parts rise in elevated cliffs, and where the stream meanders, may recollect that, in some reaches which lie at right angles to the course of the prevailing wind, the current of air by striking the opposite bank, repercusses and blows across the channel of the river, so that the vessel sails on the tack contrary to that she would do if she had the true wind blowing above, which indeed she would experience in those reaches that are open, or where the banks are low.

2. Another circumstance deserves to be investigated in order to remove the doubts and perplexities it gives rise to.

Everybody knows that cold and dense air flows into warm and lighter air, and hence in the theory of winds, as a fixed principle, it is considered that air in motion has a lower temperature than the atmosphere into which it flows; and from estimating this as an invariable law of nature, some puzzling questions have arisen. But, however frequent this process may be, there are nevertheless circumstances which would seem to throw some doubt upon the question, whether such can be maintained as coming under the correct denomination of a general law of nature. If there should be found but one exception, then it will be admitted that the law cannot be held as unalterable. The common saying, that "exceptions prove general laws," appears to us an absurdity, and, therefore, contrary to common sense.

Most persons, and especially those who have visited the Mediterranean, have read or heard of, or have felt the *hot winds* which occasionally blow in that sea, particularly the Sirocco. Here we have the anomalous circumstance presented to us of warm or rather *hot* air flowing into an atmosphere some degrees lower. That this is the case, we are assured by the statement of the rise of the thermometer, (22°) as as well as from the sensations of the human body, arising from the unusal accession of warmth produced by that wind.*

If we suppose that the progress of the Sirocco is extremely slow, advancing only as it imparts its warmth to the column of colder air against which it rests, so that that column of air may be said to fall back upon its source, giving place to the other, the exception would not be removed; for if the general law was in operation, should we not expect the colder air would rush into the warmer and stop its advance.

* Some writers have thought the Sirocco local, and that the heat was evolved from the earth, but this cannot be true, as it has been experienced at sea as well as on shore.

The Solano or hot south wind is another instance, and more remarkable, perhaps, as crossing from Africa to Minorca. If there should still be any reasonable doubt of the correctness of those instances, can any be entertained with respect to the well known fact, which may be verified by any person, of the south-west and west winds which flow in upon our coasts whilst yet the earth is bound up in a frozen crust, causing an almost instantaneous rise of the thermometer, and a general thaw as either advances over the land, the easterly or north-easterly wind retiring before it?

That these curious facts *appear* to our perceptions to be *certain* will not settle the point; the evidence of our senses in the estimation of the phenomena of nature as in other cases, is sometimes at fault, and in these very circumstances we may be under a delusion. Such ought not, indeed, to be decided hastily, a great deal of sober thought and chemical knowledge, &c. are required for the investigation. Of the operations of nature, Sir John Herschel says, "What once is learnt we never have to unlearn. As rules advance in generality, apparent exceptions become regular; and equivoque in her sublime laws is, as unheard of as maladministration."

3. The regressive nature of wind is also worthy of attention, and much more common than is generally imagined, especially after a calm has taken place over the land, and is succeeded by "gentle airs." With the east wind of our isle this is often the case, whilst we are looking to remote regions for its source, and to the grand currents of the atmosphere for its production.* The fresh and lasting east wind sometimes experienced here, and which occasionally extends quite across the Atlantic, must have a *northerly* origin in Lapland.

A SAILOR.

DISCIPLINE OF THE MERCHANT SERVICE.

Madras, July 30th, 1840.

SIR,—In a former letter I have stated, that a general spirit of insubordination and disaffection prevails amongst the crews of merchant vessels. The only remedy for evils of such vast importance to mercantile interests, and to the national character is, in my opinion, to give publicity to well authenticated cases, and thereby shew the absolute necessity of a legislative enactment, which shall in reality amend and consolidate the laws relating to Merchant Seamen. The present laws are so defective that they operate with great injustice and hardship towards owners and masters of vessels, especially in foreign ports. Seamen are frequently convicted of refusing to serve and are sentenced to one month's imprisonment, forfeiture of wages and clothes;† but before the term of imprisonment has expired the ship may have sailed. This is frequently the case at this port, as most of the shipping touch here for

* The north-east winds of Europe, we are told, proceed from the accumulation of the superior stream of air being arrested by the lofty snow mountains of the north-west of Asia rushing down on the neighbouring countries.—*En. Brit.*

† It often happens that these men have no wages due to them, and have made away with their clothes before they struck work.

a short time on their voyage to Bengal, consequently other hands must be procured, European or Lascar seamen as may be, incurring a risk of inefficiency, or higher rate of wages and probably detention, thus the punishment falls on both parties, and the consequences are detrimental to the welfare of the merchant service.

Cases of assault, breaking into the ship's hold, plundering cargo, and other offences of frequent occurrence, are so inadequately defined or provided for by the present code of maritime law, that magistrates are compelled to have recourse to the statutes of common law, aided by their discretionary judgment and control; or, allow very serious and gross offences to escape with impunity. A case in point came within my jurisdiction the other day. Three seamen of the barque, David Scott, forcibly entered that ship's hold about 7 P.M., after the hatches had been laid on and secured, and the people had left off work; the good order which had prevailed on board that ship led to an early discovery, and before 8 P.M. the crew were mustered when three men were missing—the hold was open and searched, and these three men were found, two of them between bales of hay, the other in attempting to make his escape up the fore-scuttle. They were put in irons; the case was reported to me on the following morning, and the police-boat with the marine-police serjeant, was sent off to the David Scott, and the prisoners were taken into custody and brought before the magistrates. It was fortunate for these men that they had not plundered any cargo. It was, however, proved that they had been seen on deck after the hatches had been laid on, and that they forced the scuttle and got into the hold, therefore, their design was beyond all doubt: but, a timely discovery prevented their ill intentions being carried into effect.

Now, strange to say, this very offence, by no means an uncommon one, is not adequately provided for by any clause in the maritime laws of England, and yet the least reflection will convey an estimate of the very serious consequences which this crime involves. Suppose those persons had carried a light down in the hold, had plundered spirits, got drunk, and set the hay, cargo, and *spirits on fire*, and this in the middle of the night, *what then could have saved the ship?* Under such circumstances ships have been burnt; but, independant of so disastrous a result, is it not too bad that seamen may break into a ship's hold and commit plunder with impunity? A very glaring case of this kind was brought before the police, at one of the three presidencies not long ago, and dismissed. Having found the seamen of the David Scott guilty, they were sentenced to one month's imprisonment; if they had plundered the cargo I know of no other law applying directly to the case, than c. 74 of Geo. IV., commonly called Peel's Act, clause 89.

Herewith I forward you copies of several documents relating to the crew of the ship Moira. The man named Jones having been found guilty of mutinous conduct, and of a violent assault, was sentenced by the magistrates to receive three dozen lashes, and to be confined in prison for two months: this example has been found to have a very salutary effect on the crew of the Moira, and throughout the shipping in these roads. Summary and exemplary punishment is the most conducive towards that sound state of good order and discipline which ought to be enforced throughout the mercantile marine; and unless commanders

and officers of ships are promptly and vigorously supported in the execution of their duty, (provided a due attention is also paid to the justice and equity with which they discharged *their* respective duties,) it is impossible to preserve such a system of governing and controlling the merchant service, as is absolutely necessary to sustain the interests of commerce, the protection of life and property, the character of British seamen, and the prosperity of the empire at large.

I have the honour, &c,

CHRISTOPHER BIDEN.

To the Editor, &c.

P.S.—The man named Jones, I shall not degrade the profession by calling him a seaman, had only been a few days on board the Moira, intending to work his passage to Calcutta, he therefore came under the police regulations of this port, and was dealt with accordingly.—C.B.

Madras, 9 P.M. *25th June*, 1840.

SIR,—I beg leave to acquaint you that I have just received a letter from my chief officer, informing me that some of the crew are in a very mutinous state, having refused to do any more duty, and that a man named D. Jones, has been guilty of the most outrageous conduct, and has violently assaulted him (the chief mate.) Under these circumstances I earnestly call upon you to take some decisive measures to quell this mutinous spirit, especially as this is the second instance that my ship's company have betrayed such disaffection since my arrival in these roads. I am in such an ill state of health that I shall feel greatly obliged if you will repair on board the ship "Moira," yourself, and use your own discretion in making an example of the ringleaders of this disgraceful display, whereby my ship's company may be restored to order. I am confident they can have no just cause of complaint, and I rely upon your judgment and experience for the adjustment of this unexpected breach of discipline and violent behaviour.

I have the honour, &c.

(Signed) SAMUEL OWEN, *Master, ship Moira.*

To Captain C. Biden, Beach Magistrate and Master-Attendant, Madras.

Madras, 1*st July*, 1840.

SIR,—I cannot think of leaving the Madras roads without conveying to you, officially, as I have already done privately, my warmest acknowledgements for the prompt and energetic measures you adopted for the purpose of quelling the mutinous spirit which had shewn itself amongst the crew of the "Moira," and for punishing those who were most forward in their disobedience. When I consider that the whole of the crew had refused to do their work, that one of them had gone so far as to assault the chief mate, and that I, myself, was so unwell at the time as to be unable to go off to the ship, I cannot but feel that I should have been put to great loss and inconvenience by the stoppage of work on board and consequent detention of the ship, had it not been for the promptitude with which you came to my assistance, by repairing on board yourself, and adopting those effective and decisive measures which led to the punishment of the most active of the mutineers, and the cheerful return to their duty of the remainder of the crew,

Again begging you will accept of my best thanks,

I have the honour, &c.

To Capt. C. Biden, &c. (Signed) SAMUEL OWEN.

Ship Moira, Madras Roads, June 20th, 1840.

At 6h. 30m. A.M. Captain Biden, came on board and immediately held an enquiry in the cuddy—there were present, Captain Biden, *beach magistrate and master-attendant;* Mr. Rouse, *chief mate;* Mr. Durham, *second mate;* Mr. Friedman, *third mate.* The chief mate stated as follows, and his evidence was corroborated by the other officers:—

When Joseph Coffee came on board from prison about 4 P.M. yesterday, he went forward amongst the people, shortly afterwards, the men, (John Doobratch, John Vogwell, Charles Speed, John Sullivan, Joseph Coffee, Edward Davis, Theodore Johnson, Thomas Smith, and David Jones,) came aft in a body, and told the chief mate they would not do any more work; they said they did not like the ship, The chief mate called their names over, they still persisted in their refusal to do duty and went forward quietly, except one man, named Jones, whose conduct was very disgraceful; he first made several attempts to strike the chief mate, and did assault him. The language he made use of was infamous; he scuffled with the chief mate and knocked the chief mate down, and continued the most shameful abuse for about one hour. Jones was then secured by the officers and put in irons, the rest of the crew continued quiet during the night; this morning at daylight the hands were turned out to muster, when the whole of the above men would not attend the muster, and have not resumed their duty. There are five of the crew now doing their duty.

The following persons, (John Vogwell, John Doobratch, Charles Speed, and John Sullivan,) who had formerly borne a good character, were then called separately into the cuddy, and each of them declared he had no fault to find with his captain, or officers, but said, the letter brought on board implicated them and others of the crew, and caused their refusal to do duty; they were admonished and then agreed to resume their duty.

Turned the hands out and read the above statement to the crew, when P. Smith refused to do his duty, he was accordingly sent in the boat as a prisoner. J. Coffee's conduct being so very disgraceful, he was also sent as a prisoner in the boat; and D. Jones having been guilty of mutinous conduct, and having assaulted the chief mate, was put in irons and sent in the boat as a prisoner. The fourth mate, Mr. Donnoghue, having been guilty of unofficer-like conduct, since the "Moira" anchored in these roads, was publicly reprimanded by the beach magistrate; the crew were then warned of the consequences which would inevitably follow if they dared to disobey the orders of their officers, or refuse to do their duty, and were then dismissed—their conduct, with the exception of the prisoners, was quiet and orderly. It appears that the prisoner, Joseph Coffee, excited the ship's company by telling them that the jail, where their shipmates are confined, is a comfortable place, plenty allowed them to eat and no work; and, that he was the principal cause of the insubordination which followed immediately after he came on board, and led to Jones's very mutinous conduct.

(Signed) SAMUEL FRIEDMAN, *Third Officer,*
ROBT. B. DURHAM, *Second* ,,
G. ROUSE, *Chief* ,,
CHRISTOPHER BIDEN,
Beach Magistrate and Master Attendant.

The prisoners were brought before the Police magistrates at noon, on the 26th, and found guilty of the charges alleged againt them,—when T. Smith was sentenced to one month's imprisonment and the forfeiture of his wages and clothes; and S. Coffee to one month's imprisonment, and their allowance of provisions was reduced to one half the usual quantity allowed to European prisoners. The sentence passed upon D. Jones, is stated in my letter.

CHRISTOPHER BIDEN.

East India Navigation.—*Position of the Juggernaut Pagoda.*

We have received the following notices from the Master-attendant at Madras. In our August number for 1836, there appeared an interesting account of the Juggernaut Pagoda, accompanied by a spirited lithographic view of this remarkable building, so emphatically termed "the Lord of the Universe," and "the Mecca of Hindoostan." We take this opportunity of making these remarks, as we have received the following letter from the harbour-master of Madras, respecting the longitude of that most useful landmark. It will be seen that Mr. Davy, the present master of her Majesty's ship Thunderer, who was the author of the above paper, agrees with the captain of the Lord Lowther within a few seconds. We are not aware what Mr. Davy's prime meridian was, but such a coincidence seems to throw considerable doubt on the authority of Horsburgh.

Madras, Feb. 18th, 1840.

Sir.—When working down the coast this month, I became fully confirmed of a considerable error in the longitude of the Juggernaut Pagoda, which is laid down too far to the westward by Horsburgh's Directory, viz. in 85° 45′ east. The Directory states, that the Black Pagoda bears north 75° east, distant fourteen miles from Juggernaut, which gives a difference of longitude by computation of 14′ 19″, which places them east, northerly, and west southerly of each other that distance, but the longitudes are laid down at 23′ from each other.

By observations taken off both places by excellent sights and chronometers, I found the Black Pagoda in 86° 7′ 58″ east, and the Juggernaut Pagoda in 85° 53′ 12″. I beg to observe, when going up the bay in May last, I first observed a difference of nine miles, but it being very hazy, I could not depend on those sights, but these taken about twelve days ago, I feel every confidence in, and I shall be obliged by your giving this publicity for the guidance of commanders of vessels, should you deem it expedient to do so.

I am, &c.,
A. Yates, *Com. Ship Lord Lowther.*

Reefs off Points Gordeware and Coringa.

The following notice will serve as a caution to coasting vessels when approaching the reefs and shoals off Point Gordeware and Coringa.

The commanders of the barque Charles Dumergue, and the brig Union, have reported that the shoals off Point Gordeware and Coringa extended to the eastward and north-east, beyond their known limit previous to the disastrous hurricane and inundation at Coringa, in November last. The brig Union on her last voyage to the northern ports, ran aground on one of the shoals off Point Gordeware, and Capt. Wilkins is confident that he was deceived by the extension of the shoal.

As it is extremely probable that the shoals and banks of soundings are affected by the storms and inundations which have occasionally happened on the coast of Coromandel, and are liable to change, therefore a cautious approach, a strict attention to the lead, and a vigilant

look out, are always necessary, but now more especially in the vicinity of Coringa and Point Gordeware.

CHRIS. BIDEN, *Master-Attendant.*

Among the notices which we have received from Madras is one from Commander Chilcott, of the barque Prince George, reporting shoal water off Eunore. But as it appears, by his bearings, that it is already laid down in a chart long since published, we do not consider it necessary to insert it here.

THE FORFARSHIRE SHOAL—*off Tripaloar—Bengal.*

Madras Roads, 25th Nov. 1840.

SIR,—I beg to inform you for general information, that we sounded on a bank as follows: 20, 17, 11, 10, 20 fathoms, at a cast, Tripaloar Hill bearing W.N.W. thirty miles distance; and deepened to fifty fathoms, then again shoaled gradually when standing towards the shore.

I remain, Sir, &c.

JAS. RAPSON, *Com. Forfarshire.*

ON THE LONGITUDES OF THE PRINCIPAL MARITIME POINTS OF THE GLOBE

By Lieut. Raper, R.N. Sec. R.A.S.

(Continued from p. 243.)

159. *C. Blanco.*

Malasp. at a great distance, D.L. *Realejo,*		2° 27′ 30″	84° 41′ 30″
Which we adopt.			

160. *Culebra,* Port,

Bel. D.L. *Port Realejo,*		1° 34′ 15″	85 35

Which places the entrance about 85° 38′. This gives 1′ to add to the position given in table 8, col. (30) in my Navigation.

161. *Port Burica.*

Espinosa, I. 151, 76° 38′, or 3° 27′ W. of Panama, the ship being twenty-six miles distant,			82° 58′
Do.	D.L. *Realejo,*	4° 10′ 30″	82 58
Which we adopt.			

162. *Gulf of Dulce,* W. point.

Malasp.	D.L. *Panama,*	3° 50′	83° 21′
,,	D.L. *Realejo,*	3 47 30	83 21½
We adopt 83° 21′			

163. *Magnetic Id.* Isl. of entrance to Puebla Nueva.

Bel.	D.L. *Panama,* 7d.	2° 16′ ½ nearly,	81° 47′ 25″
	D.L. *Cardon Id.* 18ch.	5 22 18	81 46 42
We adopt 81° 47′.			

164. *Port Remedios.*

Espinosa 83° 26′, or 89° 43′ Gr.			
A MSS. of Bauza, D.L. *Realejo,*		2° 37′ 30″	89° 46′ 30″
Brown,	D.L. *Acapulco,*	10 9 30	89 42 30
We adopt 89° 45′.			

165. *Cocos Id.* Center,

Malasp. 80° 42′ 30″ which is 7° 32′ 30″ W. of Panama,			87° 3′ 40″
Krusenstern, Suppl. 1835, Vancouver,			87 0 0
Bel.	D.L. *Realejo*,	9′ 20″ E.	86 59 30

We adopt 87° 0′.

166. *C. St. Lucas.*

Espinosa adopts 109° 54′.

Malasp.	D.L. *San Blas*, City,	4° 33′ 25″	109° 47′ 59″
	D.L. Monterey 2ch. [6″]	12 0 48	109 52 12

(This last diff. long. Bauza considered bad.)

We adopt 109° 50′.

167. *San José*, Mission.

1769. Transit of Venus, computed by Oltmanns,		110° 0′ 44″
by Ferrer, Conn. 1817,		109 59 42
Malasp. two eclips. Jup. Sat.	[1s]	109 51 20

Espinosa adopts 109° 44′.

As Cape St. Lucas is 10′ 45″ S., and 9′ 30″W. of the mission, and as we consider the position of the Cape less uncertain than these observations, we shall adopt 109° 41′.

168. *Monte San Lazaro.*

Malasp.	D.L. *Monterey*,	9° 30′	112° 23′
	D.L *C. St. Lucas*,	2 28	112 18

Which last we adopt.

169. *I. Cedros*, S. pt.

Malasp.	D.L. *Montery*,	6° 28′	115° 25′
	D.L. *C. St. Lucas*,	5 30	115 29
Espinosa adopts 109° 7′, or 115° 24′, Gr., we shall adopt			115 22

170. *I. San. Benito*, Summit.

Malasp.	D.L. *Montery*,	6° 5′	115° 48′
	D.L. *C. St. Lucas*,	5 53	115 43

We adopt 115° 45′.

(To be continued.)

ÆOLIAN RESEARCHES. No. X.

[In continuing our papers on this subject, from observations made about two centuries ago, the following extract from the journal of the Geographical Society, so amply confirms the author's views in many respects, that besides being interesting in itself, we are tempted to introduce it here.]

III.—*Extract of a Letter from Mr. Alexander Loudon to W. T. Money, Esq.*. Dated 24th May, 1831, on his passage to Europe, from Java. Communicated by Mr. Barrow, and read 28th November, 1831.

'In July last, when returning from a visit to my brother-in law, Mr. Valek, in the interior of Java, I examined, in company with several others, the *Guevo Upas*, or Valley of Poison, perhaps the most extraordinary place in the world; and as a description of it may not be uninteresting, I enclose the following copy of a letter which I have

this day written to Dr. Horsfield, the botanist, who was many years in Java.

"'In the publications of the Batavia Society of Arts and Sciences, I have often read with pleasure your travels and experiments, and particularly that on the Pohu Upas, at Barjowargée, (where I was resident in 1811,) as well as your Tour, published by the same Society, in the eighth volume of their Transactions. Whilst at Batur, you state (p. 24,) 'The Guevo Upas is dreaded by the natives, and, according to their account, resembles the Grott del Cane, near Naples, but they could not be prevailed on to conduct me to this opening.'

"'The object of this letter is to acquaint you that, on the 4th July last, I visited the valley in question, on my return from a tour through the districts of Bagalun, Barjownas, and Ledok. I should be happy to have an opinion upon such a phenomena of nature. As you have examined the mineralogical constitution of the range of mountains, I know no person so capable of giving an opinion on the Valley of Death as yourself. The following is an extract from my journal on the subject.

"'*Batur, 3rd July*, 1830.—This morning, while walking about the village with the Patty, (native chief,) he told me that there is a valley only three miles from Batur, which no person could approach without forfeiting his life, and that the skeletons of human beings, and all sorts of birds and beasts, covered the bottom of the valley. I mentioned this to the commandant and Mr. Spracomberg, and proposed our going to see it; and the assistant resident, Mr. Daendels, agreed to go with us early next morning. At this time I did not credit all that the Javanese chief told me;—I knew that there was a lake on the top of one of the hills, which it was dangerous to approach too near, but I had never heard of this valley of death.—Very cold this morning; the thermometer 52°.

"'*Batur, 4th July*—Early this morning we made an excursion to the extraordinary valley, called by the natives Guevo Upas, or Valley of Poison; it is three miles from Batur on the road to the Djung. Mr. Daendels had ordered a footpath to be made from the main road to the valley. We took with us two dogs and some fowls, to make some experiments. On arriving at the foot of the mountain we left our horses, and scrambled up the side of a hill, full a quarter of a mile, holding on by the extended roots and branches of trees, and we were a good deal fatigued before we got up, the path being very steep and slippery from the heavy rains during the night. When within a few yards of the valley, we experienced a strong nauseous, sickening, and suffocating smell; but, on coming close to the edge, this smell ceased. We were now lost in astonishment at the awful scene below us;—the valley was about half a mile in circumferene,—oval, the depth from thirty to thirty-five feet, the bottom quite flat, no vegetation, a few large (in appearance) river stones, and the whole covered with the skeletons of human beings, tigers, pigs, deer, peacocks, and a variety of birds and beasts;—we could not perceive any vapour or opening in the ground, which appeared to be a hard sandy substance. The sides of the valley, from the top to the bottom, were covered with vegetation, trees, shrubs, &c. It was now proposed by one of the party to enter the valley; but,

at the spot where we were, this was difficult, at least for me, as a false step would have been fatal, and no assistance could be given. We lighted our cigars, and, with the assistance of a bamboo, we descended to within eighteen feet of the bottom; here we did not experience any difficulty in breathing, but a sickening nauseous smell. A dog was now fastened to the end of a bamboo eighteen feet long, and sent in;—we had our watches in our hands, and in fourteen seconds he fell on his back; he did not move his limbs or look round, but continued to breathe eighteen minutes. We then sent in another, or rather he got loose from the bamboo, and walked into where the other dog was lying; he then stood quite still, and in ten seconds fell on his face and never moved his limbs afterwards, though he continued to breathe for seven minutes. We then tried a fowl, which died in a minute and a half;... we threw in another, which died before touching the ground. During these experiments we experienced a heavy shower of rain, but were too much interested by the awful scene before us to regard it. On the opposite side of the valley is a large stone, near which is a skeleton of a human being, who must have perished on his back with his right arm under his head;—from being exposed to the weather, the bones were bleached as white as ivory. I was anxious to get this skeleton; but I soon found that any attempt to get at it would have been madness. After remaining two hours in this valley of death we began to retrace our steps, but found some difficulty in getting up; from the late heavy shower the sides of the valley had become slippery; and had it not been for two Japanese behind me, I certainly must have fallen some distance below;—being rather heavy, I held on by the branch of a tree, when my foot slipped and the branch gave way. On reaching our rendezvous we had some brandy and water, and left this most extraordinary valley,—came down the slippery footpath sometimes on our hams and hands, to the main road, mounted our horses, and returned to Batur.

"'The human skeletons are supposed to have been rebels who had been pursued from the main road and had taken refuge in the difficult valleys. And a wanderer cannot know his danger till he is in the valley, and, when once there, he has not the power or presence of mind to return.'

"You will perceive from the above extract that there is a great difference between this and the Grotta del Cane, near Naples, where the air is confined to a small aperture, while here the circumference is fully half a mile.

"On my arrival in London I shall be happy to hear your opinion of the mineral constitution of the hills near this extraordinary valley, where there is not the least smell of sulphur, nor any appearance of an eruption ever having taken place near it, although I am aware that the whole range is volcanic, there being two craters at no great distance from the side of the road at the foot of the Djung, which constantly emit smoke."

[The above communication was at the same time illustrated by the following extract from a letter, written in 1825, by Mr. Hamilton, then British Envoy at the court of Naples, describing the Lago di Amsancto,

(*Amsancti Valles* of Virgil,) in the province of Principato Ultra, in the kingdom of Naples. Communicated by that gentleman.]

'THE next morning (Friday the 17th Oct.), we started at seven from Rocca St. Felice to visit the lake of Amsanctus, about a mile and a half off. The hills here being high up among the mountains, are not in themselves very elevated, and from the ridge of land close to us descended a variety of rills or winter streams, working their way through the soft and moist earth till they meet in a kind of valley, one side of which is still thickly wooded with a forest of chesnut trees, called Macchia di Rocca St. Felice; and the other would be equally so, but the ground has been cleared, and is now cultivated to within a hundred yards of the foot of the hill. Exactly where the valley begins, we found—(close under a steep shelving bank of decomposed limestone, on which were no signs whatever of vegetation, and on which we found here and there crystals of sulphate of lime, or selenite, impure sulphur, also sulphate of alumina, products of the limestone, &c., acted upon by sulphureous acid gas)—here, I say, we found a lake of a rhomboidal shape, being in its smallest dimension about twenty paces, and not more than thirty in its longest dimension, the water of which continually bubbles up over a large portion of the surface of the lake, with an explosion resembling distant thunder, though not reaching to the height of more than two feet. The water is of a dark ash colour, may be almost called black, which is the effect of its mixture with earth blackened by the effect of the sulphureous acid gas. On one side of the lake is also a constant and rapid stream of the same blackish water rushing into it from under this barren rocky hill, but the fall is not more than a few feet. A little above are apertures in the ground, through which warm blasts of sulphuretted hydrogen gas are continually issuing, with more or less noise, according to the sizes of the openings,—some are oblong, others perfectly round. On the opposite side of this small lake is another smaller pool of water, on the surface of which are continually floating in rapid undulations thick masses of carbonic acid gas, which are visible one hundred yards off. This pool is called the Coccaio, or Cauldron, as having the appearance of being perpetually boiling. The larger lake is called Mephite, and the openings on the slope above are called Mephitinelle: these openings may be imagined to be the *sævi spiracula ditis* of Virgil,—and the Cauldron to be the *specus horrendum* of that poet. (*See* Æn. vii. 563—571.) The mephitic vapours arising from these waters are at times fatal, particularly when they are borne in a high wind in one direction. In calm weather, as was the case while we were there, the danger is much less, as the carbonic acid gas will not, in its natural state, rise more than two or three feet from the ground, so that we could walk all round the lake and Cauldron, and even step over some parts of it; but it was necessary to take care not to slip, so as to fall; as a very short time, with our faces too near the ground, would have sufficed to fix us to the spot. As it was, I had much difficulty in filling a small bottle with the water from the lake, as I was obliged to hold my head up high while I bent down (the peasants of the neighbourhood endeavouring to alarm us more than necessary by their own fears and ignorance;) nor could I stoop low

enough to place an insect on the ground, on which I wished to try the experiment how long it could live on it; but we saw the dead bodies of many strewed upon the ground all round the lake. They say birds too sometimes fall down dead either into the lake or on the banks, and strayed sheep are frequently killed by the vapour. A Mr. Santoli, Inspector of Forests, who accompanied us to the spot, and who, as well as a Mr. Brocchi, an Italian chemist, has written upon this natural phenomenon, described to us as the gaseous products of the lake,—1. Carbonic acid gas; 2. Sulphuretted hydrogen gas; 3. Sulphureous acid gas; and, 4. Carbonated hydrogen gas. While Mr. Crawfurd was taking a view of the spot, I endeavoured to sit under the lee of a large stone among the decomposed calcareous rock; but I was soon obliged to quit my position, or rather to quit my neighbourhood to the ground, as I began to experience a disagreeable sensation in my throat, and a difficulty of breathing.

"In the same dip amongst the hills, and about one hundred and fifty yards from the lake, is a small stream of running water, in which, for the space of about ten yards, is a place called "The Vado Mortale," where is also a gurguglio, or bubbling of carbonic acid gas, with a mixture of sulphureous acid gas in the stream itself. The water is here very cold, and not disagreeable, but the earth about is considerably blackened. It is curious enough that there is no appearance of volcanic products in the surrounding country.

"The people in the neighbourhood described to us the noise of the principal lake as much diminished since the opening of the largest of the spiracula, as well as the height to which the bubbles of the water are raised;—of course, in the lapse of many years, many changes are likely to have arisen; but it is curious to observe still so many points of resemblance with the concise description of Virgil, though much must be allowed to the imagination of the poet. Some changes have been effected of late years by an attempt, which has failed, to establish a manufactory of sulphur close by, like that in the Solfaterra, to which we may attribute the disappearance of all remains of a temple (said by Pliny to have existed on the spot) to the Dea Mephitis. There have also been some disputes between the peasantry of the neighbourhood and the lord of the soil, in consequence of their having discovered that the deposit of the water of the greater lake, being a sulphate of alumine, was a cure for the *scab* or *rot* among their sheep and cattle. In order to get a quantity of it, they dug pits close to the lake to draw the water off and let it evaporate; and when the proprietor wished to make a profit of it for himself, they opened a ditch and let it all off at once; but Nature would not be so outwitted, and she continues to afford a sufficient supply for all the wants of the villages around; this being connected with another quality of the lake which I have not yet mentioned, namely,—that with a constant current rushing into it, and perhaps a supply from below with the rising gas, there is no apparent exit except when it overflows during the seasons of the rains. Another change had been effected also by another winter torrent very near the lake, which had destroyed a small lake similar to the great one, called the Frepoli, by carrying away at once the ground around it. About a quarter of a mile from the lake, on the hill above, in the corn-fields,

are also two very small pools, from which carbonic acid gas is continually escaping.

I have now told you nearly all we saw or heard of at this spot, which is curious in itself, and interesting from having been celebrated by Virgil, and seldom visited by modern travellers. Swinburne was there, but says very little on the subject. Addison (and many others have followed him) thought that Amsanctus was near Terni; but the authorities of Cicero, de Div. i. 36, and of Pliny, ii. 93, are quite sufficient to prove that it was in the country of the Hirpini.

The former of these writers says, that the earth at Amsanctus was *mortifera*, and the latter assures us that there was a spot near the temple of Mephitis, *quem pui intravere, moriuntur*.

The Loss of the Indian Oak.

(Concluded from page 308.)

Sunday, August 30th, A.M.; light westerly winds and fine weather. Barometer falling down to 29·60.

Mr. Field, first officer, one european seaman, one seacunny, and eight Lascars volunteered to proceed in the launch to Chusan. Embarked, and with the small cutter and several Loo-choo canoes, towed her clear of the reefs, when I took my leave and returned to the shore, about 8 A.M., leaving Captain Grainger and the second officer with the cutter to see her clear of the bay, the wind blowing dead on shore.

About 10h. the principal man, Tun-chung-faw, came to me in a great fright, and stated a number of bad men had arrived, to get all the people within the inclosure, and on no account to allow any one out, as he could not be answerable for their safety: our visiters he called Too-chara men; he appeared much agitated and very anxious the launch should get clear; he repeated in strong terms our visiters were bad men, and not Loo-chooers, but Japanese. A short distance, about 100 yards from our enclosure, the Too-charas had collected, and evidently several of them men of rank, as they had large umbrellas held over them; they were all armed; every man had two swords and a matchlock, or bow and arrows. Tung-chung-faw strongly urged I would have all our arms put out of sight, as if seen by our visiters they would be taken; this, after some remonstrance, I did, the Loo-chooers begging we would make no resistance should the Too-charas come in, but receive them as friends. My reply was, that I should be very happy to see them as friends, but if any attempt at plunder was made I should certainly resist. Our friend was greatly agitated, and assured me, if I trusted to him and would conceal my arms, no resistance or plunder would take place, and that if the arms were seen his own person would suffer. I complied, well-knowing, in the event of an attack, they would be of little use, as we had no ammunition, and little confidence could be placed in any but the officers; nevertheless, I wa determined to put a good face upon the matter. Our launch appeared to make little head-way against the heavy swell rolling into the bay, and I greatly feared she would not get off. This greatly increased the

anxiety of my Loo-choo friend, who in good English said, "Long-boat come back, very bad. Too-chara man, very bad." These men were evidently soldiers; each wore a dark-blue handkerchief tied round the forehead, and differently dressed to the Loo-chooers. I should say they amounted to between three and four hundred in number; my friend stated, besides chiefs and followers, they had 270. A party of the Too-charas visited the wreck, and three double canoes, with about fifty to sixty men were sent off, to detain and bring back the launch; fortunately they did not succeed, owing to the firmness of those on board the launch. The cutter towing astern of the launch was seized hold of by all three boats, motioning with their hands for the boats to return. One man, much fairer than the others, speaking very loud and with authority; on their being threatened from the launch, and the second officer and crew getting into the cutter, they let go and made for the shore: of this circumstance I was not aware until Captain Grainger returned; but, as it afterwards appeared, our Loo-choo friends were aware of the attempt, which caused their anxiety. About 2 P.M., the Too-charas moved off and encamped at the back of the Peekoo village.

Sunset; bar. 25·65; cloudy, with squally appearance to the northward: launch well out clear of the reefs; upon seeing which, and the cutter, with Capt. Grainger and second officer return, our Loo-choo friends became more composed and cheerful, assuring us we should not now be visited by the Too-charas.

Midnight; light, variable winds, and cloudy, with light rain.

Monday 31*st*, A.M.; light westerly winds and fine; long boat not in sight. All hands kept strictly within the fence, and informed, if any wished to visit the wreck they would be accompanied by two Loo-choo men; that our Too-chara visiters were still in the neighbourhood. 8h. bar. 29·30.

3 P.M. bar. 29·75, ther. 90·0; latter part calms, with light variable airs from S.W. to W.N.W.

Tuesday, Sept. 1*st*, A.M.; light westerly winds and calms. Received permission for our people to visit the wreck as usual.

Noon; bar. 29·80, ther. 85·0; light southerly airs and fine weather. P.M. light showers of rain. Saw two large junks pass standing to the northward.

Loo-chooers breaking up the wreck; poop and both decks off, with part of the outside planking. Several extra guard-houses building round our station. Midnight, light airs and calms.

Wednesday 2*nd*, A.M.; light easterly winds and fine weather: wishing to send an officer and part of the crew to the wreck, were informed we could not be allowed to pass the gate of the encampment; against which made a strong remonstrance, and stated it was absolutely necessary to take exercise as a preventative of sickness; upon which was told we must wait an answer from the higher authorities.

Noon, P.M.; received permission to walk within certain prescribed limits; latter part variable winds and calms.

Thursday 3*rd*, A.M.; light easterly airs and fine. Six small junks standing to the southward.

Noon; bar. 29·80, ther. 86; light easterly winds and fine.

P.M. walked down to the beach attended by two of the principal men and several of the inferior, as a guard, to see that we do not go beyond our lines. Since the arrival of the Too-charas, we have been much stricter watched than formerly: latter part calm and fine.

Friday 4th, A.M.—Light easterly winds and fine weather. No work to perform on board the wreck; our two principal friends have left the place; none of the crew allowed to go outside the compound.

Noon; bar. 29·80, ther. 82; calm, with heavy rain. Middle and latter, light north-easterly winds and cloudy.

Saturday 5th, A.M.; light north-easterly winds and cloudy,—sent a party of men with an officer out to fish, but owing to our limits for exercise being again circumscribed, returned without any.

10h. bar. 29·80, ther. 83·0; hard squalls and heavy rain from the southward, with heavy claps of thunder and vivid lightning. Noon, light southerly winds and cloudy weather: latter part fresh southerly winds and fine, with lightning both in the east and west quarters.

Sunday 6th, A.M.—Fresh southerly winds and cloudy, 2h. 30m. a very severe squall, and rain with heavy thunder and vivid lightning.

Noon, bar. 29·88, ther. 82; variable light winds and calms, with frequent heavy showers of rain,—the atmosphere very humid. The Loo-chooers busy in breaking up the wreck. Received information the junk would be ready in twenty days.

Latter part cloudy and fair with distant thunder; wind south-east.

Monday 7th, A.M.—Variable winds from south-west to south, with heavy rain and dark cloudy weather.

Noon; bar. 29·88, ther. 81; strong southerly winds and fine weather, latter part light winds and cloudy.

Tuesday 8th, A.M.—Southerly winds and fine. 6h. bar. 29·88, ther. 74; hard squalls and heavy rain, and continued until noon. Received a present of a bullock for the crew from our friend Tung-chung-faw.

Latter part light winds from north to south-west, and cloudy with rain at intervals.

Wednesday 9th, A.M.; light southerly winds and cloudy. 6h. ditto winds and constant heavy rain. Noon, ditto winds and weather.

P.M. bar. 29·88, ther. 74; latter part moderate south-easterly winds and fair weather.

Thursday 10th, A.M.—Moderate south-easterly winds and cloudy weather. Received an intimation from Tung-chung-faw to accompany him to see the junk,—proceeded accordingly, accompanied also by Capt. Grainger, in palanquins, and several of the Loo-chooers on horseback. The roads, owing to the late heavy rains, very bad. After a journey of two hours and a half arrived at the place, and were most agreeably surprised to find the vessel in a great state of forwardness. Frame up and planked, great part of the deck laid, and the masts ready. This being the thirteenth day since the keel was laid. The work however, is very rough and very inferior both as to strength and workmanship to Europeans. Her length over all is seventy-two feet. A dinner was prepared as on the former occasion, and at 7 P.M. we returned to our camp.

During the day fresh easterly winds and cloudy. 8h. bar. 29·90, ther. 76·0.

Friday 11*th*, A.M.—Moderate easterly winds and fine weather. Seacunnies making sails for the new junk, out of those saved from the wreck.

Noon; bar. 29.90, ther. 86·0.

P.M.; light south-easterly winds and fine pleasant weather. The wreck broke up down to the second futtocks.

Saturday 12*th*, A.M.; light south-easterly winds and fine clear weather. Several junks in sight standing to the northward. I find the rise of tide on full and change from four to six feet, the latter rises only with strong west or south-west winds, and high water about 6 o'clock.

Noon; bar. 29·90, ther. 85·00. Our friend Tung-chung-faw left us to visit his family for a few days.

Middle part south-east winds and passing showers of rain. Midnight light easterly winds and fine.

Sunday 13th, A.M.—Light winds from east to south-east and fine weather. Our Loo-choo friends have this day, for the first time, acknowledged the Port of Napa-kiang, being a short distance to the southward, and the islands to the westward the Makerimas. They also stated having heard of English ships, with troops, being on the coast of China, and the former beaten by the Chinese at Amoy.

Noon; bar. 29·90, ther. 84·0; south-east winds and cloudy to the north-west.

P.M.; light squalls and rain from north-west: latter part light variable winds and fine.

Monday 14*th*, A.M:—Moderate south-west winds and fine. Several junks in the offing standing to the northward.

Noon; bar. 29·70, ther. 87·0; squally from the north-west with rain.

P.M. Middle and latter part variable winds from north-west to west, and south-west, and cloudy.

Tuesday 15*th*, A.M.—Calm and cloudy. 8h. Fresh breezes and cloudy. Winds from south to south-west. Two junks working to the southward, said to be laden with firewood from the north end of the island, bound to Napa-kiang.

Noon; bar. 29·75, ther. 86·00. Ditto weather. People employed making the junk's sails, and drying two chests of government bunting saved from the wreck.

P.M. Distant thunder with hard squalls from the south, and heavy rain. Midnight: light south-westerly winds and cloudy.

Wednesday 16*th*, A.M.—Moderate breezes from N.N.W. to north-west and fine. 6h. 30m. saw a ship under English colours off the south-west point of the bay, standing off and on; rigged a flag-staff and displayed our colours, union down,—requested permission to go out to the ship, but which was objected to, on the plea of not having a suitable boat; they however offered to send a letter, of which we gladly availed ourselves. 9h. Observed the ship stand in round the south-west point apparently for Napa-kiang roads.

11h. 30m. Saw a brig rounding the north point of the bay and standing to the southward. Did all we could to attract her attention, without effect. Two small junks standing to the southward in company with the brig.

Noon; bar. 29·80, ther. 85·0; light north-westerly winds and fine.

P.M. 1·45. Saw the brig haul in round the south point, and shortly after let fly her top-gallant sails, and stop as if aground, her mast only in sight over the point. 2h.—Vessel in same position, and top-gallant furled. 4h.—Observed the brig loosen her head sails and alter her position. At this time Mr. Field, late chief officer of our old ship, landed from a canoe, and informed us he had come from Chusan in H.M.S. Nimrod, Capt. Barlow, and the brig was H.M. sloop Cruizer, both sent by Commodore Sir J. J. G. Bremer, to take us off the island, and that he had made the passage safely in the launch in seven days, and met with favourable weather: this was joyful tidings for all.

5h.30m. Got a canoe and left for Napa-kiang Roads, where I arrived at 9·30 P.M., and immediately went on board the Nimrod. Capt. Barlow received me with great kindness, and requested I would consider myself a guest at his table until our arrival at Chusan. The same offer was made by the gun-room officers.

Midnight; light northerly airs and fine.

Thursday 17*th*, A.M.; light south-easterly winds and fine weather. 8h.—Both H.M. vessels dressed in flags; H.M.S. Nimrod fired a salute of twenty guns, and Cruizer ten, in compliment to the chief of the islands. 10h.—The chief of Napa-kiang, with his three sons and my friend Tung-chung-faw, paid a visit to both H.M.S., accompanied by numerous followers, and received all the kindness and attention usual on such occasions. After partaking of refreshments on board each vessel, the chief and his party returned on shore.

P.M. Dispatched a canoe to Peekoo, by order of Capt. Barlow, with instructions to the master of the late ship, Indian Oak, to send up all government and public dispatches and letters for transmission to Chusan.

Friday 18*th*, A.M.; light airs and fine weather. At 2h. Mr. Power, third officer, arrived with the letter-bags and dispatches, which were immediately sent on board H.M.S. Cruizer, by order of Capt. Barlow.

Daylight; sailed for Chusan H.M.S. Cruizer, and the Nimrod warped into Barn Pool, to remain until after the change of the moon. Capt. Barlow having determined on the officers and crews of the late ship Indian Oak embarking in the junk built for us by our Loo-choo friends, and proceeding in company with the Nimrod. 10h.—Accompanied Capt. Barlow, with his officers, to return the visit of the Napa-kiang chief. On landing were met by several men of rank, who conducted us to the Court House, at the gate of which we were met by the chief and his sons, and conducted to a room where we sat on the mats, and where regaled with sackie, tea, numerous preserves, and sweetmeats, and eggs, coloured a deep red. The object of the ships' visit being made known, and thanks returned in the name of the British government for their kind treatment of the officers and crew of the late ship Indian Oak, and for the junk they had built, and a positive refusal on the part of the Loo-chooers to receive anything in the way of payment, either for the supplies required for her Majesty's ships, or what they had supplied to us; stating, all they expected or wished was, that in the event of any of their vessels calling at our ports, or meeting with a similar fate, they might be treated kindly and returned to their country. We now returned on board.

Midnight; frequent squalls and heavy rain.

Saturday 19*th*, A.M.—Southerly and south-west winds, with cloudy weather and rain, with squalls at intervals. 9h.—Took leave of Capt. Barlow, accompanied by Mr. Siddal, purser, and returned in a Loochoo boat to Peekoo, where we arrived about noon, and found all at the camp well, and everything in a state of forwardness for a start in the junk.

P.M.; throughout north-west winds and cloudy.

Sunday 20*th*, A.M.; bar. 29·88, ther. 81·0.—Throughout the twenty-four hours moderate north-east winds and fine weather.

Monday, 21*st*. A.M.—Commences with north-east and easterly winds, with dark cloudy weather. 6h. constant and heavy rain.

P.M. bar. 29·85, ther. 79·00. Throughout the twelve hours, easterly winds and constant rain.

Tuesday 22*nd*, A.M.—Light easterly winds and constant rain with dark cloudy weather. Ascertained the name of the river where the junk was built to be Too-koo-chie.

Noon; bar. 29·78, ther. 78·0: ditto weather; wind N.N.W. to N.E.

P.M. latter part fair weather but cloudy.

Wednesday 23*rd*. A.M.—Moderate N.N.E. to N.E. winds and fine weather. Sent an officer and ten men to Too-koo-chie to bend the junk's sails and get her ready for sea; also an officer and a party of men, to get the chain cables from the wreck which is now cut down to low water.

Noon; bar. 29·88, ther. 82·0, moderate north-east winds and fine.

P.M. At 1h. arrived from Napa-kiang, Captain Barlow and Dr. Campbell, of the Nimrod, for the purpose of inspecting the junk built for us and the wreck. My friend, Tung-chung-faw, having supplied ponies, Captain Barlow, Dr. Campbell, M. Siddal, of the Nimrod, and Captain Grainger, Mr. Field, and myself, proceed to Too-koo-chie, where, after a pleasant ride of two hours, we arrived and found the junk rigged and ready for sea; everything done that these good people thought would add to our comfort, it being arranged the vessel should proceed to Napa-kiang; on the 25th we returned to the camp at Peekoo, at 8. P.M.

Midnight; north-east winds and cloudy.

Thursday, 24*th*, A.M.—Moderate north-east and easterly winds and cloudy. Sent an officer with a party of men and the water-casks to the junk.

Noon; bar. 29·98, ther. 81·0, moderate easterly winds and cloudy; several large boats came for the purpose of removing our stores and baggage to Napa-kiang.

P.M. latter part dark threatening appearance to the west, and light easterly winds.

Friday 25*th*, A.M.; light variable winds and dark cloudy weather: daylight; easterly winds and fine weather; saw our junk in the offing, on her way to Napa-kiang, and several boats towing her.

8h., Mr. Field, first, and Mr. Power, third officers, with the principal part of the crew left to join the junk and take charge of her. Commenced embarking the stores.

Noon; bar. 29·90, ther. 84·0 light winds from N.E. to N.W., and fine weather.

P.M. during the latter part occasional showers of rain and variable winds.

Saturday 26th, A.M. Light north-west winds and calms; all hands with a party of Loo-chooers, employed shipping baggage and stores on board the small junks for conveyance to Napa-kiang. 10h. Captain Barlow and Mr. Siddal, purser of H.M.S. Nimrod, left for Napa-kiang.

Noon; squally appearance to the north-west.

P.M., 2h. All our luggage and stores being shipped, took leave of our kind friends at Pee-koo, and embarked on board the small junk for Napa-kiang accompanied by Dr. Campbell, of H.M.S. Nimrod. Received up to the last moment the same kindness and attention we have ever experienced from the first moment of our landing from the wreck, in addition to which one month's water and provisions for every man, this making the forty-third day of our sojourn at Pee-koo village. The wind being light when about half way to Napa-kiang, and six miles from our late abode at Pee-koo; we were joined by a large number of small boats which took our little squadron of small junks, five in number, in tow.

10h., arrived in Barn-Pool and anchored near our junk and H.M.S. Nimrod, where we were received by Captain Barlow and his officers with great kindness.

Sunday 27th, A.M. Wind southerly; Captain Barlow having very kindly offered me a passage in the Nimrod, and a plate at his table during her passage to Chusan, joined accordingly, and got all my baggage on board, as also my assistant, Mr. Payne, who was hospitably received by the young gentlemen in their berth; two sick men, natives of Madras, and government passengers in the Indian Oak, were also received and placed under the kind care of the medical officer. Capt. Grainger with the remaining passengers and crew joined the junk, named the Loo-choo.

Noon; southerly winds and fine weather.

P.M.; At 1h., accompanied Lieut. Williams and the young gentlemen on shore, with the presents from Her Majesty Queen Victoria to His Majesty the King of Loo-choo, presented by Capt. Barlow; viz. a picture of a female reclining on a couch, twelve copies of the Saturday and Penny Magazine, a telescope, and one small looking glass. On landing we were received at the causeway, and conducted to the same place as on the former occasion, with Captain Barlow; and after waiting a short the chief of Napa-kiang and his sons made their entry. We were regaled with sweetmeats, tea, and tobacco as on the former occasion, when we took our leave and returned on board the Nimrod. The chief of Napa-kiang arranged for his paying Capt. Barlow a farewell visit the following day at noon.

Monday, 28th, A.M. Throughout the twenty-four hours moderate winds from east to south, and fine weather.

P.M. 1h. 30m.—The principal mandarin of Napa-kiang, his two sons, my friend Tung-chung-faw, and attendants came on board the Nimrod, and were received by Capt. Barlow in his cabin, where the party partook of port wine and preserves, &c. At 3h. 30m. the party took leave,

when I embraced the opportunity of presenting my friend Tung-chung-faw with a Dollond's telescope. I had nothing else to offer in return for all the kindness we had received from this good and kind man, who was the principal magistrate at Pee-koo, the place where we were wrecked.

Tuesday 29th, A.M. Moderate south-east winds, and fine weather. 7h.--Unmoored, and placed boats on the extremity of the reefs forming Barn Pool to run out by. Received another visit from my good friend Tung-chung-faw, who presented me with five pipes and five fans, when he took his leave apparently much affected. I had, from the period of landing been a favorite with this good man.

8h.--Weighed and stood out into the roads, where we came to, to hoist in the boat junk, which Capt. Barlow has named the Loo-choo. Stood out to sea. 11h.--Weighed and stood out between the reefs for the Amakerima Islands to the north-west. Steered out between the latter and the Reef Islands in the channel from three to four miles wide in soundings from ten to twelve fathoms, although this passage appeared clear, I would not recommend it except in daylight and fine weather.

Noon: light south-east winds and fine weather, with a very heavy swell from the same quarter.

P.M.--5h.; saw the Island Aganhee hearing about N.W. ½ N. six or seven leagues. This island is shaped like a wedge or quoin, the south-west end forming a steep bluff, and the north-east sloping to a low point of an even aspect.

Sunset; saw the small island Lusima from the masthead, and the Island Koomi-sang to the westward.

During the night, light variable winds, with a heavy sea and cloudy weather.

Wednesday 30th, A.M.; wind variable; squally, with rain and dark cloudy weather. Junk Loo-choo in company.

Daylight: junk south-east, six or seven miles. Ship under easy sail during the night; the wind veering to the north-east, with squalls and rain, and a heavy sea setting in from the north-east, meeting the south-east, made the junk to labour heavy. Passed between the islands Aganha and Tasima; distance from the latter four or five miles. This is small and formed of steep spiral barren cliffs, with an extensive reef projecting from the east and west extremes.

Noon; strong easterly winds and a heavy sea. Tasima island S.b.E. about six miles.

P.M. Observed the junk Loo-choo bear round up under her stern. Sent a boat on board. On return found the ropes that keep the rudder in its place had stretched and the panel of the main-yard carried away. 4h.--The junk having made sail did the same. Up to midnight strong winds from the north-east, and a very heavy sea. Nimrod under double-reefed topsails, and carrying a light, owing to the junk's labouring so heavy. Great anxiety was felt for her safety by all on board.

Thursday, October 1st, A.M.---Strong north-easterly winds, with squalls and a heavy sea.

Daylight; more moderate, less sea, and the weather clearing up. Loo-choo in company to leeward, about S.S.W. five or six miles.

Noon; moderate winds and fine, with much less sea; latitude observed 27° 23′ north.

P.M. Moderate breezes and fine weather.

Friday 2nd, A.M.---Moderate breezes and cloudy, with squalls and rain at intervals. Junk Loo-choo in company. Wind N.E. to N.N.E.

Noon; ditto weather; latitude observed 28° 00′ north; wind north, north-east and east north-east.

P.M. Throughout the twelve hours moderate breezes and fine weather. Junk Loo-choo in company.

Saturday 3rd, A.M.---Throughout moderate breezes from north-east to north north-east, and a heavy swell.

Daylight; several junks in sight; Loo-choo in company. 8h.--Saw Pata-he-cock island west north-west eight or nine miles.

10h.30′.—Bore up and took the junk Loo-choo in tow.

Noon; tacked to the eastward; several junks in sight.

Peak of Pata-he-cock W. ¼ S., eight or nine miles.

Bluff Point, or North Extremes of the Quesan Islands, N.W. ½ N.; latitude observed 29° 24′ north.

P.M. Light N.N.E. winds, with a heavy swell and fine weather. Loo-choo in tow. 7h.20m.--Shortened sail and came to in seven fathoms, and furled sails. Cast off the junk. Buffalo's Nose W.b.S. Tree-top Island N.W.b.N. A brig in sight to the eastward.

Midnight; strong northerly winds and cloudy.

Sunday 4th, A.M. Strong winds from N.N.E. to N.N.W, and fine with strong puffs at times.

9h. 30m Weighed and made sail, working to windward for Groups Passage: boarded the Spy brig opium trader. 2h. 30m. P.M. shortened sail, and came to under the Tree Top Island, in six fathoms and a half, to allow the junk Loo-choo to come up. Kee-too point, north 24° west, Tree Top Island, north 17° west, Tinker, south 66° west, Buffaloes Nose, south 14° east.

Midnight: ditto weather, junk Loo-choo in company.

Monday 5th, A.M. Strong N.N.E. to N.N.W. winds with severe puffs at times. 9h. weighed, junk in company, to work through Goughs Passage. P.M. Passage Island W.N.W. half a mile. Finding the junk gained a little ground, Capt. Barlow dispatched Lieut. Williams with an armed boats crew, to see her safe to the anchorage, and made all sail for Chusan.

3h. Shortened sail, and came to, between the Elephant and Deer Island.

(Signed) J. J. B. BOWMAN,

Agent for Transports, Eastern Expedition.

[We have copied the foregoing log verbatim, for the purpose of making a remark or two on it, and having laid down the positions of the vessel at noon of each day on the chart, both by observation and dead reckoning,—we have come to these conclusions. First, that the chronometer was of no manner of use, except to mislead. Secondly, that the two positions of the Indian Oak, by DR. and observation on the 12th, are above eighty miles from each other, the former making her have a course about south-east, and the latter about S.b.E. from the preceding day. Thirdly, that if the dead reckoning had alone been

trusted, it would have been seen that the vessel was running directly for the islands, on which she was wrecked, and *ought* to have been on shore about twenty hours sooner! In a recent notice which appeared in the pages of the *Nautical* on the merits of Lieut. Raper's work, we made some home remarks on the stock of knowledge to be found in the masters of the thousands of British vessels constantly navigating the ocean, and we pronounced that stock to be but small; in many, just sufficient for the purposes of navigation, and in many others not even that. We moreover said, that to the latter class, "good charts themselves are of little avail, and the chronometer itself, however excellent, is yet to him who cannot fully avail himself of its advantages, frequently calculated to mislead." Certainly no assertion has been more completely verified than the foregoing. Of what use was the Indian Oak's chronometer, "but to mislead"? for it leads her to suppose that she is many miles to the westward of the islands, and even long after she was wrecked, places her 32′ to the westward of them, while the latitude (see 19th p. 304,) is tolerably correct! We really do regard the loss of the Indian Oak, as far as navigation is concerned, as most discreditable to the merchant service, as fully confirming the observations we have made on the ignorance of the greater part of our masters of merchant ships, and adding another proof to shew the necessity of establishing that system of examination, of masters and mates of merchant vessels, so long talked of. Had it been a long and circuitous navigation, there might have been some allowance for the chronometer going badly, but here three or four days only elapse, sufficient to make a passage from one port to a group of islands, the position of which is well known, and the ship is clumsily cast away upon them, when she is supposed to be miles from them. But as for rating the chronometer, we much doubt that it was ever thought of.

But it is grateful to turn from this subject to the treatment of our shipwrecked countrymen by the islanders in the midst of their disaster. Every possible assistance is given them to escape from the fury of the elements, and to nourish and protect them afterwards until they could be safely returned to their native land! Alas, how painful to contrast such behaviour with that experienced on our own shores, where it is too well known, that in place of protection, plunder is the order of the day! We say this is too well known, and notwithstanding our civilization, there is not that Christian character exercised *generally* on these melancholy occasions which prevails among the semi-barbarous natives of the Loo-choo islands, where the light of Christianity has not yet penetrated! The people of Loo-choo have indeed performed the part of the good Samaritan spontaneously, and we trust it will not be forgotten by Englishmen. By the way, how amply this confirms the character attributed to them by Capt. Hall, when he visited them in the Lyra long ago. The same kind attention was shewn to the Alceste and Lyra* as to the shipwrecked mariners of the Indian Oak, and no return, as in the latter case, could they be prevailed on to accept. Indeed, how much is there which might be copied by civilized nations in the behaviour of the uncivilized people of the Loo-choo islands.

* We perceive another edition of the interesting narrative of the Voyage of the Alceste and Lyra has just been published by Moxon, of Dover-street, London, at an extremely moderate price.

NOTES ON TRINIDAD IN 1803. *By the late Capt. E. Columbine.**

TRINIDAD is divided naturally into two distinct parts.. A chain of lofty mountains extends along the whole of the north coast, upwards of

* The survey of Capt. Columbine was begun in January, 1803, for the use of government, by order of Commodore Hood, and was intended to have been continued round the island. But as war soon broke out again, the other more

fifty miles, continuing inland four, five, and six miles; and the remainder of the island is low and apparently flat, with two inconsiderable ridges of hills running parallel to the north mountains; one in the middle, and the other some distance along the south coast. The greater part of the land which thus appears flat, is not so by any means, being much broken by small hills, which though steep and troublesome are not of sufficient size to prevent the whole appearing as one vast plain. With

material occupations of the ship, and a long course of severe illness and bad health, rendered it impossible to complete them.

The longitude of Chaguaramus was determined by seventy-nine lunar observations. These observations were checked or rather corroborated by the difference of longitude, which a time-piece gave from Barbados.

OBSERVATIONS FOR THE LONGITUDE.

Place.	Objects obs.	No. obs.	Result of longitude.	
	α Arietis E of ☾	5	61° 42′	
At Chaguaramus	,, ,,	4	61 34	
The watering place near	,, ,,	6	61 50	
Mons. Dest	,, ,,	6	61 45	
	☉, west of ☾	6	61 30	
		6	61 48	
		33	61 43	10 the mean.
Taken at the Careenage, but reduced to Chaguaramus.	☉, east of ☾	46	61 49	
	The mean of these		61 46	5

The time-keeper gave for the difference of longitude, between Bridgetown and Chaguaramus 2° 8′ 30″.

As the uncleared state of the country rendered it impossible to throw a suite of large triangles over it, the other longitudes, particularly the length of the N. and S. coasts, were derived from that of Chaguaramus, by a well regulated time-keeper. The latitudes were taken by an astronomical quadrant. The stars have been principally used for this purpose, the instrument being always turned carefully round, with the same adjustment after observing a star in one hemisphere to observe another in the opposite one. Several stars were observed for each latitude.* The number of feet in each mile of latitude were regulated as follows:—

56,763 toises; the mean of a degree at the equator, as observed by Ulloa, Bouguer, and Condamine.
57,037 toises; a degree of latitude at 33° 18′ by La Caille.
57,438 ,, ditto at 66° 20′ by Maupertius.

Now, allowing that the toise is equal to 63959 English feet, a mile of latitude at 10′ should be nearly 6059 feet. But as General Roy's calculation from Mons, Bouguer (Phil. Tran.), make it about 6048, that measure was preferred: in like manner the mile of longitude was taken at 5956 feet.

The island had been previously surveyed in a certain degree by the Spaniards in 1793. The length of the four sides given by them differs very little from Captain Columbine's measurement; but their longitude is sixteen miles to the eastward of his. As they had a very great work to perform, (the survey of the

* Their declinations were taken from Professor Bede's catalogue.

the exception of swamps, natural savannas, and ground in cultivation, one continued thick forest covers all the island, even the mountains from their utmost tops down to the wash of the sea. Many parts of it are absolutely impenetrable, but in general the woods are sufficiently open for sportsmen to go on foot in quest of the game with which they abound.* Several of the trees grow to a stupendous size; and if it was possible to get them to the sea shore the vast quantity of hard woods of different kinds, would prove a great source of wealth. But the difficulty of removing such heavy timber obliges the proprietors of estates, to let it remain where it falls, and rot there, (an operation which requires many years,) reserving only enough for their own mill-work and buildings. Large trees producing fine flowers, of a size proportioned to the parent stock abound here. In January and February, whole groves of Bois-immortel,† planted by the Spaniards to protect their cocoa walks from the wind and sun are entirely red, between scarlet and bright purple. In March, the Pouie tree‡ begins to unfold its beautiful blossoms, and in the following month is completely clothed in

Gulf of Mexico,) they do not appear to have bestowed much time on the details of the coast of Trinidad.

Mallet has enlarged his work from theirs, with some capricious alterations, but not by actual survey. His map being composed for government, it is necessary to observe, that many of the large branches of the rivers on it do not exist, and that the rivers themselves are greatly exaggerated. Hence a reduction of the inland navigation tends materially to alter the value of the land. As to his division of it into imaginary lots, it is extremely fanciful, and unless it was all equally fertile and level, can never serve as a guide for the allotment of it; which should be, in the first instance, adapted to the true course of the rivers. The principal dimensions are nearly as follow:—

	Stat. Miles.
The North side:—A right line drawn from the north-west point to Point Galere	53¼
The East side:—A right line drawn from Point Galere to the south of Point Galgota	48¼
The South side:—A right line drawn from the east of Point Galgota to the west of Point Icaque	65
The West side:—A right line drawn from the south of Point Icaque to the north-west point in Boca Mono	49¼

The whole island (without reckoning the small ones) contains 2012 square statute miles: Mr. Mallet says 2400, a difference amounting to a fifth of the whole. It was difficult to account for this, as the extreme points which he has taken from the Spanish officers include nearly the same space as Capt. Columbine's observations have done. But, in examining his scales, it was found that he made ten British miles equal only to 6′ 50″ of latitude, instead of 8′ 36″·4, which accounts very nearly for this great difference.

In a country so extremely woody, it is not possible to measure all the heights of the hills precisely, without employing more time and labour than the subject demanded; yet the heights given are within a few feet of the truth. But at Gaspar Grande and Chaguaramus, where precision was necessary, the hills were measured both by a levelling instrument, and by the common trigonometrical mode.

* There are also Indian paths, leading in most directions across the island.

† It is a high tree, and grows remarkably quick.

‡ The Pouie is a common forest tree, nearly as hard as lignum vitæ.

brilliant yellow. Others again, produce flowers of various united colours and elegant forms.

Three considerable rivers* run through this low part of the island, the Oropuche and Ortoire on the east coast, and the Carouni on the west, besides several small ones. But their beds are so much beneath the level of the sea, through the greatest part of their course, that they are nearly all salt in the dry season. In the wet season, the torrents of rain which pour into them force out the salt water, rendering them perfectly fresh. When the surveyors were on the east coast the rains had not begun, and the rivers were found to be salt, which distressed them for water at L'Ebranche, and they were obliged to send a boat nearly up to its source, a mile and a half, before they could get any. The next day rain fell, and the water became quite fresh down to its mouth. The Ostoire, which is said to run twenty-four miles into the country, is salt eighteen miles upwards in the dry season, but in the rainy season it is fresh at its mouth. The same is to be said of the others, which makes it evident that these rivers are supplied not from any springs, but from the rain which falls in the wet season, and which for some time after still supplies from the draining of the flooded woodlands, a little fresh water towards their source, whilst the sea occupies all the rest. Another evil attending these rivers is, that all their mouths are barred, except the Chagoune, and Aripo, small rivers, or rather wide salt-water ditches in the Gulf of Paria; to one of which it is proposed to lead the canal from the Ortoire, instead of leading it to the Carouni, the mouth of which is barred. The Ebranche also, emptying itself under the cover of a rocky hill, has very little bar. These remarks do not in the least apply to the rivulets which take their rise in the mountains. The mountains which lie along the north side are of themselves very fine and noble,† and enclose many vallies equally beautiful and fertile. Those of Cueca and Diego Martin, are capacious and highly cultivated. Marival is some miles long, taking a winding course between the mountains from Port Spain to St. Juan. Much of this is in cultivation, and the whole of it is uncommonly picturesque. The land at the south part of these mountains is particularly rich, and it is proposed to lay it open by cutting a canal from the Oropuche on the east side to the Chagouane on the west. This, when executed, will be a most beneficial work, but as it will be very expensive perhaps the best way of getting it executed would be by giving grants of land on the banks of it, with the usual obligation to clear and cultivate, and an additional one to cut and keep so much of the canal in order.

The Bocas. These are the northern passes into the Gulf of Paria, beween the west end of Trinidad, three islands lying off it and the coast of America. They were called Bocas del Drago by Columbus, (the Dragon's mouth,) from the velocity of the current which he found setting through them. This, however, is very various. In autumn when the Orinoco swells, at which season he passed them,‡ its rapidity is

* Considerable in proportion to the island.
† Maraccas, the highest of them is 2947 feet above the level of the sea.
‡ In 1498.

greatest. The three islands which form these passages, are Mono or Apes island, Huevo, and Chaca-chacare. The first is about 1½ mile square. It has two lofty hills, from whence the land on the south shore shelves down to the sea, in ridges singularly sharp, sinking into deep valleys on either side, the faces of which are mostly cultivated, although some of them are so steep that their inclination above the horizon cannot be less than 50°. Seven families, (of which only one is English) cultivate cotton here; and one of them, M. Dehort, raises a little sugar. Neither this nor any of the other islands of the Bocas have any water, the inhabitants either procure it from Chaguaramus, or save the rain in cisterns.

Huevo, (Egg Island,) is small and belongs to a Frenchman. About a fourth of it is in cultivation.

Chaca-chacare was granted about ten years past by governor Don Chacone, to the present proprietor, Mr. Carey, who cleared and cultivated it with cotton. Here is a pond of mineral salt like those at St. Kitts, Anguila, &c., but no use is yet made of this. When we were among these islands we scarcely had any rain, whilst we saw deluges pouring down about Port Spain, and although Trinidad has experienced a very long wet season, yet Chaca-chacare has been in want of sufficient rain to bring forward the crop of cotton, most of which is ruined. This usual dryness and the continued draught of wind occasioned by the Bocas, render these little islands remarkably healthy. We had indeed the misfortune to lose Lieut. Gosling, Dr. Wallace, our surgeon, and a seaman, during the few days we lay at Chaca-chacare, but they all died from causes not local. At Chaca-chacare we caught a green turtle, which being made into soup, was more than our ship's company could eat in one day, and once we found entangled in our turtle net an immense flat-fish—a kind of ray, which most of our people ate with great relish. It measured fourteen feet from fin to fin, and ten feet in length, without including its tail, which was long and small. Whilst we were among the Bocas, we never saw less than three whales each day, on the most moderate average.*

Having passed the islands of the Bocas, the northern mountainous ridge presents itself shelving down in many places close to the sea, and as the heavy appearance of an endless forest is hereabouts more broken by cultivation than elsewhere, the forms of the hills very beautiful, and much varied by vallies intersecting them in opposite directions, and the shore filled with every change of rocks, sandy bays, and overhanging trees, it would be difficult to find any sea-coast, or even shore

* One morning being in my boat sounding, I saw a thresher beating a whale, which seemed so exhausted as to be incapable of much resistance. The thresher seemed to be tired also. He lay quiet about ten minutes; and then recommenced his attack on the whale, who now lay defenceless on the surface of the water. Nothing was seen of the thresher but the enormous fins, (apparently ten or twelve feet long,) with which he beat his antagonist, rearing them right up and poising them in the air a few moments, as if to take a good aim for his furious blow. After persecuting the whale for some time longer, he left him. I saw also two more battles between these monsters of the deep within the space of ten days; but in these the blows from the threshers were not so frequent, the whales being in full vigour, leaping totally out of the water, and apparently endeavouring to strike their enemy with their tails as they fell.

of a lake, more interesting. This scenery continues about eight miles, where it is totally changed by a low swampy shore, abruptly turning to the south. In this most ill-chosen corner stands the town of Port Spain, and from hence nothing is to be seen to the south but an immense apparent flat, bounded as far the eye can reach by disgusting mangroves. Some solitary hills rise out of the plain, but do not adorn it. The foot of the mountains is here some distance from the sea, leaving a large well-cultivated plain, at the south-east part of which the town stands. It is large, regularly built, chiefly of wood, and is rapidly increasing. The roads near it are extremely good, well laid out, and bounded by hedges of lime bushes, in some parts interspersed with rows of orange trees. Immediately to windward of it is a vast swamp of some miles extent, chiefly overgrown with mangrove trees. The air which is blown from it to Port Spain is extremely injurious; but cutting down and clearing it, unless by very small pieces annually, would be a dangerous experiment, as nothing proves more fatal in the West Indies than the effluvia of the putrifying vegetable matter on newly cleared land.

The water in the road of Port Spain is very shallow, a mile and a half off there are only three fathoms, and it is extremely foul and muddy; nearer the shore it is proportionally more filthy. In addition to this evil, ships at this anchorage lay exposed to the bad air from the same great swamp, which is so fatal to Port Spain in the rainy season. There can be no wonder at the mortality which prevails among the crews of the merchant ships, which are obliged to lay here any considerable time. The course of the tides, both ebb and flood, being each checked by an opposing shore in this corner where the town stands, they naturally must deposit there much of the mud, which they carry along with them. The consequence is, that in process of time, Port Spain will be an inland town; this operation of nature is going on fast, but the evil seems to be without remedy. Even the Caroni, (near the town,) though it pours out a furious stream in the rainy season, is not able to wash away the muddy flat which is constantly increasing across its mouth. It has been proposed to cut a new channel for this river nearer to the town, in hopes that its stream would prevent more mud from collecting in this bight, but as it evidently wants force to clear its own mouth, little can be expected from such an undertaking. From Port Spain the mangroves bounding the great swamp extend seven miles, and have so encroached upon the sea that not a foot of ground or even mud is to be seen as you row along the edge of them. At this distance cultivation begins again, in a small degree, and as nearly all the land along the sea shore from hence to Point Icaque is the property of individuals, the margin of the coast is everywhere spotted with houses, and cane patches, but which bear a very small proportion to the quantity of uncleared woods which divide them.

From this and the preceding remarks some idea may be formed of the quantity of land cultivated on the west side. In the interior a slip of land is planted all the way from Port Spain to St. Joseph, and thence, with some interruptions, to Arima. There are also some estates extending a few miles inland, at the back of Naparima. It would be easy, from the documents in the Surveyor-General's office, to ascertain

the quantity of land which is already private property; but it would be very difficult to determine how much of that is cleared and cultivated. Probably there may be about fifty square miles in cultivation on the west side, and interior, and eight or ten on the east, but this is a mere rude guess.

(To be continued.)

AUSTRALIAN NAVIGATION.—*Directions for the coast about Rottenest Island.*

The following, which has been transmitted to Her Majesty's Government, we lose no time in publishing for the benefit of navigation.

Colonial Secretary's Office, Perth, Oct. 15th, 1840.

HIS Excellency the Governor, in directing the publication of a communication which has been received from the Honourable the Surveyor-general, relative to the establishment of two beacons as guides to vessels approaching Gages Roads through the southern passage, near Rottenest, together with the necessary sailing instructions for vessels approaching this island, avails himself of the opportunity thus afforded him of expressing his high sense of the important and valuable services rendered on this occasion by Capt. Wickham, aided by the zealous co-operation of Lieut. Stokes, and the officers and crew of H.M.S. Beagle, whereby a lasting benefit has been conferred, not only on the inhabitants of Western Australia, but to all persons in any way connected with commerce and navigation in these seas.

By His Excellency's command,
PETER BROWN.

Survey Office, Perth, Oct. 15th, 1840.

SIR.—I have the honour to report, for the information of His Excellency the Governor, my return, yesterday evening, in H.M.S. Beagle, from Rottenest Island, where, by the kindness of Capt. Wickham, and the zealous co-operation of Lieut. Stokes, and the officers and crew of that ship, two very serviceable beacons have been erected upon Duck Rock and Fishermans Rock, for pointing out the best navigation into Gages Roads, through the southern passage, near Rottenest. These sea marks, and the admirable chart of the island and passage, constructed by the indefatigable perseverance of Lieut. Stokes and his assistants, have enabled me to forward to His Excellency the enclosed sailing directions for the vicinity of Rottenest, which I beg leave to recommend should be made public as early as possible,—no minute chart or instructions for that navigation, having hitherto been published for the guidance of mariners.

J. S. ROE, *Surveyor-General.*

To the Hon. the Colonial Serretary.

SAILING DIRECTIONS FOR THE NAVIGATION ABOUT ROTTENEST ISLAND.

ROTTENEST ISLAND, six miles in length, E.b.N. and W.b.S., with an extreme breadth of two miles and a half, has an irregular hummocky surface, not much wooded, and may now be distinguished from Garden Island, and the contiguous main land by a white obelisk, fifteen feet in height, with a pole in the middle, of the same length, which has recently been erected on its highest part near the centre of the island. This sea-mark being elevated about 157 feet above the level of the sea, may be seen from a ship's deck in clear weather, at the distance

of seven or eight leagues, and will shortly give place to a lighthouse of greater elevation. Its position, according to observations in H.M.S. Beagle, is latitude 32° 0′ 14″ south, longitude 115° 29′ 6″ east from Greenwich.

To round the island on its north side, a ship should not approach nearer than one mile in order to avoid the Horseshoe Rock, which lies three-quarters of a mile off shore, at the distance of two miles north 39° east from the island's west extremity, and Roes Reef, situate three quarters of a mile north 16° west from a small rock with a cask beacon upon it, about half a cable's length from the island's north-east point. The beacon is upon Duck Rock, and the projection near it is Bathurst Point. A ship will be clear to the northward of Horseshoe Rock while Duck Rock beacon is kept open of the north point of Rottenest; and Roes Reef may be cleared on the north by keeping the west end of Rottenest, (Cape Vlaming,) open of the north point, until Duck Rock bears south; a course may then be shaped about E.b.S., for a remarkable white sand patch on the main, which will be distinctly visible three miles and a half north from the entrance to Swan River; and when some rocky islets near the south-east side of Rottenest are seen to the S.S.W., opening round the east end of another small rock with a cask beacon upon it, one mile and a quarter S.E. ½ E. from Duck Rock, a S.E.b.E. course will conduct into Gages Roads.

Kingston Spit, in front of Thompsons Bay, extends two miles east from Duck Rock, and a long mile N.E.b.E. from the beacon last mentioned, which has recently been placed upon Fishermans Rock, a small mass of white rocks about two cables length north-east from the sandy east point of Rottenest Island, distinguished by the name of Point Philip. To clear Kingston Spit on the north, keep Duck Rock a little shut into the south of a bare pointed hill near the northern shore of Rottenest; or should the bare hill not be distinguished, keep the north extreme of Rottenest to the southward of W. ½ S.; and to clear Kingston Spit on the south, keep the south extreme of Rottenest (Point Parker) open of the next projection to the north-east of it (S.W.b.W.) Thompson's Bay is a fit resort for boats only, being full of shoal rocky patches and sand banks, to the distance of a mile from the shore,—the remainder of Kingston Spit being occupied by foul uneven ground, with depths varying between five and two fathoms; near its north and east edges are seven fathoms, deepening to nine and ten in half a mile. Between Point Philip and the next projection, a long half mile to the S.S.W. (Bickley Point) there is good shelter in Beagle's Anchorage from all the usual north-west and south-west gales of winter, the best berth being in four fathoms water, sandy ground, nearly half a mile south from Fisherman's Rock, and a quarter of a mile north-east from two small rocks called the Twins,—the south point of Rottenest being also in a line with Bickley Point. In this situation a vessel should moor, on account of the limited space.

On the south-east side of Rottenest there is a good channel, two miles and a half wide, called the Southern Passage into Gage's Road,—the only obstruction in it being a patch of three fathoms, sand and weeds, called Middle Bank, in a line between Point Philip and the Champion Rock, at one mile and three-quarters from the former, and one mile and a quarter from the latter. After a gale, the north-west swell round the east end of Rottenest, crossing the ocean-roll from the south-west, breaks heavily at this spot, and indicates its position; it may, however, be avoided by borrowing towards the rocky islets near Rottenest, which have no dangers fronting them beyond a cable's length; and the bank is cleared to the eastward when the beacon on Duck Rock opens round to the north-eastward of that on Fisherman's Rock. These two beacons in a line lead also about a cable's length to the north-east of the Champion Rock, which has only nine feet water upon it, with four and five fathoms all around. This danger, which lies on the south-east side of the southern passage, is at the north-west extremity of a collection of rocks and foul ground that extend two miles and a half N.N.W. ½ W. from the Stragglers toward the east end of

Rottenest, without any channel amongst them which can yet be pronounced safe. In working up for the southern passage with a northerly wind, the Champion Rock and dangers in its vicinity may be avoided by keeping the high lump of rock, called the Mewstone, open to the south-west of the largest and highest of the Stragglers, until the south-west end of Rottenest shuts in round its south point, bearing about W. ½ N. This last mark will carry a ship clear between Champion Rock and Middle Bank; but should the Mewstone and Stragglers not be satisfactorily distinguished, the beacon on Fisherman's Rock should not be brought to bear more to the westward than north 30° west by compass, until the south-west point is shut in by the south point of Rottenest, as before shewn.

Approaching Rottenest and Southern Passage.—In steering for Rottenest Island and the southern passage from the westward, the shore should not be approached nearer than half a mile, and the bays on each side of the south point are foul and rocky. Porpoise Bay, on its north-east side, is also fronted by a low rocky mass, called Direction Islet, which lies one mile and a quarter east 23° north from the south point, and has deep water to within a cable's length of its south-east side. The summit of Direction Islet in a line with a hill with some trees on its summit (Tree Hill), about half a mile to the north of the south point, leads directly over Middle Bank; therefore Tree Hill a little open to the north of Direction Islet leads clear to the north of Middle Bank,—and the same hill on with south point of Direction Islet leads clear on its south side. The next grey rock (Wallace Islet), half a mile to the N.N.E., is very rugged, and lies close in to Bickley Point,—it has two and a half fathoms, rocky ground, nearly a quarter of a mile south-east of it, which may be avoided in hauling up for Beagles Anchorage by keeping the south point on with the southern extreme of Direction Islet until Fishermans Rock bears north. The Twin Rocks lie near each other, a quarter of a mile north-east from Wallace Islet, and are bold and steep. Round their north-east side is Beagle's Anchorage, which is a secure retreat in winter.

Currents.—In beating up to Rottenest against a strong northerly or southerly breeze, much ground will be gained by working in the stream of the island, in order to avoid the strength of a lee current, which is found on such occasions to run at the rate of one to one and a half miles an hour. The Beagle found it high water at full and change in Thompson's Bay at 7h.50m. P.M.,—tide ebbing ten hours, and flowing fourteen hours, with a rise not exceeding thirty-two inches.

Winds.—Sea and land breezes prevail in summer. From March to October, north-west gales may be expected, rising from the northward, preceded by a fall in the barometer,—blowing longest at north-west,—strongest between W.N.W. and west,—and moderating after a hard squall from the south-west.

J. S. ROE, *Surveyor-General.*

Western Australia, Oct. 11th, 1840.

THE APPROACHES TO AUCKLAND.

WHILE we are on the subject of Australian Navigation, we may also introduce here the following extract from the shipping news of a late number of the Times Journal relating to an adjacent part of the world, namely the north-east part of New Zealand. We copy it as it stands in that journal and have added various necessary corrections to make it intelligible to seamen, which perhaps the writer originally intended, but his meaning appears to have been so much departed from, that in its present condition it is next to useless.

"The following has been received at Lloyd's, from the Board of Trade relating to New Zealand:—

"Sir,—I am directed by the Lords of the Committee of Privy Council of Trade to transmit to you the following observations on the approaches to the town of Auckland, which have been received by Her Majesty's Government, from the Governor of New Zealand, viz.

"The town of Auckland on the southern bank of the river Waitemata, is situated in lat 30° (*a*) 51′ 36″ S., long 174° 43′ E., nearly. The entrance to Waitemata is on the western side of the Shouraka (or the Frith of Thames), and is screened from the N.E. by the islands of Range, Toto, Moton, Tasso, and a succession of precipitous islets lying off the N.W. end of the large island of Waihekeh. (*b*)

DIRECTIONS.

"Vessels bound to Auckland from the northward, after making Point Rodney, should steer for the island of Tiri Tiri Mantangi (taking care to avoid a small rocky islet lying one league N. 53 W. (mag.) from point Takatoa Tenoa) and passing in on either side steer for Rangi Toto, keeping between that island and the main, and not approaching either in less than five fathoms water, When to the westward of Rangi Toto, the bluff N. head of the river Waitemata becomes visible. Vessels coming from the eastward should enter the Frith between the Cape Colville and the great Barrier, passing on either side of the small island of Moton Takupa, which is about a league distant N.N.W. from the Cape, whence a course may be shaped for the mid-channel between Tiri Tiri Mantangi, and Moto Tapon, which nearly joins Rangi Toto, are visible. Then proceed as if coming from the northward. (*c*)

Vessels drawing less than 18 feet may enter the Telemaki Channel (*d*) on either side of Waihekeh, and pass to the southward of the group formed by Waihekeh, Moton, Tapon, and Rangi Toto (*e*) to the entrance of the Waitemata, but this channel is not recommended to strangers unaided by a pilot, in the event of stress of weather or other emergency, excellent shelter may be found inside any port of Waihekeh, or under the east end of Moton Tapon, the channels leading to it being perfectly free from danger. On approaching the entrance to the river care must be taken to avoid a ledge of rocks extending in a N.W. direction from the southern shore which may be avoided by keeping the northhead

(*a*) This must be 36°, instead of 30° as no part of New Zealand is in 30° latitude. Assuming that 36° is meant, the position of Auckland will be about a mile and a half inland from the south shore of the gulf, and immediately opposite to Second Point, (being in the same longitude,) by the survey of Lieut. Fisher and the officers of the Herald, lately published by the Admiralty.

(*b*) These must be Rangui Toto, Moton-tabou, by the Admiralty chart of the Shouraka Gulf.

(*c*) We have endeavoured to ascertain the meaning of this part of the directions, and believe that the rocky islet alluded to lies south 53° east, from the point Takatou-fenoa, instead of north 53° west. The meaning of that part, alluding, to vessels from the eastward, (although there is some imperfection in the latter part,) is perhaps sufficiently clear with the above chart, reading Moton-tabou and Rangui-toto for the names.

(*d*) Called Tehmaki Strait in the chart.

(*e*) Moton-tabou and Rangui-toto.

southward of West (mag.), until a remarkable rock on the south shore, resembling the Bastian of Fort (called the Bastian Rock), bears S. (mag.) (*f*) With a fair wind the N. head may be rounded at half a cable's length distance, and a mid-channel course will lead to the anchorage off the town. With a beating wind tack on the south shore, on coming into six fathom water, and on the north shore, which is much steeper at the first shoal cast. The only dangers within the heads are a spit of sand that projects half a cable's length from a low sandy point on the north shore about a quarter of a mile inside the north head (*g*) and a mud flat which lines the southern shore to a distance of nearly one third of a mile throughout the whole river, and all the bays on both sides are shoals. These dangers may be avoided by attention to the lead, and the directions given above.

"The navigation of the Gulf of Shouraka, with ordinary care, is perfectly safe, but attention is required in hazy weather, or at night, to avoid many small islets, which vary in height from 6 or 8 feet to 100 feet and which are generally surrounded with deep water. The only known exceptions to this rule are the Perogues, (*h*) in 39° 7′ S., and long, 175° 18′ E., according to D'Urville, and a rock on which the sea breaks occasionally, called Simpsons Rock, lying about four or five miles N.N.E. from the N.W. end of the Great Barrier. There is a sunken rock reported to exist on the N side of Waihekeh, and is marked on the charts about N from the centre of that island a long league off shore, the position, or even the existence of which, is not positively known. These rocks, as will be seen by reference to the chart, are out of the ordinary track of vessels; but contrary winds may oblige vessels to approach them, and therefore are worthy of notice. The rock off Point Tokata Tenoa, above alluded to, stands about eight feet above high water mark, and is bold to. Its position is accurately laid down by the Baron D'Urville. High water at Waitemata on full and change 6h. 45m. Rise and fall about 11 feet on the spring tides. The flood runs to the southward with the Frith of Thames, but to the northward on the coast.

As we have not met with the original document from which the above was printed, we insert the foregoing for the advantage of our own readers. It is quite evident however that the New Zealand orthography requires considerable attention to preserve it free from such inaccuracies as we have pointed out; but the general careless manner in which the

(*f*) A dangerous reef extends in a northerly (mag.) direction, above a mile from the south point of the entrance of the Waitemata, by Lieut. Fisher's chart. We shall be glad of the position of the Bastian rock alluded to.

(*g*) The Sandy Point is three-quarters of a mile within the north point of entrance, and the spit extends about a cable's length and a half east from it.

(*h*) Pirogues. The middle of the reef called the Pirogues lies in lat. 36° 16′ south, and the reef is about a mile in extent, in a north-west and south-east direction, about two miles and a half on a south-east course from the islands off Cape Kruzenstern of Otea, which we presume is the great barrier before alluded to; the longitude is identical, but the mariner will look in vain for Pirogues in 39° 7′ south. Simpson's Rock is not known to us, but that off the north shore of Wai-hekeh appears on the chart.

important particulars of geographical positions and directions for ships appear to be turned out of hand, on which particulars their very safety so much depend, certainly is not calculated to be of much service to them.-Ed.

Notices to Mariners.

Pillau, April 20.—After special soundings of the channel have been taken, the buoys which mark the flats and shoals in the same, as well as those streaks running from the shore into the Haff have been laid; and for the information of the inexperienced navigator the following remarks will be found very useful:—On Geerster Point, being the most dangerous shoal in the Haff, a large buoy, painted half white and half black, is laid, which may be seen at a great distance. In the middle of the mouth of the channel there is a black buoy, with a cross broom, which according as the wind serves may be passed on either side. The other black buoys, in leaving the Haff, must be passed on the starboard, and the white buoys which mark the westerly flats on the larboard side. The Kohlholz Rock is marked with a black, and the flats of the Heerdes with a red buoy. For the greater security of the inland navigation, it is to be observed, that on the, so called, Katzhaken, at the entrance of the Passarge, there is a black buoy; and on the Leissuhns Stones a buoy fixed on a stake; both of which, in sailing from Pillau into the Passarges are to be passed on the left side.

Steam Passages to India by the Cape.

We have recorded the progress of steam round the Cape in its earliest stages, when it was matter of speculation what kind of voyages would be made; and we have heard of companies being formed, for the purpose of establishing a line of vessels to brave the dangers of the *Cabo Tormentoso*, and force their way to our Indian colonies by sea, without encountering the plagues of Egypt; but we see nothing of the kind yet realised. However, it is useful to place in one view the following account of the various passages which have been made, with the discussion relating to them, as we find it in the *Bombay Times*:—

The Berenice used to be a clever sailer, but she has been so improved by the Indian Navy people that while she has become vastly more "man-of-war-like," her motions have been the very reverse of accelerated. On her last voyage from Suez she reached Bombay on the 22nd November, having taken twenty-one days down, including a delay of sixty-two hours at Aden. February is a short month, and moreover we expect that she will be late in leaving Suez as the weather is still stormy off the south coast of France; and allowing her nineteen days to come down, and assuming that she starts on the 24th, she may, as above stated, be looked for on Sunday or Monday next.

The Enterprise steamer is, we observe, expected round here very shortly with treasure from Calcutta. This is not the vessel which originally bore that name and served with such distinction in the Burmese war, but a namesake of hers built at Calcutta, and launched in 1839. She measures 470 tons, and carries engines of 120-horse power. The

Calcutta papers seem to expect that the Enterprise will be here before the departure of the Overland of the 1st April, and if this be so, we presume she will bring with her a host of passengers for the Red Sea steamer. The Cleopatra's new fittings-up are nearly completed, and are extremely convenient indeed, affording cabin accommodation for no fewer than twenty-eight first class passengers. We understand, however, that her berths are already mostly engaged, so that should an influx of Bengallees make their appearance with the Enterprise, those who defer bespeaking their places are very likely to experience disappointment.

The India steamer, which left England on the 4th October, arrived at Calcutta on the 19th February, having been thus 137 days on her passage. Of these she was 100 under steam or sail, and thirty-seven in port at the various coaling stations at which she required to stop. The India is 1200 tons burthen, and is thus a fourth larger than any steamer which ever came out to India by the Cape—the Sesostris being 860, and the Semiramis, the next to the Sesostris in magnitude, being only 733 tons. The engines of the India which are 325-horse power, do not exceed those of the other steamers in the same ratio as her burthen. The engines of the Semiramis, which came here in 1837, were 300, and those of the Zenobia (684 tons) 280-horse power. The India has made the most tedious steam passage of any on record except the Nemesis which lately went to China; having been eighteen days longer in her voyage, and ten days longer under weigh than any steamer from the time the Enterprise rounded the Cape in 1825. The Cleopatra sailed out all the way, and so we rather think did the Zenobia:—these appear as if exceptions in the table. The speed of the India seems to have been considerably under seven miles an hour; whereas few of the others given in the subjoined table have fallen behind eight and a half. Her consumption of coals, as might have been under these circumstances expected, is extremely low; ranging not much over six pounds per horse power per hour, the average in general being ten pounds. This is a common occurrence and easily accounted for—the quantity of fuel required for propulsion decreasing in a much more rapid ratio than the rate of speed. If a steamer passing through the water at ten knots an hour consume ten pounds per horse power, should her speed be let down one-fourth under this, that is to seven and a half knots, her consumption of fuel will probably fall to near a half, or five pounds per hour. As the resistance of the water, and consequently the power required to overcome it, encreases as the square of the velocity of the vessel passing through it, so of course at the same rate must the wastage of the fuel required to generate the power which originates the motion be decreased. It is in cases of high rates of speed that an extravagant expenditure of coal is required. The following table has been somewhat carefully compiled to show the time occupied in the voyages to India of nine several steamers which have rounded the Cape since 1825. It is much less complete than we could have desired, as the documents are not so accessible as we expected to have found them, but we believe it may be pretty closely depended on so far as it extends:—

Table shewing the time occupied under steam, under sail or in coaling, and the sums of the three in the various voyages performed from England to India by steamers round the Cape, from 1825 to 1841,—together with the dates of their arrival and departure.

Name.	Size.		Left England.		Teneriffe		Cape de Verds.		Fernando Po.		Cape.		Mauritius		Ceylon.		Cochin.		Bombay.		Calcutta.		Steaming.	Sailing.	Stopped.	Total.
	Ton.	Pow	Year.	Month	Ad.	Dd.	Ad.	Dd.	Ad.	Dd.	Ad.	Dd.	Ad.	Dd.	Ad.	Dd.	Ad.	Dd.	Ad.	Dd.	Ad.	Dd.				
Enterprise	450	120	1825	Aug 19	"	"	"	"	"	"	Oct 13	22	"	"	"	"	"	"	"	"	De 9	"	"	"	"	145
Atalanta	616	210	1836	Dec 29	Ja 6	12	16	21	Fe 1	Fe 5	19	Mar 1	M16	26	"	"	apr7	10	13	"	"	"	68	"	38	106
Berenice	664	230	1837	Mar 17	25	"	"	"	A.14	20	May 4	11	24	30	"	"	"	Jun	13	"	"	"	63	"	25	88
Semiramis	733	300	1838	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Zenobia*	684	280	1839	Mar. 6	"	"	22	27	"	"	May 30	June 6	22	29	"	"	"	"	jy 14	"	"	"	"	"	"	130
Cleopatra†	769	220	1839	Nov 22	"	"	"	"	"	"	"	"	"	"	"	"	"	"	ap30	"	"	"	"	129	31	160
Sesostris	860	220	1840	Feb 17	"	"	"	"	"	"	"	Apr 30	"	"	Ju 6	8	"	"	16	"	"	"	"	"	"	119
Nemesis‖	650	120	1840	Mar 28	Ap 4	"	"	"	"	"	July 1	Dec 11	"	"	oc15		"	"	"	"	"	"	"	"	"	00
India	1200	325	1840	Oct 5	"	"	18	26	"	"	Nov 30	Dec 15	"	"	ja 30	Fe 3	"	"	"	19	"	54	46	37	237	

* The Zenobia sailed from Cork. After leaving St. Vincents she anchored on the 20th of April at a village on the African coast to procure wood and water—remaining there five days, leaving on the 25th April Having steamed two days or her course towards the Cape of Good Hope, and finding the wood obtained would not burn, bore up on the 27th April for St. Helena, under sail—where she arrived on the 7th May, remained eleven days—left on the 18th May, arrived at the Cape under steam on the 30th May, left Cape of Good Hope on the 6th June, arrived at the Mauritius on the 22nd June, left on the 29th, and arrived at Bombay on the 14th July.

† The Cleopatra sailed the whole way out—her engines were up, but the wheels and funnel were not.—December 3rd, carried away the fore-mast, and put into Lisbon December 10th, where she remained until the 10th January, arriving at Bombay on the 30th April,—having been 129 days under sail, viz. eighteen to, and 119 from Lisbon; and thirty-one days detained at Lisbon, making in all 160 days from England.

‖ The Nemesis proceeded from Colombo on to China, where she arrived November 27th—having been hove down in the Straits of Malacca. She encountered numerous delays besides those noticed in the table. She took 194 days from England to Ceylon, and six days have been added to this as her hypothetical voyage to Bombay.

Chinese Intelligence.

From the London Gazette.

Admiralty, May 6.—Despatches were this day received at this office from Commodore Sir J. J. G. Bremer, C.B., addressed to R. More O'Ferrall, Esq., of which the following are copies or extracts :—

Wellesley, close off Anunghoy, January 7th, 1841.

Sir,—My last hasty despatch will have informed their Lordships that it was my intention to commence the attack on the forts of the Bocca Tigris, by the destruction of Chuenpee and Tycocktow this day. At eight o'clock this morning the Royal Marines of the squadron, the detachments of the 26th and 49th Regs., and the 37th Madras N.I., and Bengal Volunteers, were landed, accompanied by the detachment of Rl. Artillery, with one 24-pound howitzer, and one 6-pounder field guns, together with a division of seamen belonging to the *Wellesley*, *Blenheim*, and *Melville*, in all about fourteen hundred men; the land forces, under the command of Maj. Pratt, of the 26th Cameronians, copy of whose report (which I enclose) will explain the detail of Military operations, which were admirably executed.

The *Queen* and *Nemesis* steamers were placed in position for throwing shells into the upper fort by Commander Belcher, of the *Sulphur*, and soon made an impression; a division of ships, consisting of *Calliope*, *Hyacinth*, and *Larne*, under Captain Herbert, attacked the lower fort on the sea face, and in less than an hour silenced the guns, although a number of troops remained within the walls; by ten o'clock the troops had advanced, and carried the entrenchments with their field batteries; Major Pratt himself, and two or three marines, were in possession of the upper fort, and the British colours hoisted; the lowest fort was speedily surrounded and stormed by the entrance as well as the wall, by a party of Rl. Marines, and the union jack displayed on the ramparts. The management of Tycocktow I entrusted to Capt. Scott, of H.M.S. *Samarang*, accompanied by the *Druid*, *Modeste*, and *Columbine*, and in one hour it was silenced; but the Chinese remained in it until it was stormed by the boats, in which operation Lieut. Bower, Senior of *Samarang*, was severely wounded; the guns in all the forts have been destroyed, the magazines blown up, and the barracks and houses burnt; eleven large war-junks were anchored in the shoal water, to the eastward of the position; the *Nemesis*, under Commander Belcher, accompanied by Lieut. Kellett, of the *Starling*, attacked them in admirable style, assisted by the boats of the *Calliope*, under Lieut, Watson, senior, of that ship; they were all set on fire and blown up, one with all the crew on board, a rocket having gone into her magazine; this ended the operations of the day.

It is now my pleasing duty to express my high admiration of the gallantry and zeal which animated every officer and man in the force. My best thanks are due to Captains Sir F. Senhouse and the Hon. R. S. Dundas, of the *Blenheim* and *Melville*, and from Capt. Maitland I received his usual valuable assistance; Capts. Herbert and Scott carried their divisions into action with their accustomed gallantry, and they were ably supported by Captains Smith and Blake, and Commanders Warren, Eyres, and Clarke under their immediate orders. The Commanders Pritchard, Puget, and Fletcher, of the *Blenheim*, *Melville*, and *Wellesley*, the Commanders of the steam-vessels, and every officer and man employed, deserve the highest praise for their zealous exertions on every point. Major Pratt, of the 26th, conducted the operations on shore in the most able and gallant manner: he speaks in the highest terms of the conduct of every officer and man employed.

I am most happy in being enabled to inform their lordships that this service has been performed with trifling loss on the part of Her Majesty's forces, although it is justice to the Chinese to say, that they have defended themselves, especially in the batteries, with the greatest credit and devotion; they have suffered severely, their loss, including that on board the war-junks, cannot be estimated at less than from five to six hundred, out of a force calculated at two thousand men. The slaughter in the lower fort, when carried by storm, was considerable.—I have, &c.

(Signed) J. J. Gordon Bremer,
Commodore of the First Class, Commander in Chief.

To R. More O'Ferrall, Esq. M.P. Admiralty.

Wellesley, off Anunghoy, Jan. 9th, 1841.

SIR,—In continuation of the detail of operations, I have the honour to acquaint you, for the information of the Lords Commissioners of the Admiralty, that yesterday morning I moved forward towards the forts of Wantong and Anunghoy. A Chinese, a civilian, had been saved from drowning by the *Louisa* cutter, and I liberated him, sending by his hands a letter to the Admiral, in which I explained the usages of war amongst Europeans with regard to the flags of truce, sparing the lives of the prisoners and of an enemy yielding, and that the striking of flags signified submission, and always led to a cessation of hostility by surrender; and also that I had yesterday liberated upwards of one hundred prisoners who had laid down their arms. The plan of attack was laid, and would have commenced seriously in a few moments, when I was surprised to see the flags and banners of the forts hauled down, and a boat with a flag of truce coming out; it contained a letter from the Admiral, requesting a suspension of hostilities until a communication could be made to the Imperial Commissioner at Canton. On consulting with her Majesty's plenipotentiary, we were of opinion that it would be advisable to comply with this request, in the sincere hope that negociations would prevent a further conflict. Three days have, therefore, been given for this purpose.

The plenipotentiary renewed the offer of terms, which he has forwarded to her Majesty's government, and it will be a source of infinite gratification to me to find they are accepted. I have, &c.

(Signed) J. J. GORDON BREMER,
Commodore of the First Class, Commander-in-Chief.

To R. More O'Ferrall, Esq., M.P., Admiralty.

ADMIRALTY, May 12, 1841.—Despatches were yesterday received at this office from Commodore Sir J. J. G. Bremer, C.B., addressed to R. More O'Ferrall, Esq., of which the following are copies :—

H.M.S. Wellesley, off Anunghoy, Jan. 18, 1841.

SIR,—I have the honour to forward, for their Lordships' information, a copy of an amended return of ordnance captured on the 7th inst. at Chuenpee and Tycocktow, by which they will perceive that two eight-and-a-half inch howitzers were taken they are nearly like the new pattern eight-inch howitzer now in use in our Service. The examination of the intrenchments and field batteries, in front of the position of Chuenpee, has caused me much surprise; they display considerable science, and are so formidable, that they must have cost us many men to carry, if the Chinese had not been forced from them by shells, with which they are perfectly unacquainted.

I beg to acquaint their Lordships, that Lieut. Bingham, senior, of *Modeste*, received a most severe and painful wound (fracture of the leg, in blowing up the fort of Tycocktow) which will cause his loss to the Service for some time. Mr. Arthur Vyner, Mate of the *Blenheim*, is also suffering much, but is not in any danger, he was blown up by the springing of one of the enemy's mines. I beg to recommend these Officers and Lieutenant Watson, senior of *Calliope* (who was employed in that ship's boats), and Lieutenant Harrison and Mr. Edwards, Mate of the *Larne* (employed in her boats in the destruction of the junks), to their Lordships' notice.

I avail myself of this occasion to express my hope that their Lordships may be pleased to bestow some mark of their favour on Captain Ellis, RI Marines, of this ship; this meritorious old Officer was in Sir R. Calder's action at Trafalgar, in the *Potomac*, and in many other brilliant affairs. The order which he established in the Battalion of Royal Marines, and the gallantry with which he led the advance of the force on the 7th, were such as to entitle him to my thanks and admiration, and I venture to recommend him to their Lordships accordingly. I have, &c.

(Signed) J. J. G. BREMER,
Commodore of the First Class, Commander-in-Chief.

To R. More O'Ferrall, Esq., M.P., Admiralty.

Amended Return of Ordnance Mounted on the Forts and Intrenchments at Chuenpee, when Stormed and Captured on the 7th January, 1841.

Upper fort, 9 iron guns; lower fort, 19 iron guns; in the intrench-

ments, 16 iron guns—total mounted, 44. Iron guns not mounted 38. Total, 82.

The guns in the forts were nearly of the same calibre as the British eighteen and twelve pounders. Those in the intrenchments, six pounders. They were all rendered unserviceable, and the carriages destroyed.

Taken by *Samarang* from the wreck of one of the junks, 2 brass eight-and-half inch howitzers; on *Tycocktow*, 25 iron guns; in the junks 82 iron and brass guns. Junks destroyed. Total, 109.

Recapitulation.—Chuenpee and its dependencies, 82; howitzers, 2; Tycocktow, 25; in the junks, 82.—Grand total, 191.

(Signed) J. Knowles, Captain, Royal Artillery.

H.M.S. Calliope, January 23rd, 1841, Macao Roads.

Sir,—The *Calliope* having been detached with the advanced squadron, the accompanying copy of a letter from Capt. Herbert did not reach me until after my last despatch was closed. I seize with infinite pleasure the first opportunity to lay it before their lordships, and to assure them, that the service therein mentioned was admirably performed, and the officer conducting it worthy of their notice.

I have, &c.

(Signed) J. J. Gordon Bremer,

Commodore First Class, Commander-in-Chief.

To R. More O'Ferrall, Esq, &c., Admiralty.

H.M.S. Calliope, Chuenpee, China, Jan. 7.

Sir,—You witnessed the manner the ships,* you did me honour to place under my orders, took up their position within pistol-shot of the batteries of Chuenpee, the rapidity with which they were silenced, and the union jack hoisted in the forts, and how nobly they were stormed on the land side by our gallant troops (land forces and marines). This performed, the war-junks, agreeably to your orders, were my next object; and I directed the steamers, assisted by the boats of the ships under my orders, to their attack; but from the shoalness of the water, the *Nemesis* and boats could be only employed; they were efficiently conducted, and, from their fire soon caused the crews of the junks to desert them, succeeded in capturing ten out of thirteen. The Admiral's junk was blown up by a rocket from the *Nemesis*, thus crippling the Naval armament of the Chinese in this quarter. This part of the force operating against the enemy was most ably and efficiently conducted by Commander Belcher, of the *Sulphur*, showing to every advantage the powerful force of this description of war steamer, combining, as she does, a commanding armament with light draft of water. He speaks in terms of high commendation of Lieutenant Kellet, of the *Starling*, conducting the *Queen* steamer, assisted by Mr. Crouch, gunnery mate of the *Wellesley*, and has expressed his high admiration of the most gallant manner in which the boats of the *Calliope* and *Larne* passed on to a very impressive attack on the war-junks to the northward of the *Nemesis*, which he found in coming up in the possession of a seaman, each as prize-masters, reflecting great credit on Lieut. Watson, of the *Calliope*, and Harrison of the *Larne*, assisted by five mates, Messrs. Daly, St. Leger, Rivers, and Egerton, of the *Calliope*, and Mr. Rowland Edwards, of the *Larne*.

From the vessels being captured in a narrow channel, and close to the villages, the ebb tide running strong, with an imperfect knowledge of the channel, Commander Belcher considered it too great a risk to wait the uncertainty of getting the junks out of the different positions in which they were taken, and gave directions for their being destroyed.

To Commanders Blake and Warren, of the *Larne* and *Hyacinth*, my best thanks are due for their co-operation, as well as to all employed on this occasion.

I have, &c.

(Signed) T. Herbert, Captain.

To Com. Sir J. J. Gordon Bremer, K.C.B., Commander-in Chief.

* *Calliope, Larne, Hyacinth*, and steamers *Queen, Madagascar, Enterprise.*

Official Account of the Action in Canton River.—General Orders.

Fort William, Secret Department, Feb. 24, 1841.

The Right Hon. the Governor-General of India having received an official communication of the destruction, on the 7th of Jan., of Chuenpee and Tycocktow, in an attack made upon those fortifications by the sea and land forces under the personal command of His Excellency Commodore Sir J. J. G. Bremer, C.B. and K.C.H., Naval Commander-in-Chief on the coast of China, is pleased to order the publication of the following official account of the action.

By order of the Right Hon. the Gov.-Gen. of India.

T. H. Maddock, Sec. to the Government of India.

At 8 o'clock this morning the Rl. Marines of the squadron, the detachments of the 26th and 49th Regs. and the 37th Madras N.I. and Bengal Volunteers, were landed, accompanied by the detachment of Royal Artillery, with one 24-pounder howitzer and two 6-pounder field guns, together with a division of seamen belonging to the *Wellesley*, the *Blenheim*, and the *Melville*, in all about 1,400 men, the land forces under the command of Major Pratt, of the 26th Cameronians, a copy of whose report will explain the details of the Military operations, which were admirably executed.

The *Queen* and *Nemesis* steamers were placed in position for throwing shells into the upper fort by Commander Belcher, of the *Sulphur*, and soon made an impression. A division of ships, consisting of the *Calliope*, the *Hyacinth*, and the *Larne*, under Capt. Herbert, attacked the lower fort on the sea face, and in less than an hour silenced the guns, although a number of troops remained within the walls; by 10 o'clock the troops had advanced, and carried the intrenchments with their field batteries; Major Pratt himself and two or three marines were in possession of the upper fort, and the British colours hoisted; the lower fort was speedily surrounded, and stormed by the entrance, as well as the wall, by a party of Rl. Marines, and the Union Jack displayed on the ramparts.

The management of Tycocktow was intrusted to Capt. Scott, of H.M.S. *Samarang*, accompanied by the *Druid*, *Modeste*, and *Columbine*, and in one hour it was silenced, but the Chinese remained in it until it was stormed by the boats, in which operation Lieutenant Bowers, senior, of the *Samarang*, was severely wounded; the guns in all the forts have been destroyed, the magazines blown up, and the barracks and houses burnt; 11 large war junks were anchored in the shoal water to the eastward of the position. The *Nemesis*, under Commander Belcher, accompanied by Lieut. Kellett, of the *Starling*, attacked them in admirable style, assisted by the boats of the *Calliope*, under Lieutenant Watson, senior of that ship. They were all set on fire and blown up; one with all the crew on board, a rocket having gone into her magazine. This ended the operations of the day.

His Excellency the Naval Commander-in-Chief expresses his high admiration of the gallantry and zeal which animated every officer and

man in the force, returns his thanks to the Captains Sir H. Fleming Senhouse, of the *Blenheim*, and the Hon. R. I. Dundas, of the *Melville*, and Capt. Maitland, of the *Wellesley*. Captains Herbert and Scott carried their divisons into action with their accustomed gallantry, and they were ably seconded by Captains Smith and Blake, and Commanders Warren, Eyres, and Clarke, under their immediate orders. The Commanders Pritchard, Paget, and Fletcher, of the *Blenheim*, *Melville*, and *Wellesley*, the Commanders of the steam-vessels, and every officer and man employed, deserve the highest praise for their zealous exertions on every point. Major Pratt, of the 26th, conducted the operations on shore in the most able and gallant manner: he speaks in the highest terms of the conduct of every officer and man employed.

This service has been performed with trifling loss on the part of Her Majesty's forces, although it is but justice to the Chinese to say that they defended themselves, especially in the batteries, with the greatest credit and devotion; they have suffered severely; their loss, including that on board the war junks, cannot be estimated at less than from 500 to 600, out of a force calculated at 2,000 men. The slaughter in the lower fort, when carried by storm, was considerable.

H. M. S. Wellesley, Chuenpee, Jan. 8, 1841.

Sir,—I have the honour to report to you, that the troops under my command, consisting of a detachment of Rl. Artillery, having one 24-pounder howitzer, and two 6-pounder field guns, aided by a party of seamen from H.M.S. *Wellesley*, *Blenheim*, and *Melville*, detachments of the 26th and 49th Regs., a battalion of Royal Marines, the 37th Madras N. I., and a detachment of Bengal Volunteers, in all 1,400 men, landed yesterday at nine o'clock, two miles below Chuenpee Point, for the purpose of capturing the several forts and batteries on Chuenpee.

The troops landed without opposition, and having formed them, I sent forward an advance of two companies of Rl. Marines under Capt. Ellis; the guns were then moved on, supported by the detachments of the 26th and 49th Regs., followed in column by the Marine Batt., the 37th N.I., and the Bengal Volunteers.

After advancing a mile and a half, on reaching the ridge of hill we came in sight of the upper fort, and of a very strong intrenchment, having a deep ditch outside, and a breastwork round it, which was prolonged upwards, connecting it with the upper fort; it was also flanked by field batteries, having deep trenches in rear of the guns for the purpose of shelter. The whole was strongly lined with Chinese soldiers, who immediately on seeing us cheered, waved their flags in defiance, and opened a fire from their batteries; our guns were promptly placed on the crest of the ridge, and commenced firing; this was duly returned by the Chinese for about twenty minutes, and indeed in this, as well as our encounters with them, it is but justice to say they behaved with courage. During this time the advance crossed the shoulder of the hill to the right, driving before them the Chinese who had lined it in considerable numbers; then, descending the valley, took possession of a field battery placed there. I had previously ordered two companies of the 37th N.I., under Captains Bedingfield and Wardroper, to scour round a hill to the right of the advance, where they encountered the Chinese in some force, and drove them away with much loss. Captain Duff, commanding the corps, speaks highly of the conduct of these companies, which he had supported by another under Lieut. Hadfield.

Seeing that the fire from our guns was causing the Chinese to fly from the intrenchment and batteries, I took and moved the column down the slope, causing the two leading companies of Marines, under Capt. Whitcomb, to clear the wooded hill in front, and took a subdivision of them, got into the intrenchment, and proceeded up inside the breastwork to the upper fort, in which there were still a number of men; these were speedily dislodged by the two marines who first reached it; the fort was entered, and the British ensign was hoisted by a Royal Marine.

The lower fort, which had sixteen guns facing the sea, and was surrounded by a high wall, and a small battery between, was, from this, completely exposed; but the fire of these, as well as of the upper fort, had been silenced by the ships attacking on the sea face. They were still in considerable numbers in the lower part of the fort, and had locked the gate; a fire was therefore kept up from the hill, and the advance coming round the lower side of the gate, forced it by musquetry. On entering they met with considerable resistance, which was speedily subdued; some men then entering an embrasure on the flank, the fort was taken, and our flag hoisted.

The whole of the forts and batteries being now in our possession, we proceeded to render the guns unserviceable, and dismantle the fort, setting their encampments on fire, and on re-embarking the magazine in the lower fort was blown up.

I am happy to say that the loss on our side has been small, and would have been less, but for the explosion of an extensive magazine in the fort after the capture. The Chinese, however, suffered severely; between 300 and 400 were killed and wounded, including amongst the killed the Heptae, an officer with rank equivalent to our Brigadier-General. About 100 prisoners were taken, who were released at the close of the day.

I have great pleasure in stating to your Excellency the admirable manner in which the whole force behaved, and I beg to recommend to your notice Major Johnson, of the 26th Reg., commanding a detachment of the 26th and 19th Regs. I must particularly mention Capt. Ellis, commanding the Marine Battallion, an old and previouly distinguished officer, who conducted the advance during the whole day with the greatest gallantry and judgment, and he speaks in the highest terms of the men forming the advance. Capt. Knowles,, R.A., who placed his guns admirably and dismantled the forts after their capture; Capt. Duff, commanding the 37th N.I.; and Capt. Bolton, commanding the detachment of Bengal Volunteers. From Lieut. Stransham, Adjutant of the Royal Marines, who acted as Brigade-Major, I received most valuable assistance during the day, and gladly availed myself of the services of your Military Secretary, Lieut. Stewart Mackenzie, 90th Reg., who volunteered to act on my Staff, and took charge of a party of skirmishers of the advance the better part of the day.

Lieut. Wilson, H.M.S. *Blenheim*, commanded the seamen, and the guns were dragged forward in good style, and the disembarkation and re-embarkation of the troops were ably managed by Lieut. Symons, of H.M.S. *Wellesley*.

I enclose the list of guns captured and destroyed, and also the return of casualties. I have, &c., J. L. Pratt,

Major, 26th Cameronians, commanding the Force.

List of Casualties in the Force employed at the Assault and Capture of the Forts and Batteries on Chuenpee, on 7th Jan. 1841.

Wounded.—Sec. Lieut. White, Rl. Marines, slightly; Assist.-Surg. M'Pherson, 8th Madras Light Cavalry, burnt by explosion; Mr. Arthur Vyner, Mate R.N. (H.M.S. *Blenheim)*, severely. Rl. Artillery—1 Gunner and Driver, slightly. Rl. Marines—2 Serjeants, 7 Privates severely. 18th Rl. Irish—2 Privates slightly. 37th Madras, N.I.—2 Privates slightly; 2 Havildars, 1 Naique, 10 Privates severely. Total 30.

A. B. Stransham, Acting Brigade-Major.

Calliope	. .	1 Seaman, severely
Samarang	. .	Lieutenant Bowers, severely.
		1 Boy 1st Class, severely.
Hyacinth	. .	2 Seamen severely.
		3 Seamen, slightly.
Total	. .	8

Grand Total Wounded, 38.

H.M.S. Blenheim, off the Bocca Tigris, Jan. 8th, 1841.

Return of Ordnance mounted in the Fort and Intrenchments at Chuenpee when Stormed and Captured on the 7th Jan., 1841:—In the Upper Fort—Guns, iron, 2; Lower Fort—Guns, iron, 19; In the Intrenchments—Guns, iron, 15; Guns, iron, not mounted, 23. Total, 66.

The guns in the forts were nearly of the same calibre as the British 18 and 12-pounders. Those in the intrenchments 6-pounders. The guns were all rendered unserviceable, and the carriages destroyed.

J. KNOWLES, Capt. com. Rl. Art.

On Tycocktow 25

These guns were of the same calibre as those on Chuenpee, also rendered unserviceable.

In the junks about 82, from 12 to 4-pounders.

RECAPITULATION.

On Chuenpee and its dependencies . .	66
On Tycocktow	25
In the junks	82
Grand total	173

H.M.S. Samarang, Canton River, Jan. 8th, 1841.

SIR,—In obedience to your instruction of yesterday, I proceeded with the ships placed under my orders off Tycocktow. The fort commenced its fire upon us at twenty minutes past ten o'clock, which I did not reply to until I took up my anchorage, ten minutes after, abreast of it, about 200 yards distance, which was as near as the depth of water would permit of our approach. The *Modeste*, *Druid*, and *Columbine* anchored in succession, and in a few minutes so destructive and well-directed was the fire of the ships, that that of the enemy was silenced, with the exception of an occasional gun or two. At twenty minutes after eleven A.M., observing that we had effected a practicable breach in the southern end of the fort, I directed the boats manned and armed to proceed to storm it. Lieut. Bowers (first of this ship) immediately landed, supported by the boats of the *Modeste*; those of the *Druid* and *Columbine*, under the command of Lieut. Goldsmith (first of that ship), proceeded to the north end.

An attempt at resistance was made by the enemy at the breach against Lieut. Bowers and his party, but was instantly overcome by the gallant and determined rush onwards of our men, which so appalled the garrison, that they instantly made a hasty retreat over the hill-wall, leaving us masters of the fort.

The guns, amounting to twenty-five longs, of different calibre, were then spiked, the trunnions knocked off, a shot wrapped round with wet canvas driven hard home in each, and they were then thrown into the sea, their carriages burnt, as well as the whole of the buildings and magazines blown up, previous to which latter operation all the wounded of the enemy were carried away clear of the fort; their loss, judging from the number of killed, lying in every direction, must have been most severe.

My best thanks are due to Capt. Smith, and Commanders Eyres and Clarke, for the efficient and able support they have afforded me. It is impossible to say too much in favour of all those under my command—their conduct merits my warmest approbation. Of Lieut. Bowers (first of this ship) I cannot speak too highly. In the attack of the breach he received a severe sabre wound across the knee, which I fear will deprive me for some time of his services. I beg leave to recommend him most strongly to your favourable consideration, as well as Mr. Luard, Mate; he behaved most gallantly in the breach. The zealous conduct of this promising young officer has repeatedly drawn forth my commendations.

Our damages are very trifling, being merely some of the standing rigging cut away, and a shot through our hull, the fire of the enemy passing all over us. Enclosed I beg leave to return a list of the wounded on board the *Samarang*.

I have, &c., JAMES SCOTT, Captain.

To Commodore Sir J. J. Brenton, &c. &c.

The following is an Extract of a Letter from a Naval Officer, who took an active part in the attack on the Bogue Forts.

Tong-Koo Bay, Jan. 22nd 1841.

On the 7th instant the Chinese received a blow which they will long remember. Captain Elliott delayed it as long as he could, but finding there was no hope of settling the matter amicably, he turned it over to the Commodore. Our gallant leader then sent certain proposals to the Chinese, with an assurance that he would wait a reasonable time (48 hours) for an answer; and if they did not then comply with his terms, he would commence hostile operations. The time expired, and no answer had arrived, therefore every thing being ready, the troops and marines were landed about a mile below Chuenpee, at 10 A.M. *Calliope*, *Larne*, and *Hyacinth* were to cannonade the fort while the troops were moving up to it; but the military were so expeditious, that of the three ships, only the latter got into action for a few minutes; the former fired a few shot as she stood in to take up her position, and *Larne* reserved hers for a future occasion. The fort on the point has been rebuilt, and mounted 15 guns; there was a small battery above it of 4 guns, and another of 15 on the summit of the hill; they were all very loth to fire. There were besides two stockades at the back of the fort, and several redoubts and guns in every direction.

Hyacinth managed admirably, she had several pieces of rigging shot away just above her hammocks. There were 1000 men in the forts, &c. on shore, and only 200 are said to have been mustered afterwards: it is supposed 500 were killed, the place was strewn with the killed. No enemy was to be seen till our artillery had ascended a commanding hill, and the place was ours in less than an hour from the time of advancing, without a man being killed, and but very few wounded. A Marine of the *Wellesley* was shot through his breastplate, and is likely to recover.

Captain Herbert (of *Calliope*) now passing in his gig to the *Madagascar* steamer, ordered the boats to be got ready to pursue the junks. Our pinnace carrying a 12-pounder carronade, was accordingly manned, and, supposing by the men getting into the *Calliope's* boats that they were going immediately, she left the ship, with Lieut. Harrison in command, assisted by Mr. Rowland Edwards (Mate). *Calliope's* men were called out again, and went to dinner. At this time the *Nemesis* (an Iron Steamer, mounting two 32-pounders, with a rocket gun besides) was engaged with several junks, lying to the right of a small island, half a mile in circumference. The junks were retreating up as fast as a light beating wind would allow them. The *Madagascar* was to the left, firing at the distant fugitives, unable to chase, being aground. The *Larne's* pinnace passed her, and pulled into the reach, several junks and boats with troops firing at her. Reserving her fire till within 6 or 700 yards, she then commenced yawing right or left for the best object. Off the inner end of the afore-mentioned island lay a junk aground; a few rounds silenced and drove the crew out of her. As the pinnace advanced, the men of three others deserted them successively, two of the vessels were run aground. The antagonist of the *Nemesis* opened on the pinnace also, the surrounding land had hidden every friendly vessel from her view, so she returned to the junk first captured, and from her stern tried the effects of musquetry on the enemy, but they having great guns, and a raking position, moreover as they struck the junk too often to be pleasant, the pinnace remained under cover, firing several rounds. The junks being silenced, the boats pulled in and gave them to the flames. Having been taken in tow by the *Nemesis*, they were run up a mile or two, much to the astonishment of the natives. Five junks escaped, but ten were burnt. These junks mount from 7 to 11 guns of various calibre, from 3 to 12 pounders, and are full of men, carrying generally from 50 to 100. The success of the boats may be attributed to a panic excited by the explosion of a junk, caused by a rocket thrown from the *Nemesis* while they were pulling in.

While Chuenpee Fort was thus changing owners, the *Samarang*, *Druid*, *Modeste*, and *Columbine*, were knocking down that of Tycocktow, on the opposite side of the river. The Chinese fired at intervals for an hour and a half. We found out afterwards that they have pits in the rear of their guns, into which they retire, and nothing but splinters can touch them. As many as 200 were in the pits, with 20 killed. They would have run sooner but were safe in the pits, until the seamen landed, when they were off quick enough. There were 100 prisoners

taken in Chuenpee. These men were immediately released, and, by one of them, Captain Elliott sent word to the Admiral, that if the other forts would strike their colours on the morrow our firing would cease. Accordingly, when the steamer commenced shelling and the rocket-boat went to work, the *Blenheim* just coming into range, *Wellesley* and *Melville* following, the small ships dropping up with the troops on board ready to land them; down went the banners, and off came a boat, rowed by two old women, with an old man bearing a chop (letter). The *Wellesley* hoisted a flag of truce, and the signal "not to engage the enemy." Every one seemed dissatisfied at this, as the Chinese had been playing the royal game of humbug too long. The letter was from the Admiral, asking time to communicate with Keshen (the Imperial Commissioner). He was allowed 3 days, but was told if he was seen making any more preparations (they had been working on the hills), we should commence again immediately. To this he replied, that he was quite prepared—he wished for peace, but was quite prepared for war. Keshen, it is said, wrote to Captain Elliot, reproaching him for commencing hostilities, and said he had just intended to settle all and would try to do so now, but he hardly knew what to tell the Emperor after we had killed so many of his subjects. Peace was made known yesterday to the Fleet, and all the ships left the Bogue; the Commodore fired a salute of 3 guns, which was returned by all the forts. The poor fellows must have been very glad to see us off: a boat-load deserted from South Wang Tung and came to the *Wellesley*. One of the wounded at Chuenpee, as he lay on the ground, surrounded by dead or dying, was heard by an interpreter who happened to be passing, crying out, "*This is Lin, this is Lin's work!*" It is a sad country, the poor man's earnings are not safe from the squeezing (as they call it) of the Mandarins. Several of the rafts attached to the chain across the river floated down one day, supposed to be cut adrift by some traitorous natives; none ever came down before.

The Royal Mail Steam-Packet Harbour.

As the Report of the Admiralty Commissioners upon the selection of a port for the departure of the West India mails has been called in question in both Houses of Parliament, and that report, together with all documents accompanying it, has been ordered to be laid on the table of the one house, while a select committee has been appointed by the other, it may not be amiss to call the public attention to the state of things out of which these motions have arisen, and to the report which has already been published by order of the Commons. It is very well known that the town of Falmouth has enjoyed for upwards of a century the advantages arising out of its selection as the West India Packet-station, nor was this to be wondered at under the then existing state of navigation and inland carriage, as, if there ever was anything on which England could pride itself, it surely was the style of her coach-travelling, the rapidity of which amply compensated for the distance of Falmouth from the metropolis. It was, therefore, a matter of expediency to select that port for the packet-station, which was the westernmost, and at the same time the safest and easiest of access to homeward bound vessels. The introduction, however, of steam navigation, and the rapid strides which it has made of late, imperatively demanded that the packet system should undergo a total change; and in obedience to the wants of society, the Government formed the resolution of discontinuing the sailing packets, and, taking advantage of the speculative character of the nation, they entered into a contract with a private company for the conveyance of the West India mails for ten years, in consideration of the annual sum of 240,000*l.* or thereabouts. By the terms of this contract the company bound themselves to have a fleet of twelve or more

steamers of about 1,500 tons burthen each, calculated for war as well as for peace, by which they undertook to keep open a communication twice a month between some port in England, to be afterwards named, and the West Indies. Now, it must be obvious to any one at all conversant with the expensive character of such a scheme, that the sum contracted for, though large *per se*, would by no means indemnify the company, who must mainly rely on their commercial dealings for anything like a return for the capital invested in the undertaking. We have heard accordingly, and we believe it to be the fact, that the calculated cost of working the company is five times as much as the sum to be paid by the Government, so that it follows as a matter of justice and liberality, that great consideration should be paid to the views of the company in the regulation of the details. The company accordingly, it being clear that Falmouth could not be made their station by reason of its distance from London, conceived, and most naturally, that their choice of another port would be confirmed by the authorities, so long as—to use the language of their memorial of the 7th of September, 1840, to the commissioners—"that port should combine the greatest facility for their own passengers, specie, and goods traffic, with the greatest possible convenience to the public service, in the equal and rapid delivery of the mail communications." Animated by this desire, the directors further say, in the report now before us, "that having anxiously considered the best means of reconciling the two services, they believe they do so in fixing upon Southampton."

As soon as it was known that the packet system was to be remodelled, Falmouth, Bristol, Plymouth, Dartmouth, Portsmouth, and Southampton, advanced their respective claims to be selected as the station by the commissioners appointed to inquire and report, and it is now well known that the choice has fallen upon Dartmouth—quite as much, we venture to say, to the surprise of that town as of the others—in spite of the earnest remonstrances of the company, who avowed that they would infinitely prefer Falmouth or Plymouth to Dartmouth, if they could not have Southampton. When we find the company which is so deeply interested in this matter expressing itself thus, and we hear Lord Falmouth say, that "the petitioners would have rested satisfied if Southampton had been chosen," we think we are justified in saying, that the appointment of a select committee to revise the report of the commissioners is a very proper step. In advancing this position, we do not impute anything to these functionaries beyond an erroneous exercise of the powers vested in them, and a total misapprehension of the principles upon which the inquiry should have been conducted, and we think that we can easily demonstrate these positions. They were not appointed by the Government to act solely on their behalf, but jointly on behalf of the public and of the company, whose interests were so deeply involved in the question submitted to them. Acting therefore in this double capacity, and bearing in mind the vast boon which the establishment of steam communication with the colonies would confer upon England at large, they ought not to have higgled with the directors, and entered into minute calculations whether letters landed at Dartmouth might be three hours and forty minutes sooner in Liverpool than if they were landed at Southampton. They ought to have reflected that the com-

pany undertook to land the letters in England in sixteen or seventeen days, instead of four or five weeks, and that being so, the question between one port and another was purely a matter of detail, so long as the port advocated by the company was not totally at variance with the efficiency of the public service. The commissioners, however, seemed to have proceeded as if they were representatives of the Government alone, and in that capacity, being nautical men, and inclined to prefer a place readily made by ships, they selected Dartmouth, a town with a good harbour, doubtless, but unconnected for thirty-five miles of impracticable country with any railway; the result of which selection will infallibly be, that the London letters will be in town later than they would be by Southampton, while the Liverpool letters will arrive about three hours and forty minutes sooner than they would through London. Deeply impressed with the folly of this, the company remonstrated most warmly upon the subject, and, after various communications with the commissioners, representing the superior advantage which the Southampton-docks could afford to their vessels, they availed themselves of the services of Mr. Smeaton, the eminent engineer, whose report upon the capabilities and advantages of that port was duly forwarded to the commissioners, and ought, we think, to go forth to the world in justification of the company's conduct in this affair:—

COPY of the report of John Smeaton, Esq., engineer, respecting the accommodation of steam-vessels at Southampton.

"*London, 12th September*, 1840.

"Sir.—In compliance with your instructions, I have made a survey of the Southampton river, with a view to the accommodation which may be expected for your larger class of steam-vessels, and beg to report as follows:—

"That I consider the situation of the proposed new docks extremely well adapted for any commerce which may be carried on by steam or sailing-vessels; the facilities which the Southampton river affords have been ably and correctly stated by the officers of the navy, in their evidence before a committee of the House of Commons, and the expectations expressed by them in regard to the port of Southampton appear to me to be fully borne out by the construction of the new docks now in progress.

"I have taken the plans and surveys of Mr. Giles in preference to making them myself, and have every confidence that they are executed with his established accuracy.

"The approach to the mouth of the new dock being through the river Itchen, affords the advantage of steamers getting out of the general traffic and entering the basin in quiet water; and although the channel be narrow, it can never be disadvantageous to a steam-vessel, while the current of the ebb tide from so large an estuary would tend to the keeping the deep-water channel clear of deposits of mud and silt.

"A very great advantage to the port consists in the extraordinary period of high water, which may be said to continue stationary for about two hours, thus allowing a facility for the navigation not to be met with in any other harbour in England.

"The freedom from ice in the river Itchen may also be regarded as a

great desideratum in steam navigation, as well as the steady and moderate currents of the flood and ebb tides.

"The facility of approach and departure at all times of the tide, and in every season of the year, has been already explained in the reports and the evidence of nautical men; and it appears to me that their opinions are fully warranted.

"Another important consideration with regard to the port of Southampton is the proximity to London created by the railway, and affording, by means of the telegraph now used so successfully on the Blackwall Railway, a communication for Government or others, not to be met with elsewhere.

"The entrance to the tidal basin now in progress of execution secures a quiet harbour, as it will be sheltered from any heavy sea, and peculiarly protected from the south-west winds which prevail in the south of England.

"Reference having been made to a sand bank a little below the confluence of the rivers Southampton and Itchen, I have examined it, and find that there is fully eighteen feet over it at low water of spring tides; and as there is beside a deep navigable channel, there can be no obstruction by the bank to the navigation to and from Southampton.

"The river from Southampton to the sea is considered by the most experienced sailors free from all obstruction, and capable of containing any number of vessels, with very good anchorage.

"The entrance to the Itchen may be made quite marked and distinct by the mooring of a floating light outside of the bank on which the docks are to be placed.

"I have carefully examined the river Itchen with reference to the deepening of the water to eighteen feet low water spring tides, as proposed by Mr. Giles, and am of opinion that no difficulty need be apprehended in the execution of the work, or in keeping the depth afterwards. The substance of the soil is light and easily dredged up by ballast lighters or steam dredge boats, and when once formed, I consider that the ebb tide current will carry off all the deposit from the channel.

"The deposit of mud and silt is very small in the river Itchen, on account of the purity of its supply of spring water; and the estuary is extensive, and allows a reservoir of tide water sufficient to keep clear the entrance to the docks.

"I therefore consider that the situation of the proposed docks at Southampton affords an accommodation for your steam-vessels which cannot be exceeded in England; and as there exists no difficulty in the construction of the tide basin and docks. I consider that when the works are advanced, Southampton, as a steam-boat station, will be unrivalled in England. "I am, &c.

"*Henry Longlands, Esq.*" "JOHN SMEATON."

Notwithstanding this conclusive document, the commissioners in the following month made their final report in favour of Dartmouth, under the impression no doubt that the company would adopt that place as their principal station. In assuming this, however, they would seem not to have borne in mind that vessels of such length and tonnage re-

quire accommodations of a nature expressly calculated for them, and that an old established port, where every inch of land is already appropriated, whatever quantity of sea-room there may be in the harbour, must of necessity be incapable of affording to them any accommodation which can be compared with that to be met with in a dock constructed for the especial end of their reception. Allowing, however, that such could be the case, the company would be placed at the mercy of the inhabitants of Dartmouth, who no doubt are ready enough to see the wisdom and patriotism of a report which would lead to such results. Be this as it may, the repugnance of the company to Dartmouth is such, that they have long since entered into a final arrangement with the Southampton Dock Company for the exclusive occupation of two sides of their tidal-dock, which is to cover an area of sixteen acres, together with extensive wharves, sheds, storehouses, and workshops of every description, on terms which no doubt are satisfactory to both parties, and the completion of which is guaranteed to them by the 1st of October next. In addition to this, it should be borne in mind, that the Dock Company are the owners of the fee simple of upwards of 200 acres of land, speedily convertible into yards, slips, docks, both dry and wet, coal depots, and every possible accommodation for steamers, or other vessels of the largest class, either for loading, unloading, or repairing. These, surely, are actual advantages, which no company ought to be called upon to abandon for the visionary jetties and piers which the people of Dartmouth or any other place besides, only promise to try and give them if they should come there, and which cannot, at all events, be carried into execution for some time after they will be wanted. The company therefore, being the best judges of their own interests, have chosen Southampton on account of its docks and its vicinity to London, as their home station; and if the insensible report of the commissioners should be upheld by the promised inquiry, the result will be, that they will be under the necessity of calling off Dartmouth, if they can, each trip, and of keeping a steamer or two in that port ready to transfer the bags from the post-office to their packets, and *vice versâ*. The advantages therefore which have been calculated upon by the good people of Dartmouth, in the employment of the 168 people, and the receipts of the profits which were enjoyed by Falmouth under the old system, will dwindle down to a mere shadow, while the company will be inconvenienced and perhaps injured by the proposed plan.

We cannot think, however, that the select committee, when all the facts are laid before them, can come to any such determination, in justice either to London or the company, whose efforts ought to be met with liberality by the public.—*Times*.

Simon's and Table Bays.

With reference to the subject of the advantages of these two places, on which so much difference of opinion appears to prevail, we said in our last volume, that no doubt "much remains to be told" concerning them. Accordingly, Lieut. Barrow has again come forward, with the following letter, in which some

important statements are made, and the concluding sentence of which expresses as the saying is, "multum in parvo."

One object alone we have always had, as we have already stated. Situated above all party feeling, or private interest, our object alone is the public good; and Lieut. Barrow, or any other correspondent, will be assisting us in doing service to the maritime community at large, and thereby promoting that great object by setting facts on these subjects, as they are, before our readers.—ED.

SIR.—You describe yourself in your last July number "to be always found at your post ready to assist in telling" the truth, which assertion I do not doubt. The deliberate communication of Mr. Bance stating that he has "fully" replied, "confuting," &c., leads me to the conclusion that "his tale is of imagination ALL compact."

The people here are no strangers to the "good ship *Wellington*" and Mr. Liddell. But I shall illustrate the artificial disadvantages of Simon's Bay, by modern instances. Beef which could have used its own legs for the journey has been sent here from the capital, *because* that supplied to the navy was not *good enough*. Boats and crews to transfer cargo have been sent here *round the Cape*,—those, cheap on the spot, and eagerly seeking employment, rejected!

When waggons with eight horses convey a Cooly's load, the observer of this, "et hoc genus omne" reflects

"Surely the pleasure is as great
Of being cheated as to cheat."

Mr. Liddell is under a mistake in asserting imprimis "that not a spar or even an artificer was *procurable*." There were spars and competitors for Tenders. A rage for building at that time, with the compensation money and pestilence, raised the wages of artificers extravagantly *every where*. Indiamen have been masted in Table Bay with spars purchased here!

Secondly.—That every thing had to be "transported across the heavy sandy isthmus, and that £400 additional was THEREBY INCURRED." Now the isthmus is ideal. There is an excellent turnpike road for sixteen miles from the capital, at its termination heavy spars are launched and towed by the wise. The "heavy sandy" consists of two miles of sand divided into four bays, connected by capital roads, three hours on each side of low water; the beach is a capital hard causeway, and great improvements (perhaps due to the *Nautical*) have taken place in certain patches connecting the artificial roads with the beaches.

The result of there being competitors on the spot for repairs is obvious, though Cape shipwrights very commonly get the tenders. The *General Palmer* lost her mainmast—say three tons; it was brought in a waggon. The average here for transporting a ton weight from or to the capital is *thirty shillings*. Let a conjuror "solve that with his Jacob's Staff," 400*l.* could never be thereby incurred.

The necessary colonial produce commonly required by shipping, bears the same price in both towns. Thirty shillings per ton is the legitimate tax on other articles with those modifications, which are obvious to all. The difference in all supplies, with proper circumspection is beneath notice in the liberal expenditure of the eastern trade, while they escape anxiety and the probable contingency of having to pay Mr. Bance on

the very common occurrences, £70 or £120 for transport of an extra anchor and cable, and £80 or £100 for the materials.

Mr. Liddell is charged with misleading your readers. *Proper circumspection* consists in the rejection of expensive Boards of Surveys from a rival ship, headed by Mr. Bance and travelling in coaches and six "en prince." Proper circumspection consists *personally* in advertising for tenders for repairs, affording sufficient time to the candidate to inspect the defects, and then to close with the lowest. Lastly.—Proper circumspection consists in resisting imposition by attention to current prices. A firm execution of these obvious duties would benefit the many, and is most desirable for the prosperity of the Cape generally. Butchers' advertisements requesting captains to reject middlemen and to deal directly with them at named prices, demonstrates that there is something rotten in the system.

Truth is in a minority at first, and connection will supersede minor consideration. But *if Captains were owners* and the ships *uninsured*, without doubt Simon's Bay would be more frequented for supplies and repairs.

I am &c.,

T. P. Barrow.

Experiments with Rennie's Paddles.

In our last number we stated that a preliminary trial had been made with the trapezium paddle wheels fitted to H.M. steamer African, and that the results had been very satisfactory.

We now present our readers with the results of the subsequent experiments, all of which have been attended with the same success.

The African is one of that class of ten-gun brigs which was built during the late war, she was afterwards lengthened about ten feet and converted into a steam vessel. Her build is full both fore and aft, and her midship section immersed is a semi-ellipse, of which the transverse axis is 24ft. 10in., and the conjugate axis about 10ft., her length is about 109ft. 10in. or little better than four to one of the midship breadth, which, as compared to the proportions of our modern steamers is ill calculated for speed. Accordingly with a power of 90 horses, or one-third of the tonnage, her velocity at an immersion 9ft. 4in. has rarely exceeded nine miles per hour.

In the year 1837 a series of experiments were made by Mr. Kingston, by order of the Lords of the Admiralty, under the following circumstances:—

Mean draughts of the vessel 9ft. 4½in., diameter of the paddle wheel 14ft. 7in., twelve rectangular boards in three slips, each placed in a cycloidal curve, 7ft. in length and 1ft. 9in. in width, thus presenting a total area immersed, of 65 square feet, but an effective area of 57 to 60 square feet for both wheels, while the area of the midship section of the vessel varied according to the depth of immersion, from 140 square feet to 160 square feet, or nearly in the ratio of one foot of paddle board to three feet of midship section.

The average of six experiments with and against the tide opposite the measured mile at Long Reach, gave a velocity of 9·174 miles per hour through still water. The engines made from 29 to 30 revolutions per minute, and the barometer guage indicated a vacuum in the condenser of 26$\frac{3}{4}$ inches.

Experiments made with the Trapezium Paddle Wheels.

The first trial was made on the 14th of April last. The greatest number of revolutions made by the wheel was 23½, and the speed of the vessel was 9·1 miles an hour. The extreme diameter of the wheels from point to point was 19ft. and the total immersed area of the floats was about 34 square feet, or better than one half of the surface of the rectangular floats; and a second trial was made on the 21st following, but the number of revolutions of the engines did not exceed 23, and the velocity 8$\frac{3}{4}$ miles. The third trial was made on the 1st instant, with a slight reduction of a square foot in the area of the floats, and by reefing them up 4 inches. The greatest number of revolutions made by the engines was 25½, and the greatest velocity of the vessel was 9·022 miles. A fourth experiment was made on the 8th instant, with 25 revolutions of the engine, and 8·8 miles per hour obtained; and lastly by reducing the floats to an immersed surface of 22 square feet and by reefing the floats 11in. or 22in. in all, so as to reduce the diameter of the wheels to 17 feet, the result was 27¼ revolutions, and a velocity of 9·124 miles per hour. The vacuum guage varied from 25 to 26, which is equal to the vessel's performance in the year 1837, and with from 2½ to 3 revolutions less of the engines,—(scarcely yet arrived to their full state of perfection and having only just undergone a repair), and with all the disadvantages of wide canvass, paddle boxes, and a foul bottom. Making due allowance therefore for the above contingencies, it is now fairly proved that the trapezium paddle of half the width of half the area, and half the weight, and half the cost of the common paddle wheel, will produce the same, if not a greater mechanical effect in propelling vessels through the water, but that it will in the opinion of nautical men supersede the common paddle wheel, on account of its greater simplicity and *snugness* in all sea-going vessels.

The Mercantile Marine.—*Uniform and Shipbuilding.*

Sir.—Will you favour me with the insertion in the pages of your widely extended Magazine, of two suggestions, addressed to that highly important class of persons, viz. the British shipowners, whose interests I fear are sadly neglected by the press, but for what reason I am unable to conjecture. How much more momentous are the concerns of our splendid Commercial Navy than those of methodist parsons, lawyers, doctors, &c., although I consider that an unthinking public very foolishly takes more notice of, and generally appears to take further interest in matters pertaining to these *aforesaid* lawyers, &c., than it does in those relating to the interests of the highly respectable body of shipowners.

My first suggestion is this; namely, that the proprietor of every ship

above 200 tons register, should require the master to wear a smart uniform; and also to have the mates and apprentices in plainer ones. In my opinion, the uniforms, even if not of greater cost than those worn by serjeants of marines, would set the wearers off better than the finest suit of plain clothes ever made. I should consider that the adoption of uniforms for the officers of a ship would tend to keep the crew further aloof, by the envy which this handsome dress would excite amongst the men, and from the sense of superiority which the wearers of it must feel over their meaner dressed dependents. By thus preserving the discipline of the ship, a very material advantage would be gained; without taking into consideration the enlivening appearance which the streets of our principal ports would present, if the uniform plan was generally adopted in the mercantile marine; and the increased respect which would inevitably be felt for that branch of service, and the temptation which a red coat would hold out for many aspiring youths, who at present are obliged to enter the public service before they can have the privilege of wearing one, and by thus drawing thoroughly educated youths into the merchant service, a superior class of shipmasters would arise. This would be a second advantage by adopting my suggestion. I would have the coat made like those worn by officers when not in full dress, and should give red the preference over blue, considering the former colour the handsomest, and that the using of it would make a distinction between the officers of the royal navy, and the servants of the shipowners. Should I ever possess a ship of the size before mentioned, (*very* possibly I *shall* before many years are past,) and not alter my mind in the mean time, which I think I shall not, for the idea first presented itself in a very striking manner to my youthful mind about two years since. When in the city of Litchfield, I happened to be reading in Lord Londonderry's Tour to the Northern Courts of Europe, an account of the vast number of persons who are to be seen in the streets at Petersburgh in uniform, and since that time the impression has never for a moment been effaced from my mind: I certainly will practice the doctrine which I preach, whether anybody else does so or not. But should it happen that any person makes use of the hint here given, I hope he will award to me the honour of having first publicly proposed the adoption of uniforms for the commercial marine.

The second suggestion is not to employ a master who is not thoroughly competent to superintend the repairs of a ship, without trusting or relying upon any one else. If all masters understood this as they should do, the repairs would very often be done in a manner which would give the owner greater satisfaction, and save his pocket more than is frequently the case: a knowledge on the part of the master of what were *really requisite* to be done, would be a great check on any dishonest shipbuilder. If all the British shipmasters were as clever as Mr. James Duncan, of the Triton, of Dundee, a friend of mine, I am sure they would give their owners greater satisfaction than they now do. Mr. Duncan was brought up a shipbuilder, and at an early age entered the Isis man-of-war, in the carpentering department, I believe, in which frigate he remained nine years; after that, along with his brother, he proceeded to Canada, and with the assistance of a few more hands they *actually built* the Triton, a schooner of 127 tons, new mea-

sure, (which they own) themselves. This is nothing very extraordinary compared with the fact, that Mr. J. Duncan has ever since been master of this ship, and three most successful years spent in the intricate and dangerous navigation of the Baltic, have fully proved his entire competence for this responsible post. This instance shows what industry and perseverence can accomplish, and presents the rare instance of a case in which one individual thoroughly understands two distinct callings: from this example we are at once led to conclude, that if a person who has been brought up a shipbuilder, can, with much energy of mind, make himself competent for the command of a ship, why cannot a person who has been educated and brought up for a shipmaster, qualify himself to thoroughly understand at least the art of repairing a ship. No doubt he might, by paying a certain sum, obtain admission into a builder's yard, till he had a general knowledge of the science of shipbuilding. Trusting that you will excuse the imperfections of this letter, and publish it as soon as convenient,

I am, &c.

Hull, 14th March, 1841. THOMAS HODGSON.

[The suggestions of our Correspondent are well worthy of attention. We have some doubts about salt water and red coats agreeing well together; but fully approve of the *principle*, and the good effects of such a plan generally. With regard to the master of a ship being a shipbuilder, no one can doubt for a moment the importance of such a measure. The Prussian government already adopt the plan, as will be seen in our volume for 1838. The advantages our Correspondent has already touched on. But how much more besides this does not our own mercantile marine, that of the first maritime country in the whole world, and the most numerous commercial fleet, how much more, we say, does not this require in the way of sound wholesome regulation?—ED.]

MEMORIAL OF MRS. HEWETT.

To the Right Honourable the Lord Mayor, Aldermen, and Commons, of the City, of London, in common council assembled.

THE HUMBLE PETITION of *Alexander Watt Robe*, Major of Royal Engineers *and of the several other persons* whose names are hereunto subscribed, *in behalf of the widow and children of the late Captain Hewett, of her Majesty's ship Fairy*, foundered at sea in November last.

And also, the humble petition of *Phipps Hornby*, captain in the Royal Navy, *and of the several other persons* whose names are hereunto subscribed, *in behalf of the widows and families of the Purser, Petty Officers, Seamen, and Marines, forming the crew of the said vessel*, who all perished by the same melancholy catastrophe.

Sheweth,—That her Majesty's ship Fairy, (of which the late Captain Hewett was commander,) was engaged in the service of this country, more particularly in surveying the coasts of these Kingdoms, and the north and other seas surrounding the same, and in accurately laying down in charts and plans, the shoals and quicksands, and sunken rocks, which endangered the safety of ships and vessels of all descriptions.

That a great portion of Captain Hewett's valuable life, (namely, for about twenty-five years,) had been engaged in endeavouring, both on these and

foreign shores, to bring to perfection the said important surveys; and he was, moreover, of strictly unimpeachable character in life and conduct.

That in the prosecution of such honorable and laborious, but perilous calling her Majesty's ship, Fairy, was encountered by a dreadful storm off Lowestoffe, or Southwold, on the coast of Suffolk, on the 13th day of November last, when the said vessel, with its gallant and most meritorious commander and the purser, and the whole of the petty officers, seamen, and marines forming its crew, foundered, and every individual on board perished.

That the bereaved widow of the late Captain Hewett, has not only to lament the loss by that afflicting event of her most estimable and affectionate husband, but also of that of her eldest son who was a midshipman, and her brother who was master; and, at the same time, second in command on board the said ship Fairy, thus sustaining a triple loss—which can never be repaired this side the grave, but may under Providence be ameliorated by the generous sympathies of her countrymen—the British public.

That by the afore-mentioned fatal event, the widow of Captain Hewett has been left with eight children, six boys and two girls, with the limited provision hereafter referred to, and such further provision as may be derived from the sources of the naval department of the government of this country, and the spontaneous feelings of other public bodies, and of individuals comprising merchant traders and others.

That the spirit of British Philanthropy, and also that of gratitude for past services has already been manifested in behalf of the bereaved Widow and children of Captain Hewett—the Lords Commissioners of the Admiralty having been pleased to grant a pension to the widow of Captain Hewett of £100 per annum, (being £10 more per annum than the regulated provision for an officer of his rank,) and £16 pounds per annum for the benefit of each of the children until they are severally provided for; and the elder Brethren of the Trinity House, have contributed in the name of their Corporation, the sum of £100 for their benefit; and also the further sum of £100 for the like purpose, from the private fund of the Elder Brethren, [the copy extract of letter accompanying those contributions from the secretary of that Corporation is included in the printed statement appended hereto, as conveying most honorable testimony of the merits and services of the late Captain Hewett] and the Committee of Lloyd's sensible of the valuable services of the late Captain Hewett, to the maritime interests of the country, have also most liberally contributed to the like purpose.

That, by the before-mentioned calamitous event, seventeen widows, two mothers entirely dependent on their sons, and upwards of thirty children of the purser, petty officers, seamen, and marines of the said ship Fairy, have not only been bereaved of their respective husbands and fathers and sons, but have been left entirely destitute of support, except what may be derived from her Majesty's government, and the generous contributions of public bodies and of philanthropic individuals, but your petitioners, Captain Hornby and others, acting on behalf of the families of the said crew, have the pleasure to state that the appeal made on their behalf has hitherto been nobly responded to by her most gracious Majesty the Queen, who has subscribed £100; and also by her Majesty Queen Adelaide, the like munificent amount; and likewise by several public bodies and other generous contributors; and such last mentioned petitioners confidently trust, that the force of such appeal will meet with the benevolent aid of your Honorable Corporation, to ameliorate in some degree the poignancy of grief of the families of the deceased.

That the exertions and labors of the late Capt. Hewett were in the course of his most useful life, not only devoted to the surveying of the most dangerous parts of the coasts of Great Britain, but to those of various other parts of the world, for a more particular and just allusion to which a copy of Capt. Basil Hall's most powerful appeal is included in the said printed statement appended to this Petition, and to which the particular attention of Your Honorable Court, is earnestly and respectfully entreated, as in the opinion of your Petitioners, it

not only contains an unvarnished statement of affecting truth, shewing the eminent claims of the late lamented officer, Capt. Hewett, upon every branch of the maritime interests of this country, but it also conveys in more eloquent and heart-stirring language the grounds of those claims more forcibly and appropriately than your petitioners can venture to hope by any language of their own to accomplish.

That the children left by the late lamented Capt. Hewett are as follows:— 1 Frederick Stafford Hewett, aged 14 years. 2 Henry Skyring Hewett, aged 12 years. 3 James Hewett, aged 9 years. 4 Charles Hewett, aged 7 years. 5 George Babb Hewett, aged 6 years. 6 Alfred John Philip Hewett, aged 9 months. Also two girls, 7 Anne Hewett, aged 16 years, and 8 Elizabeth Hewett, aged 6 years.

That in the dreadful catastrophe in which Capt. Hewett's most useful career on earth was ended he had with him in his ill-fated ship the sum of £50 in cash, his watch, and valuable collection of instruments, all his wearing apparel, and one half of his silver plate; and the large expenses of his family prevented him from laying by a fund adequate to the respectable station which his family had filled by his laborious exertions, so that his afflicted widow upon administering to his effects will not be able to realize from that source more than from £60 to £70 per annum, for the maintenance of herself and eight children, unless they are otherwise provided for by a generous public.

That your petitioners cannot for one moment doubt from the high example which your Honourable Corporation has at all times set for the relief of the widows and orphans, of those who have fallen in the service of their country, (in cases so peculiarly calling for its generous sympathies, as those now submitted to its notice,) it will as Britons, as christians, and as men, embracing the municipal superintendance of the rights and revenues of the first Corporation in the world, and representing interests identified with its civic privileges, which have ever supported the honour and welfare of her Majesty's fleets and armies, extend a fostering hand for the relief not only of the widow and children of an eminently distinguished officer of the crown, and of this great commercial and maritime kingdom, (Captain Hewett;) but also for the relief of the widows and families of the Purser, Petty Officers, Seamen, and Marines, forming the crew who perished at the same time as their gallant commander. Two subscriptions having been commenced, one for those specific objects, and separate trustees, (as noticed in the printed statement,) appointed for the receipt and proper applicatioin of the sums subscribed, for the respective parties for which they are benevolently designed.

Your Petitioners therefore, most humbly pray that your Honourable Corporation will be pleased to contribute such a sum, as in your wisdom may seem meet, in aid of the fund now raising for the benefit of the widow and children of the late Captain Hewett, and also such a sum as in your like wisdom may seem meet, in aid of the fund now raising for the benefit of the widows and families of the Purser, Petty Officers, Seamen, and Marines, of her Majesty's ship Fairy, who perished by the same melancholy catastrophe before-mentioned.

And your Petitioners will ever pray, &c.

A. W. Robe, Major, Royal Engineers, Tower; M. Clarke, 6, Sussex-pl. Regent's-pk.; J. H. Pelly, Bart., Deputy Master, Trinity House; R. Drew, Elder Brother, Trinity House; J. H. Ebrington, Major of the Tower of London; Northampton, President Royal Society; J. W. Lubbock, Bart., Treas., Roy. Soc.; J. F. W. Herschel, Pres. R. Ast. Soc.; Francis Bailey, V. P. R. Ast. Soc.; G. B. Greenough, Pres., Geo. Soc.; W. M. Burton, Lieut.-Col. R. M.; G. Stacey, Tower; Gould, Dowie, & Co., Barge-yd.; Ruck, Son, & Fenwick, 19, St. Dunstan's Hill; Brougham, Grafton-st.; Chalmers, Guthrie, & Co., Idol lane, Tower-st.; Heath, Furse, & Co., 31, Old Jewry; Geddes, M. Simpson, Webster, Simpson & Scott, Tower-st.; Kembles & Trower, Mincing-lane; Quarles, Harris & Sons, 9, Billiter-sq.; N. & H. Mayo, 17, Mincing-lane; T. Saunders, 1, Queen-st.-pl.; C. W. Pasley, Col. R. Engineers; Phipps Hornby, Capt. Supdt., Woolwich Dk.-yd.; F. Beaufort, Hydrogr., Admlty, Bird Allen, Com. H.M.S. Soudan, London; J. Walker, Pres. Inst. Civil Engineers; H. R. Brandreth, Capt. R. Engineers; H. Bellenden Ker, Linc.-inn, Barrister; R. L. Murchison, late Pres. Geo Soc.; G. S. Knight, Dep. Lieut. of Bucks; C. Brodrick; F. Bullock, Capt. R.N.; W. H. Connolly, Com. R.M. Woolwich; Bloomfield, Lieut.Gen. Com. at Woolwich; H. D. Ross, Col. W. C. Gen. R. Artillery; R. Porrett, Tower; H. D. Trotter, Capt. H.M.S. V. Albert; J. Washington, Capt. R.N.; Trueman & Cook, Mincing-lane; Thompson, Hankey & Co., do.; A. Stewart & Westmoreland, Winchester House, Broad-st.; F. H. Mitchell, Hammond's-ct., Mincing-lane; H. Deffell, do. J. Wild & Sons, Martin's-lane; E. Norwich, Pres. Linn. Soc.

Promotions and Appointments.

PROMOTIONS.

The Earl of Minto has appointed W. D. Christie, Esq. his Private Secretary, in the room of Viscount Melgund.

Commander—Lord Henry Russell.

Lieutenants—W. W. Wilson, W. H. Bridge, H. S. Austen, T. Hodgkinson.

APPOINTMENTS.

Rear-Admiral—Richard Thomas to be Commander in Chief in the Pacific, Sir William Parker, K.C.B. to be Commander in Chief in the East Indies.

Captain—John Jervis Tucker (1838) to *Dublin*.

Commander—The Hon. B. C. F. P. Cary (1835) to *Bittern*, Colson Festing to *Dublin*.

Lieutenants—W. Walter Oke (1825) addl. to *Royal Sovereign* yacht, for service of the *Asp* st. v. A. Kennedy (1838) to *Acorn*. C. R. Bamber (1837) to *Indus*. G. Wodehouse (1838) to *Queen*, v. W. Tringham. D. Reid (1840) to *Monarch*. F. R. Coglan (1814) to command *Linnet*. J. Douglas (1826) to command *Lapwing*. T. S. Scriven (1822) addl. to *Victory*, for service of *Cuckoo* packet. A. La Touche (1840) add. to *Winchester*. G. J. Burslem (1838), and J. Elliott (1840) to *Dublin*. W. R. Davies, (1815) to *Niagara*. G. Williams (1831) to Land Surveying Service, Scotland. W. Tringham (1826), from *Queen* to command *Spitfire*, vice Binstead, appointment cancelled. B. Haines (1826) to *Dublin*. C. E. Tennant (1832) to *Wellesley*, as Flag Lieut. to Sir W. Parker. G. B. Dewes (acting) to *Herald*. T. H. Sasaght (act.) to *Samarang*.

Masters—C. A. Cole, to *Acorn*. W. R. Mudge to *Dublin*. W. Barrett to *Acorn*. — Avery to *Lyra*.

Mates—D. H. M'Neill to *Acorn*. C. E. Molloy (1837) and F. D. Rich to *Herald*. J. Cashman (1833) to *Alligator*. T. E. Sanders to *Caledonia*. E. W. Vansittart (1836) to *Cornwallis*. E. J. Voules (1837) to *Fair Rosamond*. R. L. Curtis to *Queen*. E. Hardy (1832), and H. Burroughs to *Indus* from *Excellent*. P. Hudson to *Caledonia*. F. S. M. Clintock (1838) to *Excellent* from *Crocodile*. J. Cashman (1838) and T. Hanson to *Cornwallis*. J. A. Paynter (1833) to *Vernon* from *Excellent*. C. K. Jackson (1839) to *Queen*. C. G. Fegan (1837) to *Monarch*.

Second Masters—John Willis to *Calcutta*. W. Wilkins to *Cornwallis*. J. M. O'Brien to *Melville* from *Blonde*, v. King, promoted to *Modeste*, James Drysdale to *Indus*. N. C. Pettigrew to *Spitfire*. Joshua Whiting (acting) to *Fair Rosamond*. F. W. Paul to *Merlin*.

Master's Assistant—W. F. Palmer to *Polyphemus*.

Midshipmen—J. N. Parish to *Indus*. J. C. Byng to *Queen*.

Volunteers 1st Class—A. Breen and W. Rowden to *Cornwallis*.

Surgeons—Peter Suther (1805) to Woolwich Dockyard. J. Prior (1807) to *William and Mary* yacht. Isaac Noot (1808) to *Royal Sovereign* yacht. James Salmon (1840) to *Medea*. John Gibson (1835) to be Superintendent of *Westmoreland* convict ship. A. Nisbet, M.D. (1815) to *Cornwallis*. J. W. Johnston, M.D. (1832) to *Dublin*. L. T. Cunningham (1840) to *Bittern*.

Assistant Surgeons—C. Ferguson to *Cornwallis*. R. Futton, M.D., to *Belleisle*. T. F. Henry to *Caledonia*. W. L. Methven, M.D., (1836) to Greenwich Hospital, v. Hopley, promoted. Henry Johnson to *Caledonia*. C. T. S. Kevern (1836) to Haslar Hospital, v. Blake, to *Cornwallis*.

Pursers—R. Halliday (1804) to be Agent and Steward of Haslar Hospital. J. Elliott (1804) to be Storekeeper and Agent Victualler at Haulbowline Island. J. Sparshott (1809) to *Dublin*. — Hooper (acting) to *Sulphur*. — Loney (acting) to *Samarang*. — Norman (acting) to *Larne*.

Chaplains—R. Thompson to *Impregnable*. J. A Borough to *Cornwallis*. H. S. Slight reappointed to *Winchester*.

Naval Instructors—A. Gerard to *Indus*. R. M. Inskip to *Impregnable*.

Clerks—W. Essell to *Cornwallis*. E. S. F. Cheesman (in charge) to *Fair Rosamond*. E. C. Davison (in charge) to *Sheerwater*. G. S. Singer, additional to *Victory*.

The following gentlemen passed for Lieutenants at the Royal Naval College on the 21st inst.:—C. K. Jackson, Mate of the *Queen*, and T. Cochran, Mate, late *Asia*.

A. Elliot, Esq., has been appointed Naval and Victualling Storekeeper at Halifax, N.S.

COAST GUARD.

Commander—A. T. Geldie (1839) to be Inspecting Commander.

Lieutenant—W. H. Lloyd (1815) to be Chief Officer.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ALBERT, (st. v.) Capt. H. D. Trotter, 12th May left Plymouth for Africa.

BELLEROPHON, 80, Capt. C. J. Austen, 11th May arrived at Plymouth from Gibraltar.

BITTERN, Com. Hon. G. B. Cazy, at Portsmouth fitting.

BONETTA, Lieut. F. W. Austen, 24th April at Portsmouth from Sheerness, and sailed for Africa.

COCKATRICE, 28th April at Portsmouth from Chatham, 12th May sailed for South America.

DEE, (st. v.) Com. J. Sherer, 10th May arrived at Portsmouth from Antigua.

DUBLIN, 50, Capt. J. J. Tucker, at Portsmouth fitting.

EDINBURGH, 72, Capt. W. Henderson, K.H. 11th May, arr. at Plymouth from Gibraltar.

IMPLACABLE, 74, Capt. E. Harvey, 12th May arrived at Plymouth from Malta.

KITE, (st. v.) Lieut.-Com. G. Snell, 31st April arrived at Portsmouth from West Indies, 1st May left for Woolwich.

MASTIFF, (s. v.) Mr. G. Thomas, 26th April arrived at Harwich from the river.

MONARCH, 84, Capt. S. Chambers, 12th May arrived at Spithead from Sheerness.

SHEARWATER, (st. v.) Com. Washington, 6th May touched at Harwich, previous to resuming the survey of the North Sea.

SOUDAN, Com. B. Allen, 19th April left Plymouth for Africa.

STAG, 46, Commodore T. B. Sulivan, 8th April arrived at Plymouth from South America, 25th May paid off.

On this occasion, officers and crew were complimented on the order she was in by Admi. Warren; and the dockyard officers have stated that no ship has paid off so well, or returned her stores in such good order at Devonport, for some time. Her men were on shore every night while paying off, and every thing went on in the most orderly manner. The gun-room officers of the Stag have presented Mr. Brown, the master, with a very handsome tea and coffee service, as a mark of their regard and esteem in which he has been held by them for upwards of four years. The articles have the following inscription on them:—"Presented to James Brown, Esq., RN., by the gunroom officers of H.M.S. Stag, as a token of their obligation and esteem."

TRINCULO, 16, Com. H. E. Coffin, 8th May arrived at Plymouth from Lisbon.

VOLAGE, 26, Capt. H. Smith, 6th May arrived at Portsmouth with flag of Rear-admiral Elliott, 21st paid off at Chatham.

WILBERFORCE, C. W. Allen, 12th May left Plymouth for Africa.

AT PORTSMOUTH—*In harbour*—Queen, Victory, Excellent, Royal George yacht, Dublin, Bittern, Fair Rosamond. *At Spithead*—Monarch, Indus, Vernon, Pelican, Nautilus.

AT Plymouth—*In harbour*—Caledonia, San Josef, Cornwallis, Acorn, Trinculo, Alert, Driver, Carron.—*In the sound*—Impregnable, Bellerophon, Implacable, Edinburgh, Belleisle.

AT DEPTFORD, Horatio, for Ascension, Troubadour for Cape.

ABROAD.

ANDROMACHE, 26, Capt. R. L. Baynes, CB., 7th March, in Simon's Bay.

APOLLO, (tr.s.) Mr. A. Karley, 27th April arr. at Gibraltar from Malta.

BEACON, (s.v.) Com. T. Graves, 26th April left Malta for Candia.

BEAGLE, (s.v.) Com. J. C. Wickham, 23rd Dec. arr. at Sydney from Adelaide, South Australia.

From the *Perth Gazette* of the middle of October.—"This surveying vessel returned to our port on the 28th ult. She anchored under Rottenest Island on the 27th, and removed into Gage's Roads on the 28th. Nothing of importance connected with the survey of the New South Wales coast has transpired, further than that the survey on the north and north-west coast of New Holland is now completed. The Beagle visited Timor, but brings no later intelligence from the east, and no account of the fate of the Pelorus, which vessel, it may be remembered, was driven on shore at Port Essington. She also touched at Shark's Bay, where an ample supply of turtle was obtained at the intervening islands. Opposite Moresby's flat-topped range a good anchorage or harbour was discovered, but open to the north-west."—*Sydney Gazette* of December 29.

BRISK, 3, Lieut.-Com. A. Kellett, 25th March left St. Helena for coast of Africa.

BRITANNIA, 120, Capt. J. Drake, 26th April arr. at Malta.

BRITOMART, 16, Com. O. Stanley, 16th Dec. at Hobart Town.

CALCUTTA, 84, Capt. Sir J. Roberts, CB., 26th April arr. at Malta.

CAMBRIDGE, 78, Capt. E. Barnard, 26th April arr. at Malta.

CLEOPATRA, 26, Capt. Wyvill, 5th Mar. left Jamaica on cruize, 10th April at Halifax, 17th sailed on cruize.

CURACOA, Cap. J. Jones, at Rio Janeiro.

17th of February, his Imperial Majesty the Emperor of Brazil, with the princesses his sisters, and all his ministers, paid a visit to H.M.S. Curacoa, Capt. Jenkin Jones, senior officer at Rio. His Majesty was received with all the honours due to his rank, the yards being manned, and royal salutes fired from the ships when he first embarked in his state barge, and on his reaching and quitting the Curacoa. He remained on board nearly two hours, exhibiting very intelligent curiosity, and visiting even the storerooms and magaziue. After leaving the Curacoa, the Emperor went on board the French and American senior officer's ships, the Alcmene and Potomac, remaining about a quarter of an hour on board each, and then landed.

DAPHNE, 18, Com. F. W. Dalling, 9th April at Smyrna.

DIDO, 18, Capt. L. Davis, 15th April left Malta.

ELECTRA, 18, Com. E. R. P. Mainwaring, 2nd Jan. at San Blas going to Valparaiso.

FAVORITE, 18, Com. Sulivan, acting, 6th December arr. at Sydney from New Zealand.

GORGON, (st.v.) Capt. W. H. Henderson, April at Alexandria.

GRIFFON, 3, Lieut.-Com. J. G. D'Urban, 13th March at Barbados.

HASTINGS, 72, Capt. J. Lawrence, CB., 8th April sailed for England from Malta.

HAZARD, 18, Com. Hon. C. G. J. Elliott, 23rd April arr. at Malta.

HYDRA, (st.v.) Com. R. Stopford, 24th April arr. at Malta.

INCONSTANT, 36, Capt. D. Pring, April at Beyrout.

IRIS, 28, Capt. H. Nurse, 4th April touched at Madeira on way to Africa, 7th sailed.

JASEUR, 16, Com. F. M. Boultbee, 14th April at Gibraltar.

LARNE, 18, Com. Kuper, (act.) 9th March arr. at Madras, 16th sailed for Ceylon.

MAGPIE, (sur. v.) Lieut.-Com. T. S. Birch, 4th April left Malta for Candia.

MEGERA, (st. v.) Lieut. Goldsmith, 6th May arr. at Gibraltar, and sailed for Barbados.

RACEHORSE, 18, Com. Hon. E. R. Davis, 3rd March left Jamaica on cruize.

RACEHORSE, 16, Com. G. Byng, 17th April left Halifax on a cruize.

REVENGE, 76, Capt. Hon. W. Waldegrave, 18th April arr. at Malta from Suda.

ROLLA, 10, Lieut.-Com. C. Hall, 15th Feb. off Princes Island.

SAPPHO, 16, Com. T. Fraser, 4th March left Jamaica for Barbados.

SCORPION, 10, Lieut.-Com. C. Gayton, 11th April arr. at Gibraltar from Carthagena, 22nd at Gibraltar.

SERINGAPATAM, 42, Capt. J. Smith, 13th March at Barbados.

SOUDAN, Com. B. Allen, 2nd April touched at Lisbon.

SOUTHAMPTON, Capt. Sir W. Hylliar, 19th Feb. arr. at Cape.

TALBOT, 26, Capt. H. J. Codrington, 20th April arr. at Malta from Corfu.

THUNDERER, 84, Capt. F. F. Berkely, 9th April arr. at Malta from Catania, 5th May sailed for Gibraltar.

VESUVIUS, (st. v.) Lieut.-Com. W. Blount, 26th April left Malta for Candia and Beyrout.

WANDERER, Com. Hon. J. Denman, 20th March left the Gambia.

WATERWITCH, 10, Lieut.-Com. H. J. Martin, 19th Feb arr. at Cape.

WINCHESTER, 50, Capt. J. Parker, 2nd April arr. at Bermuda from Jamaica.

AT MALTA, 4th May—The Princess Charlotte, 120, (bearing the flag of Admi. Sir R. Stopford, GCB., GCMG.;) the Ceylon, 6, (bearing the flag of Rear-admiral Sir J. Louis, Bart.;) the Britannia, 120, (bearing the flag of Rear-admiral Sir J. Ommanney, KCB.;) the Howe, 120; the Powerful, 86; the Benbow, 72; the Vanguard, 80; the Revenge, 78; the Calcutta, 84; the Cambridge, 78; the Rodney, 92; the Castor, 36; the Tyne, 26; and the Hazard, 18. Steam frigates—Cyclops, Hecate, Hydra, and Stromboli. Steamers—Confiance, and Locust. Steam Packets—Alecto and Acheron. French Steam Packets—Dante, Sesostris and Lycurgue.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Donnington, Berks, on the 11th May, the lady of Capt. Haynes, RN., of a son.

On the 21st April, at Wickhill-house, near Bracknell, Berks, the lady of Lieut. Francis F. D. Sewell, RN., of a daughter

At Cintra, Portugal, the lady of Capt. Sartorius, RN., of a son.

Marriages.

In India, Arthur Morris, Esq., 4th N.I., to Jane, daughter of Capt. Renwick, RN., of Honiton, Devon.

On the 15th April, at St. Thomas's, London, G. A. Falconer, Esq., Surgeon, to Isabella Sophia Leolie Macdonald, youngest daughter of the late Dr. Macdonald, RN., and grand-daughter of the late Admiral Sir John Knight, KCB.

April 26th, at Uplyme Church, Wm. Edmund, second son of Sir William T. Pole, Bart., of Shute-house, Devon, to Margaret Victoriosa, second daughter of Vice-admiral the Hon. Sir John Talbot, of Rhode-house, in the same county.

May 5th, at Brighton, Capt. S. Forward, to Harriet Eliz. Warden, eldest daughter of Capt. Warden, RN.

Capt. W. Payne, RN., of Wyke Regis, to Cecilia, only child of J. Glendining, Esq.

Lately at St. George's, H. Lyster, Esq., of Twickenham, to Harriet, daughter of Capt. Spence, RN., of Devonshire-street, Portland-place.

On 27th Jan. last, at Penang, H. Scott, Esq., of that island, to Miss Ann Waller, daughter of G. Waller, Esq , RN.

May 11th, at Witley, Surrey, by the Rev. J. Chandler, Steyning Beard, Esq., of Ovingdean, Brighton, Sussex, to Mary Ann, only daughter of Lieut. H. Hopkins, RN.

April 20, at St. Paul's, Southsea, Mr. P. Wellington, Master, RN., to Margaret, daughter of Mr. C. Maitland, Master Rigger of her Majesty's Dock-yard, at Portsmouth.

Deaths.

May 6th, at Plymouth, Admi. Sir L. W. Halsted, GCB., at an advanced age.

April 4th, at Valetta, after a few days' illness, of a disease of the heart, A. Shippard, Esq., Rear-admiral of the Blue.

May 11th, at Bath, after a long and severe illness, Jane, the beloved wife of Vice-adml. Sir R. L. Fitzgerald, KCH.

March 15th, in Marmorice Bay, Lieut.-Col. W. Baker, Royal Marines.

May 1st, at Mill-hill, West Cowes, deeply regretted, Elizabeth, widow of the late E. O. Osborne, Vice-admiral of the White, aged 72.

Feb. 28th, at Gairbraid, near Goderich, in Upper Canada, Com. R. G. Dunlop, RN. (1822.)

Lately, at Purbrook, Catherine, the beloved wife of Capt. Harrison, RN.

Lately, at Loches, in France, Capt. H. Weir, RN., CB., in his 66th year.

Lately, at Bar End, Winchester, Lieut. R. Hutchinson, RN., aged 52 years.

April 21st, at Weymouth, aged 61 yrs., after a short illness, Capt. W. Comben, Commander of her Majesty's stm. packet Cuckoo.

Lately, Mary, relict of Captain R. Williams, RN., in her 59th year.

Lately on board H.M.S. Edinburgh, of the effects of the Syrian fever, Mr. Owen, Midshipman of that ship, son of Com. Cunliffe Owen.

In Bath, in the 62d year of her age, Anne, widow of the late Capt. J. Sanders, RN., CB.

April 26th, at Ryde, Isle of Wight, aged 29, G. E. Walford, Esq , Mate in the Royal Navy, third son of R. Walford, Esq., of Woburn-place, London, and nephew of the late Rear-adml. Sir E. Berry, Bart. KCB. He was a man of strict integrity, and an excellent officer.

April 29th, at Alveston, Gloucestershire, Harry Norris, son of Wm. Norris Tonge, Esq., retired Com. in H.M. Navy.

April 25th, at Portsmouth, Com. E. Southcott, RN.

April 19th, in Portsea, after a few hours' illness, of scarlet fever, aged five years, T. T. M. Hales, second son of Mr. J. Hales, Master, RN.

April 30th, at Portsea, Elizabeth Crawford, aged 59, widow, of the late Lieut. A. Crawford, RN.

May 1st, at Malta, aged 17, Mr. C. C. King, of H.M.S. Princess Charlotte, son of the late Adml. Sir R. King, Bart.

May 5th, at Plymouth, aged 61, Elizabeth Love, relict of Capt. W. H. Douglas, RN., and eldest daughter of the late Stephen Hammick, Esq., of the Naval Hospital, Plymouth.

Lately, at Portsmouth, Mr. J. Cook, late Master of the convict ship, aged 67.

May 16th, in Norfolk Street, Strand, P. Cosgreave, Esq., Surgeon, RN.

May 22d, at Queen's Terrace, Southsea, Frederick Richard, the son of Capt. Basil Hall, RN., aged five years.

May 21st, at Fareham, suddenly, of apoplexy, Lieut. T. Hunt, RN.

May 20th, at Wickham, in the 74th year of her age, Johanna, relict of the late Capt. Pitt Burnaby Greene, RN.

May 18th, Alfred Adolphus, the infant son of Mr. G. Heather, Master, RN. aged two years and seven months.

Lately, at Camberwell, in his 48th year, Lieut. George Hales, RN.

Lately, at Gosport, Mrs. Jefferies, widow of Mr. Jefferies, Master, RN.

May 22d, at Kingston Crescent, of paralysis, Mr. Lloyd Edwards, Master, RN, aged 53 years.

METEOROLOGICAL REGISTER.

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

From the 21st of April to the 20th of May, 1841.

Month Day	Week Day	Barometer, In inches and Decimals		Fahr. Ther. In the Shade.				Wind.				Weather.	
								Quarter.		Sten.			
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P. M.
		In Dec.	In. Dec	o	o	o	o						
21	W.	29·80	29·83	45	52	39	53	NE	NE	4	5	bc	qbc
22	Th.	29·84	29·78	45	48	40	50	E	E	4	3	o	bc
23	F.	29·39	29·50	44	44	42	45	E	NW	2	4	or (1)(2)	o
24	S.	29·67	29·63	48	55	34	56	S	S	4	5	bc	qbcr 4)
25	Su.	29·66	29·69	52	55	40	56	SW	SW	3	5	b	qbcp 3)
26	M.	30·00	30·09	57	64	54	65	SW	SW	3	3	bc	bc
27	Tu.	30·10	30·14	62	71	53	72	SW	SW	2	1	b	b
28	W.	30·16	30·14	60	71	52	72	SW	SW	1	1	bcr 1)	b
29	Th.	30·11	30·13	55	69	45	70	NE	N	3	2	bcw	b
30	F.	30·17	30·17	57	74	51	65	NE	NE	2	2	bc	bc
1	S.	30·01	29·95	55	71	41	72	N	NE	2	1	b	b
2	Su.	29·68	29·69	61	59	46	67	SW	W	2	7	bc	qbcpt 3)
3	M.	29·73	29·79	47	48	46	49	NE	NE	2	2	or (1)(2)	or (3)(4)
4	Tu.	29·61	29·55	53	64	43	65	S	S	2	2	or (1	bc
5	W.	29·45	29·53	54	59	51	61	SW	SW	3	6	or (1)(2)	bcp (3)
6	Th.	29·53	29·67	56	63	49	64	SW	SW	2	5	or (1	bcm
7	F.	29·71	29·64	59	64	44	65	SW	SW	3	2	bc	bcm
8	S.	29·52	29·55	54	54	49	55	S	SW	4	5	bcr 1)	bcp (3)
9	Su.	30·03	30·11	53	60	43	63	W	W	3	2	b	bc
10	M.	30·15	30·18	58	60	49	61	SW	SW	2	2	bc	o
11	Tu.	30·05	30·05	62	68	47	69	SW	SW	2	2	bc	bc
12	W.	30·14	30·21	55	59	50	61	N	N	3	2	o	bc
13	Th.	30·35	30·35	53	63	41	64	NE	NE	2	2	bw	bc
14	F.	30·37	30·34	53	62	39	63	NE	NE	2	2	b	bcm
15	S.	30·20	30·14	58	68	42	69	SW	SW	2	2	bm	bcm
16	Su.	29·93	29·85	51	69	44	70	W	SW	4	2	bc	bc
17	M.	29·63	29·57	55	59	48	60	SW	SW	5	3	qo	bc
18	Tu.	29·56	29·58	56	59	46	64	SW	SW	3	4	bc	bc
19	W.	29·36	29·25	51	53	47	55	SW	SW	6	6	qbcp 2)	qbcp (3)
20	Th.	29·28	29·43	55	59	48	60	SW	SW	6	7	qbcp 1)	qbcp (3)

April.—Mean height of barometer = 29·827 inches; mean temperature = 46·8 degrees; depth of rain fallen 1·91.

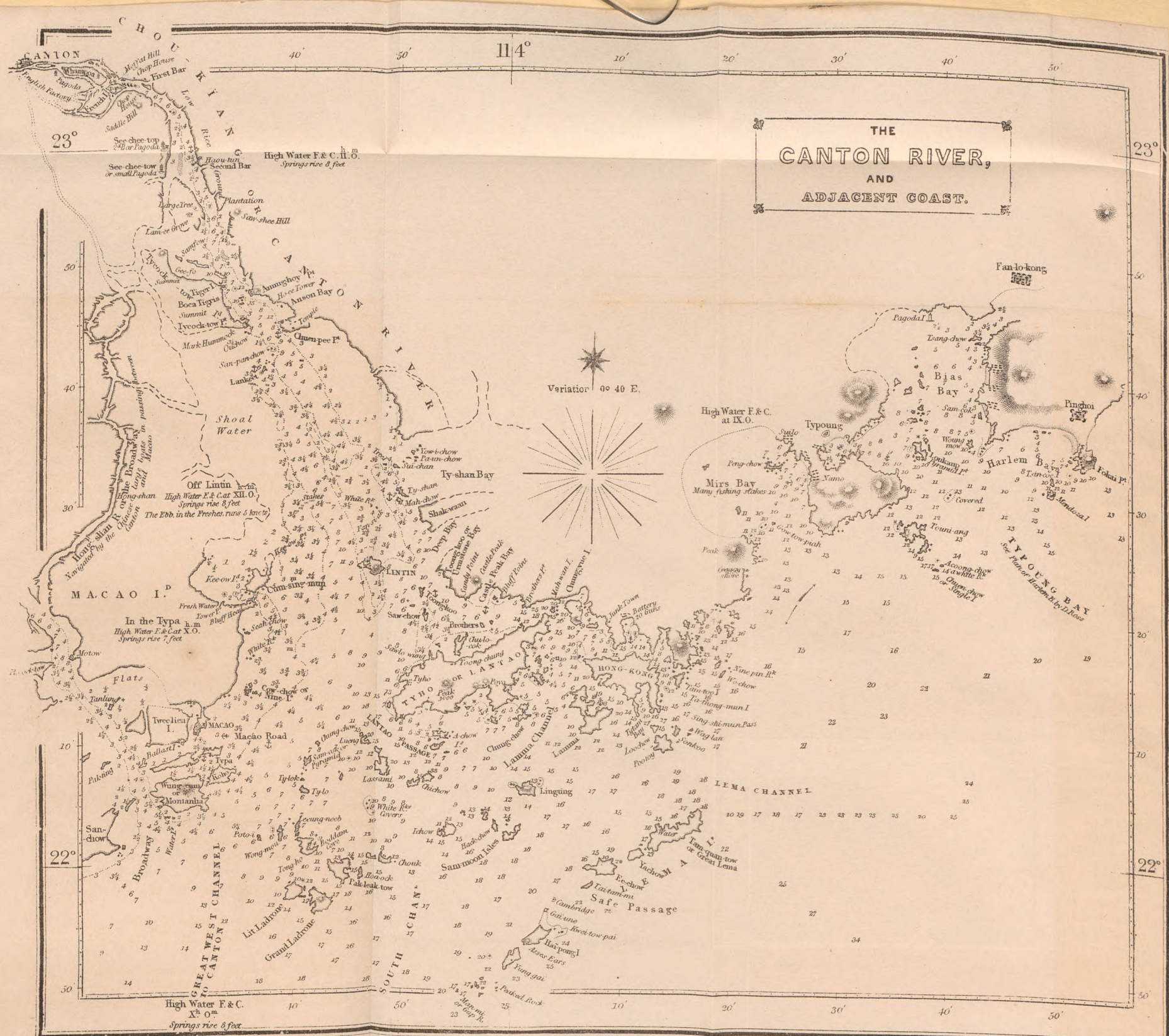
TO OUR FRIENDS AND CORRESPONDENTS.

Many of our papers having run to considerable length, have obliged us to defer our notices of books and charts till our next, as well as the appearance of several communications.

The journal of the Florentia will appear in our next.; we request the address for its return. The letter of M. X. M. certainly; that concerning the Baltic Navigation likewise; we bear in mind the injunction and shall expect to hear from the writer again.

This pressure on our space has also prevented our alluding to some dreadful occurrences which have recently taken place in our mercantile shipping, but which shall be duly noticed.


SOUTH AFRICA
SALDANHA
BAY
BY CAPTAIN WAUCHOPE R.N.
H.M.S. EURYDICE
1819
Houtjes Bay
Vessels may heave down in this bay.
Houtjes Pt.
Batavian Bay
f.s.sh
Blinder Klip
Malagassen I.
Marcus Id.
Ship Rock
s.sh
Varn 27° W.
Evlands Pt.
Best anchorage
Salamander Bay
Mowven I.
South Pt.
Jutten I.
f.s.sh
Riet Bay
South Pt.
Schapen I.
Dr. at Low Water
Stompe Hoek
Anchorage of Dutch Fleet when attacked by Sir G. Keith 1795
A little water may be obtained here.
Post Hon.
Signal Post
Ship Rock { 33° 1′ 45″ S. / 17 53 10 E. } by Capt.n W. Owen.
The Pasture in the neighbourhood is excellent, and cattle and sheep are plenty.
This Creek extends 5 miles to the Southward.
Nautic Miles
Cables 10 5 0 1 2 3 4


THE
CANTON RIVER,
AND
ADJACENT COAST.
CANTON
Whampoa
Pagoda
English Factory
French Factory
Moffat Hill
Chop House
First Bar
Dutch House
Saddle Hill
See-chee-top
24 Bar Pagoda
See-chee-tow
or small Pagoda
Haou-tun
Second Bar
High Water F. & C. h. m
Springs rise 8 feet
Large Tree
Lam-ee Grove
Plantation
Saw-shee Hill
Tycock Summit
Gee-fo
Tiger I.
Boca Tigris
Tycock-tow P.
Anunghoy Pt
Anson Bay
Mark Hummock
Ou-chow
Quen-pee Pt
San-pan-chow
Lamma
Shoal Water
Off Lintin
High Water F. & C. at XII. O.
Springs rise 8 feet
The Ebb in the Freshes runs 5 knots
Hong-shan
Navigated by the Chinese
Broadway
Hong-shan
Navigated by the Chinese
Canton
Light boats in passing
Macao
MACAO I.D
Kee-ow
Om-sing-mun
Fresh Water
Tower P.
Bluff Head
In the Typa
High Water F. & C. at X. O.
Springs rise 7 feet
Seah-chow
White Rk
Motow
Flats
Tanlung
Tree Hien I.
MACAO
Macao Road
Cow-chow or Nine P.
Ballast I.
Typa
Pakshing
Wung-nam or Montanha
San-chow
Broadway
Water I.
GREAT WEST CHANNEL to CANTON
Lit. Ladrone
Grand Ladrone
Poto-i
Wong-mou
Tong-ho
Buddam Cove
Tylok
Tylo
Lassami
Chichow
Ichow
Hack-chow
Sam-moon Isles
Chouk
Hoa-ock
Pak-leak-tow
Tyho or Lantao Peak 3000
LANTAO
Tyho
Pow
Saw-chow
Brothers
Chu-lo-coke
Thong-chung
Saw-lo-wang
Lintin
Keang-koo
Deep Bay
Tsoong-koo or Limestone Bay
Ty-shan
Mah-chow
Shak-waan
Ty-shan Bay
Low-i-chow
Pa-un-chow
Sui-chan
Tycock
Stakes
White Rk
Fan
Lantaa Point
Castle Peak Bay
Castle Peak
Bluff Point
Brothers Pt
Mah-wan I.
Chuen-pee I.
Junk Town
Battery
20 Guns
Nine-pin Rk
Wo-chow
Tam-koo I.
Ta-thong-mun I.
Sing-shi-mun Pass
Wag-lan
Loo-chow
Pootoy
Sonkoo
Lamma Channel
Chung-chow
Lamma
HONG-KONG
LEMA CHANNEL
Lingting
Yachow
Tam-quan-tow or Great Lema
Ee-chow
Tai-tam-mi
Safe Passage
Cambridge
Gai-une
Rivet-tow-pai
Hai-pong I.
Asses Ears
Yung-gai
Peaked Rock
SOUTH CHANNEL
Mong-mi or Gasp Pt.
High Water F. & C. Xh 0m
Springs rise 8 feet
Variation 0° 40' E.
High Water F. & C. at IX. O.
Typoung
Suilo
Peng-chow
Namo
Mirs Bay
Many fishing stakes
Fan-lo-kong
Pagoda I.
Tsang-chow
Bias Bay
Sam-kok
Wong-mow
Pinghoi
Lin-kaam
Lyngauld Pt
Harlem Bay
Tsun-ao
Fokai Pt
Mandoval
Covered
Tsuni-ang
Coo-tow-puah
Peak
Acoong-chow
14 awhite Rk
Chuen-chow Single I.
TYPOUNG BAY
See Plan of Harlem Bay by D. Ross

Remarks and Sailing Directions for the Harbour of Tinghae, Chusan.—*By R. Collinson, Lieut. R.N.*

Tides.—A tide register was kept during the day at the observatory by the signal-man, and upon full and change days equal levels were observed by either Mr. Symonds or myself, the result of which give for the time of high water on those days, one hour before the moon's transit: scarcely any change takes place in the depth of the water three-quarters of an hour previous, and subsequent to the time of high water; but at low water the change occurred more rapidly; the extreme rise and fall observed was twelve feet three inches, ordinary tides five to seven feet. Strong westerly winds sometimes cause a difference of two feet in the rise and fall. In all the channels, generally speaking, the change in the direction of the stream does not take place until 1h. 40m. after the change has taken place in the depth: at the anchorage between Elephant and Deer Islands, it is high water 1h. 20m. subsequent to the observatory: in the inner harbour, and along the island of Chusan the flood comes from the eastward; at the outer anchorage off the Elephant from the south-east, and between Bell and Tea islands ships flood rode tend to the northward.

Geographical Position.—The latitude of the observatory was determined by circum-meridian altitudes of stars with a small azimuth and altitude instrument, the result of which gives 30° 0′ 19″ north; the longitude was determined by a series of moon culminations, sixty-eight in number, which worked with the moon's computed right ascension give 8h. 8m. 20s. easterly. A short run from Loo-choo in her Majesty's ship Cruizer, enabled me to connect Capt. Beechey's position of that place with the observatory, and it differs only 2·5s. to the east: the meridian distances by the different ships from Sincapore range from 121° 58′ to 122° 20′. Few of the ships however had opportunities of obtaining rates for their chronometers.

Magnetic Variation.—The variation of the compass by the large theodolite is 2° 33′ west, and by two prismatic compasses 2° 50′ and 3° 10′ westerly: the dip by both needles is 42° 16′ north.

Sailing Directions.—The harbour of Tinghae is difficult of access in all its approaches owing to the strong tides and sunken rocks; but the best passage is that between Tower-hill and Bell island, in which there has been found no hidden danger: the tides, however, set at the rate of three and three and a half knots, and vessels in light winds must be careful that they are not set into the Archipelago between Tea and Elephant islands, where the ground is foul, and the narrow channels deep. Between Tower-hill and Bell island forty and fifty fathoms will be found; on the Tower-hill side there is less water than on the opposite shore: both islands are steep to.

Anchorage.—Between Bell and Tea islands eligible anchorage, in from nine to twelve fathoms, will be found by keeping mid-channel with steady tides.

On proceeding from thence to the inner harbour, care should be taken to avoid the strength of the ebb, which, unless there is a commanding breeze will set you through the southern passage; the anchoring ground

on the Chusan shore is steep to, and the tides irregular; but it is convenient for watering.

A sunken rock with three fathoms over it lies due south from a small hill, near the shore in the valley, two and a quarter cables off shore.

The middle ground in the inner harbour has but two feet in its shoalest part.

Middle Ground.—Tower-hill in one with the slope on the southern rise of Tea island will keep you in four fathoms: the three fathoms' line extends within two and three-quarters cables of the island of Wae-woo-kweisan,* which must be steered for after passing Guard-house island. There is a deep channel between it and Guard-house island one cable in width; and also between the middle and the shore of Chusan there is fifteen and sixteen fathoms, the distance being one and a quarter cables: the channel between Guard-house island and Chusan is fit only for boats.

The strait or south channel is a precarious entrance for vessels, unless they have a commanding breeze, and are acquainted with the localities of the rocks, and set of the tides. The outside anchorage for this passage is abreast Elephant island in sixteen and seventeen fathoms: the holding ground however is not good, and vessels entering further will find deeper water, and stronger tides; and it is by no means so well sheltered as that between Bell and Tea islands.

Southern Rock.—The southern sunken rock lays S. 63° E., one and three-quarters cable from the Black rock, and N. 75° E., one and three-quarters from the ledge; the marks for it are Joss-house hill just skirting the ridge of Trumble and Sarah Galley islands; Cap rock on with the Saddle of Kintang or Silver island; it has but nine feet over it, (low water springs), seven and eight fathoms extend east and west of it, but north and south it is steep to.

Hindostan Rock.—The north rock lies N. 3° W., one and three-quarters cable from it, and has also nine feet on its shoalest part: in extent it is larger than the other, and steep to on all sides. The marks for it are the north extreme of Black rock touching the mound on Cap island; the Joss-house hill seen clear of Trumble island, and a bushy tree on the south-east slope of Sarah Galley island in line with the square beacon on the hill.

The navigation of the passage is rendered more difficult in this immediate neighbourhood by the tides which meet from four different channels forming eddies which render vessels in light winds totally unmanageable.

From the sunken rocks to Wae-woo-kweisan there is no danger, and by hauling close round the latter island the middle ground will be avoided.

Passage between Sarah Galley and Deer Island.—There is also another channel, (which is preferable to the latter,) between Deer and Sarah Galley Islands, which is one and three-quarters cable wide: The sunken rocks are avoided by keeping Deer Island on board. A mud spit extends three-quarters of a cable from the north end of Deer Island, but it does not interfere with the passage. The north-east

* Called Macclesfield in Thornton's chart.

beacon may be approached on either side within a quarter of a cable, and the Chusan shore is steep to. Abreast Laou-chusan the passage narrows to one cable, but the danger is marked by a stone beacon, which shews at all times of tide. West of the beacon is a shoal patch, which by keeping the Chusan side until Sarah Galley shuts in with Trumble Island, will be avoided; it has nine feet water on the shoalest part.

Between Trumble and Sarah Galley Islands there is a convenient anchorage in nine and ten fathoms; the three fathoms' line extends three and a quarter cables south-easterly from Trumble, but by bringing the south extreme of Wae-woo-kweisan in line with highest part of Tea Island, its extreme limit will be marked. This passage offers the advantage of being the only one in which the same tide will carry you into the harbour.

Chusan towards Ningpo.—Ships bound from Chusan to Ningpo should pass between Bell and Tower-hill Islands, and not between Bell Island and Chusan; as in the latter passage there are some sunken rocks, besides those upon which the beacon stands, and the tides are very rapid.

Watering.—Water is not good, and sometimes scarce; the tanks in the rice fields near the sea being the only supply, excepting wells which afford only a limited quantity,—no running streams have been found. The place latterly adopted for this purpose by the men-of-war is in the bay, west of Guard-house Island.

Fresh beef is now plentiful, bullocks selling at from eight to fifteen dollars. Goats, ducks, pigs, and fowls, are also to be had in any quantity at a reasonable rate; vegetables of all kinds are plentiful and good, sweet potatoes forming the staple part of their food. The ridges of all the hills are cultivated in the most careful manner, the barren spots being devoted for their burial grounds. Extensive stone embankments prevent the encroachment of the sea on the rice fields, and a vast quantity of valuable land has been gained in this way from the sea. Canals form the principal means of transportation, the roads being merely footpaths; every large field has its canal for the purpose of carrying away the produce, some of which are four feet below high-water springs.

The city of Tinghae is one mile and eight cables in circumference, and is surrounded by a wall fourteen feet nine inches high and thirteen feet wide, surmounted by a parapet fourteen feet six inches high and two feet wide; the south face runs east and west, the west face north and south; the east face runs north 350 yards, and then north-west. The north face is irregular on the north-west side, the city is overlooked by a hill, part of which is enclosed by the wall.

A canal thirty-three feet wide and three feet deep, nearly encircles the city, and enters it near the south gate.

There are four gates, each of which have two-arched entrances, one being at right angles to the other; the arch of the outer one is seven feet six inches wide and nine feet high; the principal streets are seven feet wide and badly flagged; the houses are irregularly and badly built and generally of one story.

The south gate is five and a half cables from the sea,—a canal and paved footpath lead from the suburbs; the principal means, however,

of communicating with the sea, is by means of a canal further to the east.

Large quarries of hornstone porphyry are found in the north-west extreme of the island, from which large blocks are hewn. The stone beacon on one of the reefs is a circular pillar thirteen feet high, and five feet ten in circumference. Mill-stones and slabs of this appear to have been one article of exportation.

In the preparation of salt from the sea, great numbers during the summer appear to be occupied. A distillery of spirit from rice, and manufactory of mats form another means of employment.

During the month of September, the thermometer in the shade ranged from 71° to 102°, its average height during the day being 85°. The prevalent winds during the month were from the eastward and the weather fine.

The range of temperature in the month of October is from 51° to 92°: the prevalent winds during this month were from the north-westward. The barometer, generally speaking, stands high, and rises with strong north-westerly breezes sometimes to 30·34 inches; during this month much rain fell, and the sky was generally overcast.

In the foregoing remarks, the names of the islands have been taken from Thornton's chart.

JOURNAL OF PROCEEDINGS ON BOARD H.M.S. NIMROD, AND REMARKS ON THE PASSAGES BETWEEN KEETO POINT AND THE ISLAND OF FOOTOSHAN. —*By R. Collinson, Lieut. R.N.*

THE Nimrod weighed at 11 A.M., and went out of Chusan harbour by the south or direct passage.

The ship anchored near the entrance of the ten fathoms Junk passage, (Thornton's chart,) that evening, and on the following morning I landed upon Keeto Peninsula, for the purpose of obtaining angles and measuring base by sound. While so occupied, the Chinese assembled to the number of between 2 and 300, but did not advance nearer than one-third of a mile. When the round of angles were completed, I sent the theodolite down to the boat, and remained to make an eye-sketch—immediately it disappeared the Chinese advanced rapidly, and nearly succeeded in cutting us off from the boat, into which they threw stones, and upon our getting out of stone's throw opened a fire from matchlocks, which was returned from the boat; they fired with good precision, striking the boat in several places, and wounded one man, A. Phillips, in the shoulder.

Having a narrow passage to continue the survey through, I conceived it advisable to return on board for the boat's gun. Captain Barlow, however, determined to move the Nimrod further inshore, in the execution of which, the tide set her on the spit that runs off Roberts Island, and the remainder of the day was occupied in getting her afloat. On the 27th we left in three boats, and passed through the ten fathoms Junk passage without molestation; the natives, on the contrary, communicated freely with us. The passage is two cables wide, having

seven and eight fathoms in the centre, and steep to on either shore; the island by which it is formed appears formerly to have been several, which are now connected by substantial stone embankments: the level of the cultivated ground is three feet below high water. The vallies on the Kittow side are well cultivated, and there is every symptom of a thriving and large population. Near the centre of the passage was a custom-house and the entrance to a canal, which communicates with populous villages.

The southern entrance to this channel has only nine feet at low water: a mud bank extends two miles off the south extreme of the island, and also one mile from the main; vessels, therefore, should not pass within Batemans Island, which is a conical island with a reef to the southward, and some sunken rocks one cable north of it.

The 28th was occupied in surveying Goffs and Roberts best passage, the continuation of the mud spit running off from the south extreme of the island, forming the ten fathoms Junk passage narrows Roberts best passage to a cable and a half, the northern limit of which will not be visible except at low water; it is not therefore so eligible as Goffs passage. The islands separating these two passages are steep to on all sides, except the west, from whence a mud spit dries and two fathoms extend half a mile.

On the 30th we started in three boats for the opening between the Monks Cap and Keeto Point. A curious perpendicular rock thirty feet above the level of the sea, forms a remarkable object in this passage on the south-east side, it is steep to, (five fathoms) but upon the other side ledges extend; the bay here is five miles broad, the soundings very regular, (six fathoms,) six miles further it is contracted to two miles and a quarter, with eleven fathoms water: the land on each side is about 400 feet high, not so well cultivated as other places. In some of the inlets were three or four houses, and a large plain under the Monks Cap appeared to be extensively planted with larch trees; eleven miles from the Bateman there is a small island in the centre of the passage, which is here three miles broad, having an inlet on the south-east shore. The principal channel still appearing to lead south-west, we pursued our course in that direction four miles further, and took up our quarters for the night on the south shore, during the course of which the latitude was obtained by stars, 29° 31′ 25″ north.

On the 1st of September, after passing through the narrowest part of the strait, we had yet come to, viz. one mile we entered an extensive sheet of water studded with numerous islands, upon one of which we landed; the bay appeared to extend ten miles from east to west and seven from north to south. At its western extreme it took a turn to the northward, and its limits in a southerly direction were not clearly defined. Having only that day's provision with us, we were compelled to return without completing the examination, and reached H.M.S. Nimrod by four the following morning. From the regularity of the tides I do not conceive there is any other outlet to the ocean.

The 2nd of September was spent in fixing the astronomical position of Tree-a-top Island, and putting in the western coast of the island of Footoshan: the latitude of the former is 29° 42′ 33″ and 3′ 24″ west of Chusan Observatory.

In Goffs passage the flood tide comes from the northward, and changes its direction 1h. 40m. subsequent to the time of high water, which is 9h. 40m. on full and change days.

The examination of this sound has since been completed by H.M.S. Conway and Algerine; an extensive plain, (probably communicating with Ningpo,) terminates its direction north-westerly. The mud drying a considerable distance from the shore, renders it difficult to be approached, except at high water.

Proceedings of H.M.S. Beagle.—*Com. Wickham.*

The following reports of the proceedings of her Majesty's sloop Beagle, surveying the coast of Australia, will be read with considerable interest, more especially as it was currently reported lately, that she was wrecked on the north-west coast of that continent. The account which they contain of that interesting portion of the coast of Australia, near Houtmans Abrolhos, as well as the description of these islands, is of great importance, and likely to affect in some degree the future interests of Australind. The commencement of the first letter will be found in page 197, of our March number.

Houtmans Abrolhos, Champion bay, Ritchies reef, Depuch island, Turtle islands, Bedout island, Scotts reef to Timor.

The Turtle Dove shoal does not appear to exist. The coast has been examined opposite to the Abrolhos, for the purpose of connecting those islands with the main land, and a convenient bay was found in which the Beagle anchored. It is in latitude 28° 57′ nearly, and affords shelter from all prevailing winds, but is open to the northward. It was entered by the colonial schooner Champion, from Swan River, a short time before us, and has been named Champion bay in consequence.

From the Abrolhos the Beagle proceeded to the northward, and on our way round the north-west cape, we endeavoured to get sight of Ritchies reef, but it does not appear to exist in either of the assigned positions, as on January 10th, 1838, the observed latitude at noon was 19° 57½′ south, and longitude by chronometer 114° 40′ east, being only one mile N.N.W. of its position in Horsburgh's Directory. No appearance of a shoal was seen from the masthead, and there was no bottom with 195 fathoms of line.

On June 5th, 1840, the latitude at noon was 20° 17′ south, and longitude by chronometer 114° 31½′ east, from which position the ship stood to the eastward, until 3h. 30m. P.M., when the latitude was 20° 18½′, and longitude by P.M. sights 114° 42′, being then a little more than three miles from what Lieut. Ritchie considered, the best position for the reef; but although the weather was clear, nothing was seen of it, and we found no bottom with 230 fathoms of line; we then stood to the north-east, sounding frequently and keeping a good look out, but without seeing anything to indicate shoal water. May not Ritchies reef be the north-west extreme of the reef off Trimouille island, the limits of which are not yet known. The latitude of its southern position favors

such a conjecture, and an error in longitude of thirty miles sometimes does occur.

As the north-west coast had been sufficiently examined by Captain King, as far to the eastward as Depuch island, it was resolved to commence our work at that point: the Beagle was therefore anchored off the sandy beach on the north-east side of the island, described by Capt. Freycinet, and which we found to be an excellent port protected from the north-east by one of the Forrestier isles, three miles and a half distant, from which a reef extends to the W.N.W., leaving only three points open between N.W.b.N. and W.N.W.

As our stock of water was now very much reduced, search was made for the streams mentioned by M. Freycinet, but every place was perfectly dry. Eight wells were dry in different parts of the island varying from eight to twenty-one feet in depth, but only in one did we succeed in reaching water, and that was perfectly salt. Fortunately a reservoir was discovered in one of the valleys nearly a mile from the beach, from which we got about seven tons of tolerable water.

Depuch island is a singular mass of basaltic stone, piled up in every variety of form, and presenting so rugged a surface, that it was with difficulty we could get from one part to another; the summit of the island is 514 feet above the sea, from whence we had a good view of the main land, which appeared a vast plain, with several rocky hills rising from it, varying in height from 200 to 500 feet, and from their dark reddish brown appearance, are most probably of the same formation as Depuch island.

The coast is a low shore, thickly lined with mangroves and intersected by creeks at high water, which probably overflow a great part of the low land, as from the many bare white patches which we saw. A great part of the flat land for some miles from the coast appeared to be covered with a salt incrustation, and had a most arid and parched appearance.

This description of coast continues nearly fifteen miles to the eastward of Depuch island, when the sand hills commence, and form a barrier between the sea and the low flat land that seems to extend for many miles into the interior, and is not visible from a ship's deck, although the sand hills rarely exceed forty feet in height, and are generally very much below that.

The coast as far as the Amphinome shoals, is of this description, but the low land in the interior is thickly wooded, and from the numbers of natives whom we saw, as well as the fires that were burning in different directions, it appeared to be thickly inhabited. But we saw nothing to lead us to suppose there was a stream of fresh water on any part of the coast. A landing place was effected on several places, and observations obtained on a small islet in latitude 20° 19′ $\frac{1}{3}$ south, and longitude 118° 27$\frac{1}{4}$′ east, which places all this part of the coast considerably to the southward. Generally speaking the shore is rocky, and there are several creeks that may run some distance inland, but they are dry at low water, and fronted by extensive flats, the range of tide during springs being sixteen feet, and we found it fourteen feet and a half at Depuch island; the flood comes from the north-west.

With the exception of a few isolated rocky hills, in longitude 118° 50′ and seven or eight miles from the coast, the country is uniformly low.

These hills have a singular appearance, they rise from the plain to an elevation of 200 feet, some of conical shape, and others table-topped, and from their colour and general appearance, are probably of the same description as Depuch island, and the hills in that neighbourhood.

Having only ten days water in the ship, and seeing no prospect of getting a supply on the coast, we were unable to extend our examination to the eastward of the Amphinome shoals. The Turtle islands are merely banks of sand, upon a bed of rocks; the northern island was visited by us. It is in latitude 19° 53¾′ south, and longitude 118° 53½′ east, and is surrounded by a reef that dries at low water, from a mile to a mile and a half off on all sides. The water is deep immediately outside this reef, and there is a good anchorage half a mile from it, with the centre of the island bearing north.

We found turtle very abundant and easily procured. The tide runs past the island, nearly two knots an hour during springs, the flood to the south-east and ebb north-west, range eighteen feet measured by the lead line.

Bedout island was also seen, and we remained at anchor off it one night, in the hope of being able to land and get observations to fix its position; but the heavy sea occasioned by the tide, and a strong breeze from south-east, rendered it impracticable, and as we could not afford time to wait a more favourable opportunity, observations were taken on board, that place it in latitude 19° 36′ south, and longitude 119° 04½′ east, being very different from the position assigned to it, in the French charts. It is similar to the North Turtle island, being surrounded by a reef which extends nearly five miles to the westward and north-west.

From Bedout island we made the best of our way to this place, passing to the eastward of the Rowley shoals, and in sight of Scotts reef, which has given us an opportunity of verifying its position, with regard to that given to it in December last year, when the Beagle passed within four miles of its north-west extreme, which is in latitude 13° 55′ south, and longitude 121° 47′ east, and the south-west part in latitude 14° 12½′ south, and longitude 121° 44′ east. The southern limit, as far as we could see, is in latitude 14° 15′ south, which makes it occupy a space of twenty miles north and south. This reef seems to be of circular shape, and from the smooth appearance of the water over the breakers, probably forms a lagoon of great extent. There is a break in the west side of the reef, where there may be an entrance, and a dry bank of sand or coral of some extent, and fifteen or twenty feet high, a little within the reef;—this bank is in latitude 14° 04′. The west side of the reef is very steep, and we stood along it at three or four miles distance, without being able to gain soundings.

Owing to light variable winds, between north-east and south-east, the passage from Bedout island to this place occupied ten days, and then we did not fetch sufficiently far to windward to enter the strait of Samao, but had to pass to the westward of Douw island.

We are now busily employed in getting on board wood and water, and shall sail again for the north-west coast as soon as possible.

I have the honour, &c.,

J. W. C. Wickham, *Commander.*

To Capt. Beaufort, R.N., &c.

Lewis or Isabella Shoal, Montebello islands, Barrow island, Ritchies reef, Swan river, New island in Investigator strait,—to Sydney.

H.M.S. Beagle, Sydney, New South Wales, 6th January, 1841.

SIR.—I have the honour to inform you, of the arrival of her Majesty's surveying vessel, under my command, at this place on the 23rd of last month, after an absence of nineteen months. On the 1st of August last I addressed a letter to you, from Timor, reporting our proceedings up to that time, which was forwarded by a vessel bound to Batavia. After sailing from Timor on the 6th of August, we proceeded on our return to the north-west coast of New Holland, steering a course that would carry us near the position of a shoal reported by Mr. Lewis, of the Isabella, to be in latitude 14° 43′ south, and longitude 119° 20′ east, where he saw high breakers.

Having reached near to this position, on the night of the 9th the ship was hove to until daylight, when a good look-out was kept, without anything being seen to lead us to suppose we were in the vicinity of a reef; the deep-sea lead was kept going at stated intervals, without our being able to gain soundings, although with at times more than 200 fathoms of line.

We continued our fruitless search until noon of the 14th, when we were in latitude 14° 44½′ south, and longitude by chronometer 119° 04′ east, having that forenoon passed about four miles and a half to the northward of the assigned position of the reef. I was induced to persevere in the search for this shoal, as it is reported to lie in the direct route of vessels sailing between Timor and the west coast of New Holland. It appears more than probable that no such shoal exists, as during the whole time of our search, the weather was most favourable to our purpose, being perfectly clear, and there was a considerable swell from the south-west that would have caused heavy breakers, which we could not fail to have seen eight or ten miles from the mast-head.

Owing to light easterly and south-easterly winds, we did not make the coast of New Holland to the eastward of Depuch island, and as we had failed in getting a supply of provisions at Timor, I was obliged to relinquish the plan of continuing the examination of that part of the coast, between the Amphinome shoals and Cape Villaret.

The Beagle was consequently anchored under Bezout island, and boats were sent in different directions, for the purpose of obtaining soundings, and examining the coast to the eastward towards Depuch island. From Bezout island the ship was moved to Delambre island, when the boats were again employed in ascertaining the extent of the shoals off it. There is no shoal water to the northward of this island, but a strong tide rippling, which at times has very much the appearance of a reef, and no doubt gave rise to the line of rocks marked in the charts.

From Delambre island we next proceeded to the Montebello islands, with the view of ascertaining their extent, and the limit of the reef off their north-western point. This group was found to consist of a multitude of small islands and rocks, extending quite to Barrows island,

with no safe passage for a ship amongst them. As these islands bore a very different appearance to that given to them in the charts, and being the most projecting part of the coast, I conceived it advisable to have their extent correctly ascertained. Mr. Fitzmaurice, (accompanied by Mr. Keys,) was therefore sent upon that service in a whale boat with a week's provisions, while the Beagle proceeded to Barrow island, in search of a supply of firewood, having only sufficient for four or five days remaining.

After some difficulty, owing to the shoalness of the water, an anchorage was found for the ship off the east side of Barrow island, and four miles off the shore. This side of the island is very barren, being almost a mass of bare sand-stone, studded with red coloured ants' nests. There is little or no soil upon the higher part of the island, and in the valleys there is a scanty sprinkling of a very sandy description, and of a red colour; all parts are covered with a wiry reed-like grass. A few stunted shrubs and bushes afford us a tolerable supply of firewood, but there was no appearance of fresh water. During the time required for wooding, and getting on board a stock of turtle, (which we found very numerous,) a boat was sent round the north end of the island for the purpose of fixing of its north-west point, and getting bearings to the different islets and reefs in the offing.

There is a considerable reef with several dry rocks in its bearing north 60° west, and distant eight miles and a half from the northern point of the Montebello islands; this is no doubt Ritchies reef, as it corresponds in latitude with the position assigned to that shoal, but is about half a degree to the eastward. It appears to have been seen by the French, and is laid down by them as a continuous reef from the north-west end of Hermite island.

The Beagle passed between it and the islands, and had not less than seventeen fathoms, upon a rocky ridge that appears to connect it with them, the depth on either side of this ridge being twenty and twenty-two fathoms sandy bottom.

From these islands we made the best of our way to Swan River, where we arrived on the 27th of September, but were detained there until October the 25th, owing to the very debilitated state of some of the crew, who had been suffering from dysentry contracted at Timor. But this time was not lost, as many valuable soundings were got in the passage to the southward of Rottenest, and two good beacons* were fixed as marks for avoiding the dangers that extend a considerable distance from the eastern side of that island.

Between Swan River and this place we touched at King Georges Sound, and Adelaide, for the purpose of shortening the interval between rating the chronometers, owing to the great changes of temperature, after reaching to the southward of Swan River.

In approaching Investigators strait, on the passage from King Georges Sound to Adelaide, we discovered a small low island that is not laid down in the charts of that part of the coast. It is in latitude 34° 49′ south, and longitude 134° 48′ east, and bearing south 8°

* We published an account of these (see page 400,) in our last number, from the Surveyor-general at Swan River.

east, (magnetic) nine miles distant from the highest peak on Greenlys island.

I have the honour to be, &c.,
J. C. WICKHAM, *Com. RN.*

Mount Fairfax, the Wizard Hills, and Champion Bay.

The only part of the west coast (to the northward of Swan River) that has been visited by the Beagle is that part immediately to the eastward of the Abrolhos, and it is remarkable from being under the high table land of Moresbys flat-topped range, which is a considerable elevation, and in clear weather is visible from a ship's masthead at the Abrolhos.

This range of hills extends N.N.W., six miles from Mount Fairfax, which although a detached hill may be considered its southern extreme. Mount Fairfax is a table-topped hill, the summit of which is an elevated part at its southern edge, and is 590 feet high. It is in latitude 28° 45¼′, and longitude 1° 3¾′ west of Swan River, and four miles from the coast. To the south-east of Moresbys flat-topped range are the Wizard Hills, the highest of which, Wizard Peak is 640 feet. It is in lat. 28° 49′ 37″ S., and long. 0° 58½′ W. of Swan River. For ten miles and a half to the northward of Moresbys flat-topped range are some remarkable detached ranges of table land, from 500 to 600 feet high, at the northern extreme of which are the Menai Hills. Some of them show as peaks, but appear only to be the gable ends, as it were of table-topped ridges.

In lat. 28° 47′ S. there is a narrow neck of low land projecting about a mile and three quarters from the coast line, to the northward of which there is good anchorage in Champion bay.

Point Moore which is the extreme of this low projection bears W. 13° S. (mag.) from Mount Fairfax, and W. 17° N. (mag.) from Wizard peak. The anchorage is protected from the westward by a reef that extends upwards of a mile to the northward from Point Moore: but half a mile to the northward of this reef is a detached shoal patch which breaks occasionally, between which and the reef there is a passage through which the Beagle passed, and had not less than six fathoms. But perhaps it would be advisable in standing into the bay to pass to the northward of this danger, which may be done by not bringing Mount Fairfax to bear to the southward of E. ¼ S. (mag.) until Point Moore bears south.

This bay is open to the northward, but as the winds from that quarter are not frequent, and then only in the winter season it may be considered as affording shelter from the prevailing winds on the coast. The water is shoal in the head of the bay, but a good anchorage may be taken three-quarters of a mile off shore in four fathoms sandy bottom with Point Moore bearing S. 50° W., and a remarkable bare brown sand hill in the south-east part of the bay, bearing S. 31° E. Mount Fairfax will then bear N. 87° E., and the north extreme of the reef from Point Moore N. 50° W. Wizard peak is not seen from this anchorage.

South of Point Moore is another bay formed by a continuation of the

same reef that shelters Champion bay from the westward; but it is quite exposed to the prevailing winds. From Champion bay the coast to the northward is sandy, and fronted by sand hills slightly covered with shrubs. This description of coast continues for nearly twenty miles. In lat. 28° 25′ is a remarkable white sand patch 274 feet above the sea; between two and three miles south of which is a deep ravine where there is probably a stream of fresh water. Here the shore becomes steeper, and rises abruptly from the sea, forming Downs about 300 feet high. Native fires were seen in this neighbourhood, and the country had a more fertile appearance than in the vicinity of Champion bay. This part of the coast is bold to and is free from outlying dangers; the depth of water from two to four miles off shore, being between sixteen and twenty fathoms. High water at Champion bay takes place on change days at 9h. 30m. P.M. nearly, and the range is from twelve to twenty-four inches. The stream of tide is not perceptible, but there is generally a current along the coast to the N.N.W. from half a mile to a mile an hour.

Champion bay appears to be the only anchorage on the coast between Swan River and Sharks bay: it is preferable to Gages road, and may at no very distant period become of importance to Western Australia, in consequence of a considerable tract of fine country having lately been discovered immediately to the eastward of Moresbys flat-topped range.

[Our next number will contain Capt. Wickham's description of Houtmans Abrolhos.]

Timor Laut, the Arrou and Ki Islands.

The scanty knowledge we have of the numerous islands forming the south-east boundary of the Banda Sea, induces us at once to lay before our readers the following extracts, from the remarks of her Majesty's ship Britomart, Commander Owen Stanley, drawn up by Mr. James Hill, the second-master of that vessel. They were visited by that vessel in March, 1839.

Oleliet is situated on the south-east part of Timor Laut, in latitude 7° 54′ 46″ south, and longitude 131° 26′ 33″ east; it affords a secure anchorage during the north-west monsoon, in from ten to fourteen fathoms, about half a mile from the shore. During the south-east monsoon the swell, and a very strong set to the southward, render the anchorage very unsafe.—The village of Oleliet is built on a hill, 413 feet above the level of the sea, the land side of which is nearly perpendicular, and can only be ascended by ladders, that can be removed in the event of any attack from the land, the formation of which perfectly protects the town from any attack from seaward.

The population appeared to be large,—the men were all strong and active, they have a peculiar mode of dying their hair of a flaxen colour, (which they wear very long and appear to take great pride in,) a simple waist cloth is their only dress; bows, arrows, iron-headed spears of formidable dimensions, and crests were plenty among them. Cocoanuts may be procured in any quantity, but the other articles of stock

they did not seem much inclined to part with. Water may be procured on the north side of the bay.

The people of the Tenimber Islands are not to be trusted, however friendly they may appear for the time.

Between Oleliet and Luora a coral reef extends to about a mile from the shore, on which there is a heavy surf during the south-east monsoon, within which the water is apparently shoal.

Luora, and another village, the name of which we could not ascertain, are built upon the same plan as Oleliet. From Luora, the east coast of Timor Laut is high, (about 600 to 800 feet,) and very thickly wooded; several bays were observed, which, if not blocked up by coral reefs, would afford anchorage in both monsoons;—the water is very clear, so that during the day no danger whatever need be apprehended, if a good look-out be kept from the mast-head, but at night the lead will not give sufficient warning. During the south-east monsoon a strong current was found to prevail off the coast.

Arrou Islands.—On nearing these islands the soundings become very irregular, varying from thirty to fifty fathoms in less than two miles; all the islands seen by the Britomart, were low and thickly wooded. The water is not so clear as off Timor Laut.

The native traders found at Dobbo from the northward, generally prefer making the small island of Babi; after getting hold of which, a N.N.E. course is steered for the north-west point of Wamma, distant six miles and a half, and may be known by a native village and a small Dutch fort.

Vessels bound to Dobbo from the southward, when in the parallel of 6° 8′ south, and longitude 134° 4′ east, with eleven or twelve fathoms of water, will find a deep opening to the eastward, and a little more to the northward will be seen the island of Babi, which is low. Having reached the north-west end of Babi, and being four or five miles to the westward of it, steer north-east or more easterly, until you see the village and fort of Waula, on the north-west point of Wamma: a good berth must be given to this point, and the south-west point of Wokam, as a shoal extends for some distance from both points, over which the tide sweeps with great strength, the flood to the southward and ebb to the northward. On approaching the north-west point of Wamma, the village of Dobbo will be seen on a low sandy point. Running in with a leading wind you may steer a mid-channel course, or keep Dobbo Point a little open on the starboard bow;—the channel is deep, and the soundings very irregular, varying from eight to eighteen and twenty fathoms,—both shoals are steep to, the edges may be distinctly seen from the mast-head. The anchorage is close off the low sandy point of Dobbo, in from fifteen to twenty fathoms very good holding ground; the traders generally have a small anchor on shore, and anchor to the eastward or westward of the point according to the monsoon.

Having to turn in or out, great attention should be paid to the tides. If turning in with the flood, and standing towards the southern shoal, you should tack the first shoal east, as the tide sets strong over that bank; in turning out with the ebb, the same attention should be paid to the northern shoal, as the ebb sets strong over that bank. The

people of Wamma profess to be pilots, but those seen by the Britomart did not appear to be the least trustworthy or of any use.

Dobbo Point, latitude 5° 45′ 45″ south, longitude 132° 16′ 10″ east, variation 3° 30′ east, dip 25° 39′ south. The village of Dobbo is nearly a collection of Bamboo houses, erected by the traders, on their arrival every year, about the end of the north-west monsoon, for the purpose of curing trepang, and collecting the birds of Paradise. Birds nests and pearls, form the chief articles of their trade, in return for which coloured cottons, arrack, (of an inferior quality,) and tobacco are given to the natives,—at the end of their stay the greater part of the houses are removed. Very little stock of any sort can be procured here, as the as the traders only bring enough for themselves, and the natives appear to be quite careless about bringing articles to exchange. Water may be procured at the point, by sinking a cask a few feet deep, but it is not very good from the stream. Where fresh water is marked in the plan made by the Britomart, excellent water may be procured with a little more trouble. The native chiefs of the island of Wamma and Wokam, who have both gold-headed sticks with the Dutch arms on them, (as a symbol of authority) expect a trifling present of arrack and tobacco from vessels visiting the harbour; the trade is chiefly carried on in the interior by Chinese, who are brought in the trading vessels for that purpose. They proceed up the numerous channels with which the group is intersected, in canoes brought chiefly from the Ki Islands, and return when all their barter is expended, of which they give a strict account to the owner of the vessel on their return. The trees in the vicinity of Dobbo are very large and straight, and the wood is apparently applicable to all purposes.

The high mountains of Great Ki, which rise to a height of about 3000 feet, are visible before Dobbo harbour, is lost sight of.

Ki Elli though a fine village, and a great place for building the boats used in trading at the Arrous, possesses no harbour in either monsoon, as the water is deep close in to the edge of the reef, where it shoals suddenly: this village is celebrated for its pottery, of which many specimens were seen,—very porous, and admirably adapted for cooling water by evaporation. The boats are well built, very prettily modelled, and very cheap; the islands appear to be well cultivated, and the inhabitants very well disposed people.

Lesser Ki.—This island presents a very different appearance to Great Ki, being very low, with several shoals extending some distance from its north side, it is well cultivated ;—the water being very clear, the shoals are all visible by daylight, and at night an anchorage may always be obtained in either monsoon.

Ki Doula is situated on the north-west side of the Lesser Ki Island, in a bay fronted by several smaller islands, which, if well surveyed, would form a most splendid harbour in either monsoon. The village is well built, and surrounded by a thick stone wall, in which are three gates towards the sea, and ladders which can be hauled up at pleasure. A great number of boats are made here, and at the period of the Britomart's visit, two large prows were hauled up and undergoing repairs. The inhabitants were very well disposed, but were unwilling

to sell us any stock, though plenty of fowls and pigs were seen. The islands off the Lesser Ki were not well seen on account of the weather, which was very thick and rainy.

Tenimber Islands.—Britomart's anchorage, latitude 6° 58′ 03″ south, and longitude 131° 58′ 26″ east. Vordate is not very high but well cultivated, the anchorage off the south end is not very good, owing to the very unevenness of the bottom. The Britomart's anchor was let go in twenty fathoms, and on sounding round the brig, not more than five fathoms were found, excepting in a narrow passage between two reefs by which she had come in; it was late in the evening when she went in, and so dark that the reefs could not be seen. The water is very clear, and by daylight the reefs can be very distinctly seen. Bearings from the anchorage north end of Larat, north 141° east, south point of Vordate, north 133° east, town, north 93° east, Rocky Island, north 19° east, off shore half a mile. The natives here are not to be trusted at all, but they appear to be well off; their arms, head dresses and ivory ornaments, all indicated considerable intercourse with Europeans.

EQUATORIAL CURRENT.

THE following is an extract from the remarks of Mr. R. W. Millar, master of H.M.S. Pearl, shewing an extraordinary current prevailing in the Atlantic, under the equator which our seamen should be acquainted with.

MAY 31st, 1840.—While looking out for the sun's meridian altitude, I was much surprised to hear the masthead man report, rocks on the starboard bow; shortly afterwards, they were seen from the poop, bearing S.W.b.W. ½ W.:—ship's course S.W.b.W. I expected to find a westerly set about a knot and a half per hour, and calculated that we were at least seventy miles to the eastward of St. Pauls Rocks, which those in sight proved to be. At noon, the centre of the rocks bore W. ¼ N. 5′ or 6′, latitude acct. 1° 0′ 0″ north, latitude observed 0° 55′ 0″ longitude acct. 27° 18′ 0″ west, longitude by the mean of five chronometers 29° 14′ 15″ west; this, (assuming the rocks to be in 29° 22′ 0″ west, Capt. Fitzroy,) makes the chronometer between two or three miles to the eastward. In the afternoon, another set of sights was obtained about 5′ from the rocks: the results the same as at noon.

2 P.M.—Bore up when within two miles of the rocks,—lowered two boats to try rate of current: ship in the mean time working to windward to preserve her position, but although there was a fine breeze, she evidently lost ground. One boat only succeeded in stemming the current and getting close up to the rocks. The rate of current was found to be four knots per hour, W.N.W. Thus it appears, that since yesterday the ship has been set north 88° west, 116 miles. I examined the fourteen-second glass and log line, the latter I found rather long, but it could not produce a greater error than half a knot per hour, at the most; this would leave 104 miles westerly set. Or, if in addition, it be suspected that the log was badly hove, or that the ship ran one knot

per hour *faster*, then her rate, as shewn by the log board, taking 24 from 104 would still leave eighty miles westerly set to be accounted for. A barque, boarded yesterday, (Miranda of London,) mentioned having experienced an unusually strong set to the westward, but unfortunately, the master was not asked how much it was. On crossing the equator, between 25° and 27° west, I have on three occasions, found the current stronger in May, June, and July, than in any other part of the year. Once it set the ship to the westward 70′ in twenty-four hours.

I had sights for the chronometers at Porto Prayo, nine days previous to making St. Pauls Rocks, and the greatest difference between any two of them, (five in number,) was but three miles and a half. I worked over, and carefully examined the sights for several days preceding the 31st of May, but I could not detect any error. Although the result of five chronometers, (taken separately,) were so near each other, I must have doubted the possibility of the "Pearl's" being set so many miles to the westward. But the sight of St. Pauls Rocks proved our position, and the correctness of the chronometers; and when it was found with what difficulty the boats pulled against the current, and that the ship could not work to windward against it, there could be no longer any doubt as to our having been set to the westward, at the rate of four knots per hour,—supposing the remainder to be set off, as errors in log line, heaving the log, &c.

They are such mere rocks, that I much doubt if they would be seen further than 8′, unless a strict look-out was kept for them. They are covered with birds, and surrounded by garupas and sharks,—the latter are exceedingly voracious.

June 2nd, noon.—Fernando Noronha bore south 59° west, distant fifty-eight miles. At 2 observed the Pyramid from the mast head. 4. The Pyramid W. ¼ N. five leagues; chronometers between three and four miles too far to the eastward. From here to Rio de Janeiro we found little or no current. But if it be proved that the current in the latitude of St. Pauls Rocks, sometimes runs with unusual velocity, (as in the case of the Pearl,) it will be necessary to keep a vigilant look-out, particularly at night, as they are so near the water's edge they would hardly be seen, till too late to clear them.

[It is to such unusual currents as this that we owe the origin of the Bonetta rock, among the Cape Verde Islands, supposed to exist in no less than six different places, all of which disappeared on the investigation of Capt. Vidal, as we demonstrated in our volume for 1839, shewing that the Bonetta rock was no other than the outlying rocks of Bonavista. The St. Paul rocks are well calculated with this current setting on them, to bring up some of our mercantile shipping at night, unless a better *look out* be kept than appears to have been, by the numerous collisions which have lately taken place.—Ed.]

Voyage of the Ship Florentia.—*W. Goodwyn, Commander.*

Thursday, 12th March.—Having all the crew on board, and received sailing orders, we weighed our anchor and proceeded to sea. At mid-day, being abreast of Sydney Head, the pilot left us, a smart breeze blowing from N.E., the Hope, whaler, in company, standing to eastward. 4 P.M. breeze increasing, reduced sail. At dusk the Hope about eight miles astern; lost sight of her during the night.

Sunday, 15th.—At 9 A.M., saw Lord Howes Island and Balls Pyramid about N.E. On the 16th, at 5 P.M., sighted Howes Island. 17th, Winds still variable and easterly. Noon; lat. 30° 45′ S., long. 159° 49′ E. Lord Howes Island in sight S.W. 60 miles. From the 17th to the 23rd we experienced very fine weather, with light variable easterly winds, which prevented us sighting Norfolk Island. Passed about 100 miles to westward.—24th, while taking the noon observation my attention was attracted by a singular white cloud. On looking more attentively I saw the Island of St. Matthew, just above the horizon. Mr. Levitt reported two islands close together: trimmed all sail and hauled up to pass to windward of them. As we approached the island, what I had taken for a white cloud proved to be smoke issuing from the centre of it. On nearer approach, it appeared to proceed from a very large fire, and there was a smaller body of smoke as if from a smaller fire, half way down from the summit. We stood in within four miles of the east end of the island, imagining some parties might either have been left there, or perhaps wrecked; seeing no other signal I thought it might proceed from natives of islands contiguous; but on opening the northern point there was, at times, a body of fire running from the summit to the base, in a cleft or chasm, to the waters' edge; I therefore concluded the island to be of volcanic origin, and its subterranean fires still in a state of combustion. We watched it till a very late hour, and occasionally saw distinctly the fire descend from the summit, and about half way down separate into two bodies to the base. I have not the slightest hesitation in saying it was in volcanic action. Horsburgh lays down the island in lat. 22° 24′ S., long. 172° 15′ E., and in a note says, "This is called Hunters Island by Captain Fearn, who places it in long. 171° 50′ E., and he discovered a high rock to the westward in lat. 22° 21′ S., distant fourteen leagues from the former." This he considers to be Matthews Rock, which has near it, to the northward, a flat rock that may be seen five leagues. I made the island to be in lat. 22° 22′ S., long. 171° 35′ E., by an excellent chronometer, (No. 729, Barraud). Mention is made by Captain Fearn, and in the charts is also laid down a rock to the northward, which may be seen five leagues. No such rock is in existence. At sunset we saw from the tops the Hunters Island of Captain Fearn, bearing E.b.N. $\frac{1}{4}$ N. Centre of St. Matthews at the same time W. $\frac{1}{2}$ S. At a distance, say twenty miles the island certainly appears as two, one a peaked rock, and the other part flat. Seen at a distance, this may have caused St. Matthews to be represented with a flat rock near it to the northward. If this is not the case, the flat rock has disappeared either by volcanic or other means. There appeared a reef round the south and east ends of the island, at about half a mile from the shore, the sea breaking very heavily on it.

The 25th, 26th, and 27th. Experienced a strong S.E. trade wind, and during the three days ran under single reefed topsails 550 miles, steering for Mitre Island. On the 27th we were in lat. by Mer. Obs. 13° 59′ S., long. by Chro. 170° 41′ E., and on the 29th, at noon, lat. 12° 24′ S., long. 170° 56′ E., Chro. We had a current from about N.b.W., setting us eighteen miles to the southward.

Mitre Island appears like two separate haycocks when seen from the eastward, both of the same apparent height; but the one to the south-

ward is more rugged than the other. It is laid down on the charts thirty-six miles east of its position, according to my observation, and also to Norie. Norie's chart makes Cherry Island twenty miles of longitude *east* of Mitre Island, whereas by Horsburgh it is twenty miles *west*, which latter is correct. In the charts, Cherry Island is laid down west of Mitre Island, and yesterday evening we saw Cherry Island from aloft, bearing about north-west of Mitre Island. On the 2nd April passed a piece of cocoa-nut, drifted probably from some island eastward of us, as we have been set to the westward about twelve miles per *diem* some days past.—4th and 5th. Very warm weather. Moderate east winds. Sea smooth. Ship under every stitch of canvas that can be set. Yacht-sailing. At noon this day our lat. is 4° 26′ S., long. 165° 13′ E. We are 2650 miles from Sydney.—6th. Much lightning last night; squalls and rain. Thermometer at noon 85′ in shade, 98′ in sun. Current to-day and yesterday from the east, nearly one knot per hour.—7th and 8th, the last day tremendous squalls, with very heavy rain and lightning. Lat. 8th, observation, 1° 16′ S., long. 162° 22′ E. Shanks Island sixty-four miles N. 37 E. At 1 P.M. light east breeze; made all sail; still a current.—9th, calm; thermometer 86° in shade, 112° in the sun; at noon, lat. 1° 7′ S., long. 162° 22′, having made nine miles these last twenty-four hours. No current this day.—10th. At noon, observed lat. 0° 9′ S., long. 162° 15′ E. Shanks Island E. by S. ½ S. forty miles. I endeavoured to sight the island, it being a prominent one in the charts, but the winds, calms, and currents prevented me: to this day we have ran 2,966 miles from Sydney.—11th. Noon, lat. observed 2° 0′ N., long 161° 28′ E., Ravens Island N.W., 320 miles.—12th and 13th. During the day fine steady breezes from N.E. to E.N.E., but very squally at night. This morning, at one o'clock, had a very severe squall with shifts of wind, very heavy rain, vivid lightning, and sharp loud thunder; it did not clear up till nearly four o'clock: the ship under bare topsails only. The wind first at N.E., then east, then flew round to south, and gradually back to N.E.—14th. Passed several cocoa-nuts, and a piece of drift wood. At noon, anxiously looking out for the islands, as we are nearly on the spot in which they are laid down. Latitude observed 5° 38′ 30″ N., longitude 157° 39′ 45″ E. At ten minutes past noon saw them from the foreyard right ahead bearing north-west, distant ten or twelve miles; at six they bore from N.W. b.W. to E.N.E.: at eight saw a light on the Western Island; no doubt they are inhabited. They are very low islands, and all covered with trees, which we took for cocoa-nut trees. Sailed past them at about three miles distance. They are marked in the chart as being seen in 1794, and their real position is about ten miles north-west of that marked in the charts.

15*th*.—Set in towards night with very dark gloomy weather, squalls and torrents of rain, sail reduced to topsails and foresail; continued till noon the 16th when it cleared up, and we saw the sun. Observed lat. 8° 22′ N., long. 155° 39′ E. This afternoon the north-east trade set in; strong breeze. 17th, the sun vertical. 18th, ran 205 miles the last twenty-four hours: Guaham (the Ladrone Islands) distant 395 miles. 20th, saw the island of Guahan or Guam: at noon latitude observed 13° N., longitude 145° 13′ E. In the charts this island is

placed thirty miles west of its true position. Norie gives the longitude 144° 56′, which is about correct. Guam is the largest of the Ladrone islands, which name was given them when Sir Francis Drake touched there in 1579, on account of the thievish practices of the natives. Philip 2nd., king of Spain, took possession of them in 1565, and in the reign of Philip 4th, they were called the Marianne Isles, in honor of his Queen Marie Anne of Austria.

These islands were once populous, but Guam is the only one now inhabited. An epidemical sickness having carried off a great number of the natives in several of the isles, the Spaniards very cruelly removed the survivors to Guam to supply the numbers that had died there. At the time of Commodore Byron's voyage, the ruins of their habitations were visible on Tinian, though overrun with trees and bushes. Guam has a very pleasing appearance, and the islands of Tinian and Taypan are described as very beautiful, and abounding in limes, lemons, cocoanuts, and bread fruit; also with wild cattle and hogs. The breakers extend out a long distance from the point, and break very high.

22*nd.*—Passed over the spot where Ansons Islands are laid on the charts: the horizon very clear, nothing in sight. These islands cannot be in existance. This establishes in one point, the remark of one of our first navigators, "If an island, or any shoal rock, or reef, be laid down as doubtful, steer for it direct; by doing so, if the position is correct, you establish the fact, if not you evade it;" and experience has shewn that, in ninety-nine cases out a hundred the latter is generally the fact. Cape Espiritu Santo, distant 775 miles on the island Samar, (one of the Phillippines.)

25*th.*—Sun again vertical at noon. 26*th.*—Dead reckoning latitude 12° 50′ north, longitude 129° 7′ east.

27*th.*—Saw Cape Espiritu Santa; altered course, steering for Embocadero, or Straits of St. Bernardino.

28*th.*—All night running for the land near the Strait, but was much deceived by the charts, there being a discrepancy of about twenty-five miles with my observations and chronometer. At noon St. Bernardines Island west, distant four miles; and the Baliquartro Islands, S.W.b.S. Noon; latitude observed 12° 47′ north, longitude 124° 40′ east, having a fine leading breeze I determined on entering the Embocadero, hoping to clear the south end of Luzonia, and get a good sight of Ticao before dark. The coast of Samar is bold of approach, as well as Luzonia; but the latter as you near St. Bernardines Isle is much higher. The centre of three high hills is peaked, and very high. There is a small islet detached, and to the northward of St. Bernardine. We passed the eastern side of the island, and found the passage very open and safe; stood on for the south-east point of Luzon: off this point are several small isles, which appear to be connected with reefs, the end of the southernmost one is bold, bluff, and woody: we passed at half-a-mile distant. After you are to the southward of it, you will see to the westward a very remarkable low flat rock, quite white, and but very little elevated above the waters' edge, (it appears black if the sun is shining on it,) and another pyramidal rock of a singular shape, close to the point. The islands to the south-east, Dalupere Cabul, &c. do not appear to be laid down correctly. I imagine there are one or two

not marked on the chart, perhaps from not having been accurately surveyed. On the north-west point of Cabul there is a reef which extends out half a mile, but by keeping near the south point of Luzon you cannot come near it. We did not see it till after we were west of the island.

On entering the Strait between Bernardine and Baliquartro, there are several small detached rocks, shewing their heads above water, close to Baliquartro Island. At 5 P.M., from our position, the north point of Ticao bore W.N.W.; the east point W.S.W.; Cabul and the Naranjos E.b.S.; south point of Luzon, N.W.b.W.

During the night the wind very light and baffling, steering northward between the Luzon shore and Ticao: several fires seen on the island during the night, a very large one at, or near Port Jacintho. All the islands in the strait have a very pleasing appearance, and are covered with trees and verdure from their summits to the waters' edge. The east side of the island Burias is rather barren and rocky, but covered with bush. Every island appears inhabited, and all have the same bold and lofty character. Off the north-west end of Ticao are several isles, but they are quite bold, and no apparent hidden danger. Keeping the Camarines Volcano N.N.E. will take you clear of the south point of Burias. The island of Sibuyan is a very high mountain with a lofty peak, which readily distinguishes it from any other, and can be seen a very great distance, it is the highest land among the islands of the straits. Romblon is a small island, not very high, west of Sibuyan. Tablas, a large long island, the summit mostly table land from one end to the other; there is a small peak at the east end, but not high. Maranduque is a large island with a very lofty peak on its southern extremity, which is barren, rugged, and rocky, to the waters' edge,—a detached rock south of it. Banton is a tolerably high and bold island, with a small peak; the channel between Banton and Maranduque is not more than seven or eight miles at the most. Bantoncilla, south of Banton, is a smaller island, more level at the top; there is a detached rock to the westward of these two islands, nearly on a line with Bantoncilla, (west of it.) The Hermanos are two small flat islands, and very much alike. Campo is a tolerably large island and appears rugged, it is westward of the Hermanos. The Vineges are three small islands westward of Port Mahanguin, they stand much further from the land than as marked on the chart.

May 1*st*.—Passing the Silonay Islands, I saw a reef fronting the two southern ones on the east side, on which the water breaks. When abreast Isle Verte, on the south side, we experienced a most extraordinary rush of current or tide; though it blew a very fresh breeze, it was with great difficulty the ship could be steered in it, but it only lasted while passing the island. The surface of the water was in complete foam, particularly inshore, and much resembled a large reef. At the back of Batangas Bay, is a mountain of which, from its singular shape, I took a sketch. This part of the straits is most interesting for its scenery and splendid views;—the numerous and gigantic mountains, the low land and islands, covered to the waters' edge with trees of tropical foliage, the volcanic appearance of the mountains, the beautiful small coves and sandy places we passed sailing along, (particularly near

Point Galera,) often as near as a mile; numerous feluccas, schooners, and boats, sailing about with smooth water, and a lovely day, made most imposing picture.

On Point Galera is a hut with a flag-staff and signal-yard, and some houses on the beach, in a small cove below it. On the morning of the 2nd of May, found we had been set to the northward with a strong current,—all hands at their stations during the whole of the night working into Manilla Bay.

(To be continued.)

TRINIDAD IN 1803.—*By the late Capt. G. H. Columbine,* R.N.*

(Continued from p. 400.)

No grants of land have yet been made by the British Government.† It would have been useless to attempt any improvements in a colony, of whose possession we were by no means certain. The only improvements, therefore, which have taken place since the capture of the island, have been made principally by Englishmen, buying and settling grants of land of which Spaniards had got possession, but who were too indolent or too poor to cultivate.

There are several small rivers on the west side between Naparina and Point Icaque, big enough to admit canoes for some distance.

* Erroneously stated "E. Columbine" in our last.

† The state of Trinidad, nearly forty years ago, as described by Captain Columbine, forms an interesting contrast to the activity which is prevailing in some parts of that fine island, at the present time. On the subject of emigration to it, we find the following in a recent number of the Naval and Military Gazette.

"Emigration from the smaller colonies to Trinidad and British Guiana continues to a great extent, and vast numbers are pouring into these fancied el-dorados, which, like the 'Irish cows, have long horns at a distance.' Agents are now established at Barbados, Nevis, St. Kitts, and Anguila, for the purpose of procuring labourers, nominally by fair and open means. That the negroes should travel when and where they please, that they should be free to go and come as the Patlanders in harvest time, now a day, nobody will deny; but we deprecate false hopes and falser promises being held out to these poor ignorant people by mercenary crimps. We deprecate kidnapping, or that the youthful, healthy, and labouring branch of a population should be surreptitiously drawn off from their native colony, while the old, infirm, and destitute, remain burthens upon the community. We deprecate smuggling debtors away to the detriment of their honest creditors. We deprecate bursting through and rending asunder the ties of kindred, by cajoling away fathers from their young and helpless families, brothers from sisters, children from parents. We deprecate inducing a peasantry to abandon the homes of their forefathers, or transporting a population from wholesome, dry, and salubrious islands, to work and perish in swamps and fens, in mud and miasma. We deprecate the inquisitorial system, which suppresses, cuts off all correspondence between the emigrants and those they have left behind; above all we deprecate that un-English-like principle of one British colony elevating itself upon the downfall of its elder neighbours.

A party of emigrants engaged a vessel to take them from Demerara to Montserrat and St. Kitts, for the purpose of passing the Christmas with their relatives. The master of the vessel was a Frenchman, and the mate (an Englishman) observed that during the day, instead of steering for their destination, the vessel's course was shaped for Porto Rico. At night the mate altered the course, which greatly enraged the captain, who threatened to shoot him; suspecting foul play, the mate and a few

Near Point de Brea is the wonderful pitch lake, of which a copious description is given by Dr. Anderson, in the 79th volume of the Philosophical Transactions.

Point Icaque is low, and its soil sandy. It has a very fine natural savannah, nearly three miles long, and upwards of a quarter of a mile in breadth, which might be made use of to contain a supply of cattle for the army and navy. Near Point Icaque* are two remarkable ebullitions of the earth. In the midst of woods, thick and almost impassable, are two circular spots about 120 or 160 feet in diameter, perfectly clear of any vegetable production, and exhibiting a boiling up of mud cooled down into the form of the top of a loaf, the highest central part being several feet above the edges, and above the soil of the surrounding woods. We walked over them, but from the shaking of every step, we seemed only to be treading on a thin dry crust; indeed there have been instances of people breaking through this crust, and instantly sinking so deep into the softer wet mud beneath, as not to be extricated without great difficulty. Everything about them is salt,—the trees and shrubs which surround them are all marine plants. It seems probable, that they are occasioned by the action of salt water, heated by subterraneous fire, of which there are many marks on the coast of Trinidad.

The north-east coast of Trinidad is bounded by rocky shores, and steep mountains thickly covered by wood close down to the sea, which breaks in a heavy surf along the whole extent, and renders landing impossible except at a very few places. Between the Bocas and Point Chupara there are some large bays, but so much swell sets into them, and the wind is so uncertain and light close inshore, that it is dangerous to anchor a ship in them, except in Escouvas and Marracas. There are two small batteries at Macaripe; a cove at the north end of the fertile valley of Cueca.

Chut-deau is a very small sandy cove, deriving its name from some little streams of water, which as they descend from the hills, are projected over the rocks in various directions. We found a party of fishermen here, catching King-fish, and salting them in barrels for the market of Port Spain. A path, scarcely practicable, leads from hence across the mountains to San Juan.

of the passengers seized upon a boat, and ran for Montserrat. The captain brought his vessel to St. Thomas, and attempted to sell the cook as a slave, but upon the Danish authorities discovering it, the vessel was seized, and the captain lodged in the fort, where he now remains for trial.

The American labourers who have come voluntarily to Trinidad and located themselves there, are a very superior race of negroes. They frequently perform by 10 o'clock A.M. a task equal to an entire day's labour in the slavery time, and then undertake a second or third task, thus earning 6s. 6d. for one day's labour: their example is stimulating to the other negroes, who still having the dregs of slavery in them only work from dire necessity, or as the "maggot bites." Trinidad is rapidly rising in the scale of our West India colonies, it possesses vast internal resources peculiar to itself, but its greatness will not be increased by needy adventurers speculating in properties without the means of meeting their engagements, or by agents trepanning into the island under false promises a promiscuous peasantry from the other colonies.

* The pitch lake; the ebullitions at Mayero through the sea; the tar at Guayaguyare.

L'Escouvas is a sandy bay, on one of whose points Sir R. Abercrombie placed a few guns to protect coasting vessels from French privateers. The sandy shore on the east side of it is thickly wooded almost close to the sea, in a very picturesque manner, with several breaks, projections, and retirements in the woods, filled by long winding slips of land, and varied by high rocks, and small rivulets mingling amongst them. But scenery which in Europe would be highly admired, is in Trinidad regarded with indifference, even by the very few who can approach it. The eye is satiated with woods, and the intense heat of the climate, the stings of musquitoes, and the bites of sand flies, divert the mind from the pleasures of the eye to the suffering of the body. The valley of L'Escouvas is extensive, with a good stream of water in it, a considerable part of it cleared, and some laid out in sugar. It is the property of the late Spanish governor Don Chacone, whose merit and friendly disposition towards the English, make it a subject of regret, that the persecution which he has suffered from French influence for the unavoidable capture of the island, has rendered his funds quite inadequate to the expenses of so large a plantation in its infancy. It is consequently in a very indifferent state. There is a sort of road which mules can pass from hence to St. Joseph, but is very bad, passing over an opening in the ridge of the mountains 2,000 feet high; the summit of it has been aptly named La Fenetre; from thence the traveller may view to a considerable distance, both courses of his laborious journey, and will doubtless wish for the conclusion of its difficulties. A mile to leeward of L'Escouvas is the deep bay of Maraccas, open to the north, but affording more shelter than any on the coast; the land is level and cultivatable for a considerable space, and is the property of a captain in the Spanish navy. Some progress had been made in planting it, but it is now nearly gone to ruin. These two settlements are the only ones which the north coast seems capable to afford, as far as the quarter to Toco.

From Escouvas to Toco there are no inhabitants; the coast is chiefly rocky and high, with a few small bays, which generally have a small river in them, but the surf is so heavy, that these bays are scarcely more accessible than the rocks. The only landing places we could find were at Rio Grande, Petit Matelot, Troubouillris, and Paria Bay. The perseverance and good swimming of Mr. Coulson, the gunner, enabled him also to land at Macapou and Chupara roads, but not without having the boat repeatedly upset, and himself and people almost drowned. I found also a very small circular cove about half a mile to the north-east of Madamus, where a drogher or two might lay in smooth water with the greatest security, being within the breakers. It is closed round with steep rocky cliffs, and did not appear to have any communication with the country; it has a small stream of fresh water in it.

The rivers in this place are Rio Grande, Tiburones, Madamus, Paria, Macapou, and the Chupara, but except the latter, they are not worth the name of rivers; their depth for a small boat seldom extending three-quarters of a mile, and their mouths being totally barred up. The vallies through which they run are contracted to a very small space by the neighbouring mountains, and there can be little hope of

forming any settlement hereabouts, from the mountainous nature of the land, and the vast difficulty of landing at any of the few spots which are cultivatable. Was it not for this last objection, the valley through which the Chupara runs navigable for boats upwards of two miles, would afford some fine situations.*

It is very difficult to land at Rio Grande Bay: the early part of the morning is the best time, before the sea breeze sets in, and the boat must be hauled up. The only part of the river which seems navigable, extends about 2,000 feet to the eastward; and so far it has water enough for a canoe, and is fifty feet wide. At this distance it turns to the south, and becomes a mere mountain stream, running over rocks, flat shallows, and through small deep pools; but a French mulatto whom we found fishing here told me that in the rainy season an immense flood poured down, and when its first violence was over he could go up the river more than a league. It seems to me very doubtful whether it could ever be used to bring bulky produce down it, in case the banks should hereafter be cultivated; its bed is full of rocks. The mulatto had with him six or seven Indians catching turtles, but by no means fatiguing themselves in that pursuit. Their indolence is extreme, we found them sitting on their haunches, and after being on shore nearly three hours we left them in the same posture.

The land to the south-west of the river is not mountainous for some distance; it is moderately hilly, and a considerable part is level; apparently it is a situation which would prove a valuable estate. We saw several trees covered with large purple flowers, twining round the liens or long fibres, which grow downwards from the branches, and hanging about them in clusters quite down to the ground. I left the ship at Rio Grande, and went with the boats and tents to Toco, to survey Point Galera. The first part of our course lay round a high point, which the current renders at all times difficult, and sometimes impossible even for canoes to pass. The inhabitants of Toco quarter call it Sans Souci, thereby meaning, that when they have passed this point, they are at ease about the rest of the passage.

The whole coast is hilly, thickly wooded, and bearing great abundance of mountain cabbage:† these trees appear much like a cocoa-nut tree, and often run eighty or one hundred feet high. The whole tee must be cut down to get at the cabbage, which is in the centre of the foliage at the top, and is an excellent vegetable. A heavy surf breaks on the whole of this, the few landing places being only small openings among the breakers, and these are not practicable at all times. From Toco to Point Galera the land is of a moderate height, tolerably well inhabited, and producing some cotton. In April, when we were there, every bush swarmed at night with large fire-flies: they had two lights at their heads, and one under their tail, and furnished light enough clearly to illuminate the wires of the telescope when held to its end for that purpose. This is the state of the north coast, and of course its produce must be very trifling, It serves, however, as a good barrier against

* Perhaps a road might be made to it, without any great difficulty, from a small sandy bay under the lee of Point Chupara.

† Called by the French Chou Palmiste.

an enemy from L'Escouvas and Marracas, the best places for him to land at. The road to Port Spain is so steep and rugged, that he might easily be repulsed; he would have a ridge of 2,000 feet high to pass over at La Fenetre; and his landing at Macaripe would expose him in his march thence to Port Spain to great, and perhaps insurmountable difficulties.

The Ulysses being under the necessity of going to refit at Antigua, I left her by the commodore's permission, and went on board the Advice brig, one of her tenders, in order that no time might be lost in carrying on the survey of the east coast. Turning Point Galera which is low and rocky, with a constant heavy sea breaking on it; at the distance of two miles to the south-west is the little settlement of Cumana, consisting of three or four good plantations, pleasantly situated on land tolerably even and rising with a very gentle ascent from a sandy bay, which always affords good landing, although quite unsheltered, and as much exposed to the east as the rest of the coast, along whose whole extent, except at this spot, a tremendous surf breaks. I am totally at a loss to account for this exception, as the sea is not previously broken by any range of rocks, nor by a long extent of shoal water, there being nine fathoms three-quarters of a mile from the shore. This place is wonderfully fertile, sugar, cotton, coffee, indigo, rice cocoa, and tobacco, grow with little difficulty to the planter. Very large sugar canes are found wild in the woods, near any path which the Indians have used, growing to a vast size, without any other planting than throwing down the pieces they take for chewing.

From hence to Point Galera the coast is uninhabited, very rocky and savage, with one small landing place, in a cove within Point La Foret, where the Indians once had a small settlement, but the unhealthiness of the place made them abandon it.

There are two villages of Caribs in this part of the island, one at Toco and the other at Cumana, but their numbers put together probably do not exceed 300, and they are on the decrease. Their loss will not be felt, their indolence being extreme; the greatest part of their time is spent swinging in their hammocks, which the slavery of their wives enables them to do, as all the work is done by the women, planting their bananas, getting shell-fish from the rocks, and cooking for their lazy husbands. Sometimes, indeed, the men will condescend to go out in their canoes fishing, and even take the trouble of going to Port Spain, but it is not very easy to get a boat's crew of them for that purpose, as they find it less troublesome to depend for their victuals on the labour of their women. These we repeatedly saw passing our tents with great baskets of shell-fish, supported on their backs by a band passing over their foreheads; men sometimes with them but never sharing their labour. Very few of either sex have any covering, except a small bit of cloth before and another behind. The women make use of their lower lip for a purpose to which it does not seem extremely well adapted, namely to stick pins in; they are put through holes in the lip and hang by their heads, the points being outward, and if wanted are drawn out by the teeth with great readiness. But their principal finery consists in hanging round their necks as many strings of beads as they can get. They have a custom also of tying narrow bandages of cotton as tight as

possible below the knees, and above the ancles. They never smile on any occasion, and seldom speak, except when animated with vico, a strange beverage which they make by putting all the rum they can get into a quantity of banana juice, and cocoa-nut water. Upon the whole, I think them the most useless, disgusting wretches I ever saw. Nor are they so harmless as they are generally supposed to be: —One night whilst we were at Toco, a large piroque manned with these people, and bringing a French lady, her neice, an English gentleman, and a negress from Port Spain, was wrecked here, and all the passengers drowned. It seems that the chief Carib supposing them to be asleep, determined not to neglect an opportunity so favorable to open a trunk and rob them of some money. But Madame Gaudet being awake, he leaped overboard, and calling his people to follow left his passengers to inevitable destruction amongst the breakers which there lay more than a quarter of a mile from the land. There can be little doubt but that the Caribs might have saved them all, as they got on shore themselves without injury, and brought away one of their own people who was blind, besides committing the barbarous mockery of putting the poor negress upon a rock and bidding her wait there until they should return for her in the morning.

From hence we are not to expect to find any inhabitants, not even a Carib, till we get to Mayero, about thirty miles to the southward.

July 16th.—Sailed to Balandra to survey it: this is the nearest landing place to the south of Cumana. It is a small bay, not deep enough to shelter the brig; but sufficiently so for schooners and droghers. The trees grow so close the water that when the tide is up, their branches project over it. But this is by no means peculiar to Balandra, it is common to all the sheltered shores of Trinidad, and in some places, as at Cumana and Mayero, the trees overhang the sea, in full exposure to the course of the trade wind. The next day the surgeon who had remained with Mr. Chanier, a planter at Cumana, to afford him some medical assistance, joined us. He gives a dismal account of his journey through the woods, which took him four hours to perform on horseback, although its length in a straight line is only six miles. One place he was obliged to ford breast high.

In the evening anchored at Salibia, a kind of bay where a small vessel might be tolerably sheltered by lying within the little island. Landed in smooth water near the mouth of the river, the entrance of which is very picturesque. The first reach is about 600 feet long, and 150 feet wide; its banks covered with magnificent trees, whose branches sweep the surface of the water, and diversified at one part by a lofty cliff breaking out through the woods. The west point abounds with flowering trees, and shrubs most beautifully intermixed with a profusion of lime trees;* and even the sand is overrun by long creeping plants and flowers.

Salibia† is at the foot of the range of mountains which run along the

* The common size of the limes we gathered here was seven inches in circumference.

† From Cumana to the banks of the Tompire, the land is very fertile, but from thence to Salibia it is not remarkably good. A plantation was once made at Balandra, but abandoned for this reason. The rivers Balandra, Tompire, and Salibia are not navigable for a small boat above a quarter of a mile. The mouths of the two latter are completely barred, and the Balandra nearly so.

north coast coast of Trinidad: here ends the rocky quarter of Point Galera, and from hence to the south, we see as far as the eye can reach a long sandy shore, a vast extent of land apparently level, and of moderate height; and a few distant insulated hills rising out of the plain, the whole covered with forests. The sandy shore is Patura bay, about ten miles long, ending at Manzanilla point, but the surf is so heavy along its whole extent, as to render landing totally impossible on any part of it,

The Oropuche, a considerable river, empties itself about the middle of the bay, but is quite inaccessible from the sea, except to the Carib canoes in fine weather.

July 19th.—Anchored on the south side of Manzanilla point, abreast of some small islands, within which I hoped to have carried the brig, but the boat being sent to sound, found the water too shoal. It is, however, sufficiently deep for any vessel not drawing more than ten feet water; and although small, it is the best harbour on the east coast. When the fertility of the east coast is more generally known, and the land there shall be disposed of by government, this little harbour with some small improvement will afford droghers sufficient shelter both from the sea, and the enemy's privateers; and the point itself is well adapted for a small town, and custom-house, which sooner or later must be established on this side of the island.*

We found on the shore a Carib wigwam, and as it was of a better construction than usual, having a complete roof, I determined to occupy it during the time that my survey of the contiguous coast should detain me here. They are called by the Caribs, ajoupa, and generally consist of nothing but a small sloping fence made of branches of cocoa-nut trees, and opposed to the wind. Under these the Caribs live whilst in the woods in search of game, spreading upon the ground for their beds the large fibrous roll, which like a thick cloth infolds with many turns, the fruit at the top of the mountain cabbage tree. The situation of this is very beautiful. A small spot has been cleared for it amongst the trees which skirt the shore, some of which nearly close over and defend it from the sun. In front the sea, bounded at a small distance by a few rocky islands, approaches our hut within a few feet at high water, leaving at its ebb a fine hard sandy shore. Close to our left is a small stream, and on both sides of us are a great number of flowering shrubs, inferior only to those at Salibia. Our greatest inconvenience arose from the want of good fresh water, with which we were obliged to be supplied from the brig. The next day, I set out with Mr. Coulson and two men to explore the coast, from hence to the river Oropuche; an Indian path through the wood on Manzanilla Point led us to the long bay of Patura, which we found nearly a straight sandy shore, occasionally interrupted by sharp high points of land, projecting so far into the sea that it was necessary to pass over them,—a laborious effort to us, as we could seldom find the paths, and rendered still more so as we had not brought any water with us, trusting always to find a supply from some stream or

* It was once intended to have built a small town at Mayero, and ground was allotted, and laid out for that purpose. But Manzanilla is far preferable, as it is more central on the east coast, and as small craft can easily be protected there; which they cannot be at Mayero.

pond. In this, however, we were completely disappointed, and at noon when we gained, after arduous climbing, the top of the last cliff, I found myself so much exhausted, and my thirst so extreme, that I determined not to proceed any further, but to stop under the shade of a tree till the return of evening should make walking a little more tolerable. The Oropuche too, the object of our search, was still at a considerable distance, but Mr. Coulson and one of the men, thinking any difficulty worth encountering to alleviate their thirst, proposed going forward to the river, distant as it was for that purpose. I waited some hours in vain for them, and on my return missing the paths again, I was extremely bewildered amongst bushes, and high vegetables of every kind, so closely interwoven that the only possible chance I had to extricate myself was by crawling over the top of the vegetable mass; the fatigue I suffered is incredible, for a considerable length I never saw or came within many feet of the ground. It was with great pleasure, that after a few hours, I found myself at home again in the wigwam. The gunner and his companion lay on the beach all night. They had reached the Oropuche, but found it salt!

(To be continued.)

IMPROVEMENT OF THE PORT OF BRISTOL,—*with reference to a haven at King Road.*

A HAVEN *may* be formed by solid piers at King Road, that shall afford the required facility for landing passengers, &c., from steamers, at all states of the tide and in all weathers, in one of the bights eastward of of Portshead, without fear of any greater degree of deposit taking place than at the spot in its present uninclosed state; and this I shall endeavour to show in the course of my reasoning upon facts, past, present, and which may, from those, be anticipated for the future.

It may be proper to state, that in this matter I am perfectly disinterested, unbiased, or prejudiced, and if I propose a particular plan, I do so from the conclusion, I have arrived at, in taking a comprehensive view of the whole matter, and not from self-interest, partiality or other view than what may spring from a desire to see the locality to which I have been attached from childhood, rising to that importance which it appears to be entitled to from the natural resources which surround it.

The pivot upon which the consideration turns is the amount of deposit, as far as the physical circumstances are concerned; but the great obstacle to improvement seems to be a want of funds,—there is indeed no deficiency of monied men in and around the city, but if we were to judge from the past, we might imagine that there is lack of enterprising spirit among the citizens,—party spirit appears to be on the decline, but a Liverpool or Newcastle spirit is absolutely required for advance. The dock dues are a bar to increase of maritime traffic, many of the shareholders are at a distance, and care nothing about the prosperity of the place, further than that of receiving their dividends; they are

willing to part with the concern but will not agree to the price offered, and here the matter rests at present. To commence with my reasons for my first assertion:—

1st. The physical features of the land attest plainly enough that the whole level on either side of the river Avon, which now forms a minor Delta, was, at a remote era, covered with water, and a fine secure bay existed south-eastward of Portshead. I do not know to what extent the land alluded to has been advanced outwards within the memory of man, or if any record or tradition exists on the subject; but conclude there must be, as there is a space at the present day some distance from the strand, called the "old sea wall."

The process no doubt, unaided by artificial means, is very slow, but is one of those certain changes among others which nature is pursuing over the face of the earth; and it requires no great depth of hydrographical knowledge to perceive, that in due time the channel between the level tract spoken of, and the bank called the Welsh Grounds, will be considerably narrowed, and it may be as a consequence, deepened, but centuries must pass before such a change can be completed. Hence we may expect, that the embouchure of the Avon will, in like manner be advanced outwards, and not improbably altered in direction, for it is not unreasonable to believe, that the entrance once lay as high up as the spot where the powder magazine is placed, or at the inner extreme of the sand stone cliff of Hung Road, under Mr. Bright's seat of Ham Green, on the Somerset side; and that above that, in some parts, the river was much wider than at present, having a deep creek or pill, (running up the dell or more properly ravine, up to Blaze Castle,) where docks were formed, and known by the name of Sea Mills. In this creek the Roman galleys were moored, but in the present day there exists merely a small stream called the Trim, with water sufficient to float no larger vessels than a coracle. This particular change may serve to show the amount of work performed by the natural agencies in a given time, the period elapsed being more than eighteen centuries.

2. The caution judiciously thrown out by Lieut. Claxton, with respect to meddling with such a river as the Avon, is a monition which the conservators would do well to bear in mind. If piers or havens should be erected within the entrance, there is scarcely a doubt but the navigation of the river would be interrupted, or greatly deranged; but it is hardly possible that any competent marine engineer would recommend such works. A very cursory view will serve to show, that the navigable channel for large ships in the course of the stream up to Bristol, has been narrowed by deposits on the banks, notwithstanding the sweeping effect of tide, and the scouring process of freshes at low water. Artificial alterations of the continuity of the banks, often prove a source of evil to river navigation; this is particularly observable at the entrance to Cumberland basin; in this very river mud banks are formed, which from time to time it is found necessary to remove by manual labour. As a looker on, at such times when the "mud larks" were busily engaged in shovelling the slimy matter into the deep part of the channel, it has occurred to me, that they were performing a very injudicious act,—assisting in protruding the side banks, rising the bed, or augmenting the swashway at the embouchure, besides, throwing

away one of the finest manures the farmer could apply to fertilize the soil, which is destined to supply a hungry multitude with the most essential article of food. The annual income which may be derived by the sale of the silt and mud removed from the harbour and river, would perhaps pay for the necessary repairs of the quays, &c. I have also been forcibly struck with the absolute stoppage for some time of the free navigation of the river, abreast of Rownham, when a large and long ship has to be winded round across the stream, in order that her head shall be pointed into the entrance of the basin. At such times I have wondered what could have induced the projectors to have placed the entré nearly at a right angle with the course of the river; this defect, for it is manifestly one, may be partially remedied by cutting away the elbow on which the tavern stands, including the small Coal Camber; some alteration would also be necessary on the other side of the entrance.

3. With respect to the idea of deepening either of the two passages leading into the river, the effect I conceive would be rather beneficial than otherwise, and the navigation be rendered less difficult by selecting the swash-muth, for this reason; it is the most direct. The swash or swashway, is a vast accumulation of deposit at the western channel of the river embouchure; it is divided from the open, or ship channel, by an ait. At present, when the tide admits, it is used by steamers, and even by ships. I have passed over it at 11 P.M. in a steamer, and not in a ship in the morning; and I have seen three or four large ships resting upon it high and dry. For the purposes of navigation, it is, therefore, still available; but if unmolested by the hand of man, we may, not unreasonably, expect that in the course of time, by little and little, this accretive body of alluvion will rise until it joins the level tract of the left bank to the ait, and so block up the passage altogether; but these changes are necessarily very slow, here especially, where the rush of tide and fresh exert their respective forces in modifying the effect of deposit. So gradual is the process alluded to that, although no doubt exists as to changes having occurred in this locality, we are unable, after a lapse of forty-six years to detect any striking difference.

But what is the object contemplated by deepening the swashway twenty-nine feet, as alluded to by Lieut. Claxton? To form a landing place for the steamers within the river's mouth. I hope not. However, if this should be done, the other channel should be partially blocked up, otherwise the mud will again accumulate on the swash, as the current of the stream takes a whim to follow the right bank; and unless great alterations be made higher up, the merely deepening the swashway, would not prevent its following the course adopted by nature.

Lieut. Claxton says that, although all the water even with a nine feet fresh goes out of the right bank entrance, the channel is not deepened; but, the advantage derivable is this,—the channel is kept from being shoaled; precisely the same effect would follow if this even closed, and the other opened, provided the current of the stream be led to it by considerable alteration within the entrance, for it is certain that any obstruction to the free course of a turbid stream would occasion an in-

terruption to its free navigation; the old cry of "let well alone," may with strict propriety be applied to this case.

4. It seems evident from observation that in a tide-way, the indentations in the land receive more deposit than the straight line of the coast, and so in time become filled up. Every seaman knows the reason of this. The water in these minor indentations is generally still, or slight eddies are formed, the main current of the tide rushing past them without otherwise affecting them than that the water will rise and fall. This hydrographical point would seem to confirm my opinion with reference to the still water, that might be expected in an enclosed haven. Now, as to the deposit being greater, on the bights, it is admitted; but the the accumulation would not in my opinion be greater in the haven than it is at present; what the amount may be it is impossible for me to say; all that I can add is, that the curves are filling in very slowly: if any record exists of the soundings within the last 50 or 100 years, it would show the decrease of depth, if any, and consequently the amount of deposit in a given time, and settle the question at once.

5. The bed of the anchorage within the bights from the Avon to Portshead no doubt has been shoaled, and will continue to shoal slowly and progressively outwards; and there seems to be as little doubt that the upper portion of the sloping muddy strand, receives more deposit than the base below low water, in a given time; and that the latter takes a longer period to rise above the surface, than the former to consolidate and become carpeted with verdure; although, perhaps, there may be a relative proportion observed in their advance towards the fulfilment of a natural law. There are no land streams here, except perhaps a brook or two, the curves of which may be turned, which is an evident advantage, and whatever deposit took place would proceed from the action of the tide alone. The current from the Avon is carried off in another direction, and the earthy matter brought down by that river is principally lodged upon the swashway bank, and driven into the estuary; the quantity deposited by the ebb in the still water of the bights must be comparatively small in amount. The process, therefore, is not unfavourable to the erection of a haven eastward of Portshead, and it would be the fault of the conservators if they allowed it (when completed) to be shoaled by the sedimentary matter.

6. The amazing rise and fall of the tide have advantages and disadvantages attached, with reference to the proposed haven. At low water additional shelter is afforded to the south shore anchorage in gales from east, south, and west, and their collateral points; and it also derives security from the effects of northerly winds, from the position of the natural breakwater called the Welsh Grounds. It is true that in lengthened gales of many hours duration, the relief would only be alternating; but still it would be advantageous to a vessel to be fifty feet below the level of the land on one side, and to be shielded by the bank, from the swell on the other, some portions of the twenty-four hours.

Again, if the fall were not so great as it is, and the Welsh Grounds always continued submerged, the probable effect would be a return impression of the swell during strong south-westerly gales, which would press into the anchorage from the opposite or northern shore, and render

it an uneasy riding place; and the impression would probably be felt some time after the cessation of the gale. The first effect alluded to, is exemplified in the lower and more open portion of the Bristol Channel, and must be known to the Pill pilots; this can only arise from the impression imparted to the mass of water pressed over to the Welsh shore, meeting with abrupt resistance and re-acting. We have instances of the second process in the rollers of Ascension and St. Helena, in the South Atlantic; and in the surf at Madras in the Gulf of Bengal.

The disadvantages relate principally to the interruption that would be occasioned in the construction of the piers; and to the great extent to which it would be necessary to carry the viaduct or causeway. The little depth of three or three and a half fathoms at low water for the haven, is favourable on account of the facility with which the massive stones could be laid in their places on the supporting base. Supposing each of these to be six feet in vertical height,—*three* tiers only, would bring the pier up to low water mark, and the superstructure would then be carried on with comparative ease.

The whole of the land side of the level tract is bordered by high land—Lee and Walton Downs, in which there is abundance of stone, as well as at Portshead; and tram roads may be easily made from their base to the shore. The great difficulty would be in fixing a sure foundation underwater: the labour, circumspection, and care, to be exercised to effect this completely, may easily be conceived, whether by means of piling or trenching; according to the nature of the bed, one or the other must be adopted, as the bottom be of mud or of rock; as the bed is shelving, had it been level, massive blocks of stone might be laid without fear of removal from the undulatory action, or rather reaction.

7. There is a point which I shall now advert to, that it is desirable should engage future observation. It is not improbable that, if trials were instituted, it would be found that deposits take place to a greater amount in the winter than in any other season of the year. This is inferred from observations made on the continent, and for a series of years in this country, with respect to rivers. Whenever the temperature of the air draws towards the freezing point, the particles of earthy matter held in suspension in the water, become precipitated, and the fluid appears, not only clear, however turbid it may have been a short time before, but assumes a greenish tint.

I cannot confirm this process in King Road, but it is not unlikely to occur there at low water, as in the Avon, where it may be observed in dry cold weather, invariably, and even when the current is brisk. It may be objected that, as rain falls in greater abundance during the summer season than at other times, there must be a greater supply of sedimentary matter carried into the roadstead by the freshes from the Severn as well as the Avon at that period, and in a given time. This may be true, without however, annulling our inference, as it is not improbable that the greater portion is borne forward by the mass of tidal waters, and hurried on by the impetuous current of the freshes beyond the limits of the anchorage. Much of this matter may be, it is true, brought back by the flood, but much also will be again driven out by the succeeding ebb, and the residue deposited at low water; the amount of

this latter when compared with that which falls to the bottom during dry frosty weather, we infer would be found less. May we not also conjecture that increased deposit takes place during neap tides, from the inertness of the current. These processes should be studied and reduced to certainty; and periodical renewal of soundings should be insisted upon, in all our estuaries.

When we look upon the extent of turbid water in such an inlet as the Bristol Channel, we may well feel surprise at the quantity of earthy matter brought down from the land by the floods; and not unreasonably fancy that the reclamation of this arm of the sea must be hastened by every heavy shower that falls upon the lines of the streams which are tributary to it; but, we are equally surprised when we reflect on the ages which must have rolled by without producing any remarkably visible difference generally. We are indebted, perhaps, to the action of the tides for the delay of the conversion; the solution may lie in the pendulum-like motion of the waters, which being alternate, with trifling cessation, keeps the particles in such a state of agitation that they cannot be precipitated but in small quantities at slack-water; and in some positions these deposits are again harrowed up by the flood tide, which commences at the bottom. In shallow water this will happen, hence it is that the upper portion of a strand receives more accession from the falling tide than the base under water in particular situations.

8. Any apprehension which may be entertained, (and such appears to be entertained by Lieut. Claxton,) of a haven formed with stone piers, encroaching upon the anchorage for ships, by occasioning it to become shoaler, would appear to be chimerical, as it is an axiom in hydrography that narrowing the channel to a certain extent, and under certain conditions (which are not adverse here,) so far from lessening the depth, has a contrary tendency. The increased velocity which would be obtained by the current of tide, in such a case, might not be desirable; but we can have no apprehension of such a result here, with or without a haven, for at least some centuries. The roadstead is now but little short of two miles in breadth, and about four miles in extent from the Avon to Portshead, with from three to nine fathoms water—ample room, which, if not suddenly filled by a mud slip, we may expect will not be materially curtailed for many hundred years to come; although we admit the probability that a generation yet unborn may see it contracted to the span of a moderate size river, with an island of green meadows running along its whole northern extent!

That the whole estuary, excepting narrow lines in the direction of floods of the rivers, is shoaling and contracting, there is no manner of doubt; but the process is very slow; yet, some changes take place in it so suddenly, as to create a great deal of surprise. The cause of these mud slips below water, I conceive to be this: some portions of the bed are composed of slate, and are probably precipitate at their outer extreme, which points down the channel; the accumulation of ages upon these patches, from some circumstance acting suddenly upon the upper layers of slate, they give way and slide, or are launched precipitately into the deeper water below, together with the whole mass of mud, sand, gravel, and silt, perhaps forty or sixty feet in depth, the deposit of hundreds of years; and thus, in the course of time, the channel down

to the portal isle of Lundy—"Bristol's eye,"—will become shoaler and shoaler, until eventually a long low island be formed which shall divide it into two parts.

9. The dimensions of the area of a haven, whether formed by one or more piers is a point which the leaders of the measure would do well to ponder upon before final decision. Some steamers now running are of great length, and it is not improbable that they may reach 300 feet. If the merchants anticipate a prospective increase of traffic, and the transit of passengers, by steamers, on a large scale, of which there is little doubt, they must not fall into similar error, or rather oversight, with respect to the size of their haven, with the projectors of the floating basin at the Hot Wells, who made the entrances to it upon too small a scale, as though the increase of the size of shipping would never occur. The excuse that steamers with paddle boxes projecting like the panniers of a donkey were not then in existence, seems not to have been admitted, as their sailing ships were liable to be jammed, if arriving at a certain state of tide; and such an occurrence is not without example. The evil still remains as a sort of reproach upon the spirit of enterprize of the Bristolians! And here I may be permitted, without being considered arrogant, perhaps, as a lover of my country, to touch upon a point, which to me appears to be of some importance to it.

For the specific object of a steam packet station the merchants of course could not expect any pecuniary assistance from the government; but it might not be impolitic if a money loan, to be returned by instalments, were granted, to make up the deficiency (contended for) for the transfer of the right held by the dock proprietors of levying dues upon shipping, in order to reduce immediately the port charges, which have driven away the foreign trade from the port. I am not aware that any application has been made to this effect, or that it is even contemplated; but it strikes me that if such a loan could with propriety be granted, the government would have no reason to regret it, as the consequence would be a vast increase of maritime commerce, which of course must prove advantageous to the revenue of the kingdom, besides the immediate effect that would spring from it of spurring up the now almost dormant spirit of adventure. There is no question that the elements of traffic are still alive, and that the disposition of the people is eager for its engagement; but the heavy charges which are ruinous to all but the most opulent, act as an incubus to their desire. It is strange, that among the rich men who profess unbounded affection for their native place, not one is to be found possessing sufficient patriotism, and disinterestedness enough, to burst these fetters, and open the road of prosperity to the place of his nativity. The place itself is peculiarly calculated for trade on a large scale, and the obstacle to its fulfilment perfectly insignificant; a few thousand pounds only, it would appear, required for its removal. The capabilities may be summed up in a few words.

10. There are no physical reasons why Bristol should not again take her station as the *second* commercial city of the empire, with reference to the interchange of goods with foreigners by means of ships; and from her proximity to the Western Ocean, emulate, if she did not rival the metropolis.

Every facility is afforded to maritime traffic by the natural features

and resources of the locality; the position of the port is decidedly superior to that of Liverpool; Birmingham being equi-distant between the two, and railways connecting the three. A free navigable channel from the open ocean leads to it, with a directing island and light at the entrance, and good anchorage near it; also one of the finest havens of refuge in the world at the very portal. An excellent roadstead, which may appropriately be called an outer harbour; for the harbourage it affords is equal to that of many ports more immediately enclosed by land. A river navigable for large ships, up to the heart of the city, seven miles from the entrance, with a tide that rises higher than any other stream in the country, except the Wye near its entrance at Chepstow. Extensive docks and quays, and plenty of space for enlargement when necessary. A railroad, which will be completed in June next, from the city to London, besides others. Excellent water, and supplies of all kinds for shipping: markets unrivalled in the kingdom, and the necessaries of life cheaper than in any other large city of Britain, from the absence of manufactories on a large scale; abundance of the best coal (an important article in steam commerce,) close at hand and at a low rate, with hardy seamen, proverbially excellent for their professional qualifications and true English courage.

After this enumeration of its approach, position, and resources, with strict propriety it may be said, that few other places in the Kingdom offer more direct advantages for maritime commerce on a greater scale than the city of Bristol; all that seems necessary to constitute it a first emporium for trade is, the removal of the restriction of the port dues; when in all human probability the spirit of enterprise would be lighted up, and the exchequer be the gainer by some additional millions of pounds!

The trade, at present, coastways is considerable; the greater part of South Wales, Somerset, Devon, and Cornwall, is supplied with goods of various descriptions from Bristol by this mean, and there is a brisk traffic with Ireland. Many fine schooners are employed in the fruit trade, with the Azores, Portugal, Spain, Italy, and the Levantine ports, including Algiers. The African trade is principally, if not wholly conducted by one gentleman, Mr. King, and he, as well as his captains, realize large fortunes. Occasionally many ships are chartered for the conveyance of timber from our North American possessions, as many as six or seven arriving in a week. The trade with Austral Asia is yet in its infancy, but increasing, also with the Mauritius for sugar. The Cape of Good Hope, Brazil, Russia, Holland, France, &c., trifling, with the West Indies large, as it always has been;—East Indies trifling; and principally confined to one house,—Ackerman's. The traffic with the United States is confined principally to British bottoms, very few American vessels come here, solely on account of the dock dues. The wool trade, which at one period was vast, is, we may say, discontinued, but there is a talk of its revival: this no doubt would be immediately the case with Spain, if the port charges were reduced, as Bristol is most favourably situated for that particular commodity, Gloucester being a manufacturing county,—cotton also, there is a hope for,—the spirit of Peter Maze, (cotton manufactory proprietor,) has pointed the direction. The state of affairs at present, is greatly to be regretted by those who

wish well to their country, and to Bristol in particular; but whilst all enterprise is paralized by self-interest on the one side, and want of unanimity and energy on the other, there can be no hope of amendment, unless the fostering hand of government shall sign a release.

It is said to be the intention of the Great Western Steam Navigation Company to try the question, by law, of the right of the dock proprietors to tax their vessel whilst lying in King Road, where she is necessitated to remain, because she cannot be received in Cumberland basin, on account of the entrances being too narrow to admit her entry every time she arrives from her Atlantic voyages. When she does enter the basin, she is lightened sufficiently to admit of her paddle boxes at the top of the tide, being risen above the walls.

If the intention be seriously entertained, the issue would appear to be doubtful, on account of the state of the shipping trade of the port when the docks were formed; the accommodation, it will probably be insisted upon, being at that period sufficient:—the question for decision no doubt will be, whether the dock proprietors are bound to make such alterations and arrangements from time to time, according to the increase of size in ships, and whether the particular class of shipping called steamers, is to be understood as coming within the meaning of the act by which they hold their right of levying dues. The trial, as there seems no prospect of a speedy amicable settlement, would be desirable if only to define the extent to which the dock proprietors are liable; but it is really to be regretted that the matter cannot be arranged amicably, and that party interest should stand opposed to the general prosperity of the port. It appears that the Great Western Steam Company has formed a building dock near Cliff House, on the Bedminster side of the Avon, and has a very large iron steamer in progress, to be worked by a screw; at the same place docks are excavating for the repairs of large steamers.

11. I have just met with the following piece of hydrographical information, bearing on the subject of deposit. "The Phare de Rochelle states, that the sea is receding so rapidly from the bay of Bourg Neuf, that the remains of an English ship-of-war mounting sixty-four guns, which was lost on an oyster bank, called Les Retraites des Œuvres, whilst in pursuit of a French ship, in 1752, is now to be found in the midst of a cultivated plain. In calculating the depth of the water where this vessel struck, with its present level, it will be found that the depth of the sea has diminished at least fifteen feet." This is at the rate of two inches, and a fraction of sedimentary matter deposited in a year; but as the accretion was no doubt principally of sand, not mud, the deposit would go on with less delay, because the gravity of a particle of sand is considerably greater than a particle of mud; besides, the whole bay-gulf of Biscay lies open to the swell of the Atlantic, and the surf, which is principally concerned in the above-mentioned accumulation, is very heavy. The Bourg Neuf lies between the rivers Loire and Garonne, and there are vast accumulations of sand in the vicinity. We can draw no comparison between this deposit and those which occur at King Road; but we may risk a general inference, that as it takes eighty-nine years to rise the bed of the ocean fifteen feet, upon a coast where everything conspires to assist the operation; the elapsed time

necessary for elevating the bed of the anchorage at King Road fifty feet, where circumstances are not in combination for its acceleration, must be very much extended. Two miles and a half is the breadth of the level tract, north and south; its length, east and west, about five miles, and it lies fifty feet at the margin above the anchorage at low water: the period necessary for the accomplishment of such an accession to the land by deposits from the sea must be extended, we imagine, over *thousands* of years. We are perfectly alive to the care which it is necessary for the engineer to exercise in the erection of piers, especially where there are land streams; and have a general mistrust of the efficacy of such structures for remedying the evil of deposits. But here, if it be possible to anticipate results with any degree of truth, in a particular case, after the question is argued out in all its bearings, I should be inclined unhesitatingly to declare that a haven may be formed, between the Avon and Portshead, with *solid stone piers*, without the fear of more deposit entering than at present, and that as such deposit would be but trifling, it could with ease be removed, so as always to preserve a uniform depth within the haven.

12. Arches are recommended to be thrown in the piers, so as to admit the *run* of the tide through the haven to *prevent deposit*. So far from accomplishing such an object, they will defeat it, for this plain reason: that on either side of the stream of tide, eddies and still water would be formed, which are favourable to deposit, and a mud bank would be risen alongside the pier, and the vessels disturbed for the purpose of clearing it away; the vigilance of the port-master must be constantly exercised to counteract this effect. If my argument be correct, the labour of keeping the haven, formed by solid piers, from deposit, would be easy; I very much doubt whether the accumulation over the whole bed of the area at low water, would exceed three-fourths of an inch annually. It is not improbable, however, that the angle formed by the eastern pier outside, may be filled up with mud in a much shorter time than the bank would otherwise be formed. But the advance would subsequently resume its slow working property. This would not be detrimental in the least degree to the haven. Indeed it would have the effect of throwing off the current of ebb to the northward, and so prevent the apprehended rush upon the broadside of a steamer whilst entering the haven, and in this it would be serviceable.

13. The wooden breakwater, platform pier, or floating pier, as it is called, appears to be advocated by Lieut. Claxton, who probably has seen the plan of his friend Mr. Engineer Brunel, which nobody else has. I much doubt the utility of such a fabric, constructed how it may, in an open space of water, which is subject to any swell. In a *river* harbour, such as Hamoaze, it may answer in lieu of a stone pier; but as a shield for large steamers in any part of King Road, it would not realize expectation.

All the direct allusion by Lieut. Claxton to the plan of Mr. Brunel is that the pier will not touch the bottom at low water. Something has since been said about iron tanks. In what way a communication with the shore is to be maintained at all times of the tide, and in all weathers, can alone be conjectured. We may conclude that the ingenuity of the engineer will be put to the test to effect this in a place

where the rise of the tide is fifty feet. If it be by inclined plane, it would perhaps be necessary to throw out a vertical wall about sixty feet high from the shore at Portshead, to which one end of the stage would be fixed by swivel hinges; the other end resting on the float, which must be placed at a convenient distance from the shore to prevent the descent from being too great. Some difficulty would attend the management of this end as the tide rose, unless it be divided and hinged in proportioned pieces: at high water the stage would assume nearly a horizontal position; a chain suspension bridge, however, may be the mode intended to be adopted; either would be attended by difficulties, and require great attention.

It is clear that it would never answer to place such a wooden float or breakwater, otherwise than in a line with the set of tide. There would be difficulty enough in steadying the huge thing in its place even then; and unless great care be taken in fixing the moorings judiciously, it might happen during the coincidence of a furious hurricane and tide in one direction that it burst its fetters and start off, up or down channel on a cruize. Chain cables I presume it would be moored with: now, chain cables have snapped under the extreme pressure of a wind end on; if a hurricane should blow transversely to the length of the float, with the *lifting* action of the accompanying undulation, would the supporting chains hold? Then how is the huge wooden structure (we are told 900 or 1,000 feet in length,) to be managed during the inconvenient rise and fall of the water to the extent of fifty feet? I presume by the supporting chains being eased and shortened in by machinery, according to the particular action of the tide: here will be incessant vigilance required to be exercised night and day, unless, indeed, in this age of invention, a self-adjusting machine be contrived, so as to supersede the manual labour that would otherwise be required.

Let us only reflect upon the effect of a rotary storm which tears up by the roots, the tallest and stoutest elms of this vicinity; the wind veering round ten or eleven points, in conjunction with the run of tide, and then say whether a wooden structure would be likely to answer expectation. At high water, eleven fathoms, whatever sea or swell (I believe never very great,) thrown into the road would pass inshore *under* the float, and the reaction would strike against it, and force the steamers to haul off to save their paddle-boxes and wheels: and of course there would be a suspension of work for a time. It must be recollected that as water will break in more than ten fathoms, the undulatory impression must be felt at a depth considerably below the surface. Icebergs it is true afford shelter under their lee both from wind and sea, but this is occasioned by the immerged portion being six-sevenths of the entire height. Field ice also offers shelter from the sea, but it is only when the extent of surface compensates for want of height, that this occurs advantageously. The wooden float can bear no comparison with either.

There is another point to be considered. It is an objection that perhaps may be ridiculed by the advocates of the wooden pier. In a work of magnitude, where the outlay will be considerable, and the benefits extremely doubtful, nothing should be left to chance. Projects fail principally because *all* contingencies which may happen are disregarded. A

remote effect may prove as disastrous to a scheme, as a faulty mode of adoption immediately after its completion; in fact, it is the wisest plan to weigh all circumstances retrospectively, present, and those which may happen, before decision be given to any project.

It is not improbable that in a few years, whether the wood work were coppered, or ironed below water, sea weeds, (which are here abundant,) muscles also in plenty, and other molluscæ, would accumulate in immense quantities, and in time bring the bottom of the float to the ground, and eventually keep it there, and thus swamp it altogether! If the adherence should happen to be one end only, that extreme would of course be gradually depressed, until finally as the weight increased it dipped like the vertical inclination of the needle!

Supposing the cause of this strange "uptip" to be unsuspected, what a hubbub would be created among the "float sages" to unriddle the amazing phenomenon; if shod with iron it may be argued, perhaps, among the "Phils" that by some unaccountable means the metal had become magnetized, and the pole attracted by the earth's magnetism, so that if it went on increasing, the pier might at last stand on end, and so perpetuate the skill of the fabricator of such a wonderful piece of mechanism!

Others might, perhaps, with more seeming probability conjecture that a huge whale had got jammed under the elevated end, and so depressed the other. But, if it sank uniformily and no longer retained its buoyancy, it might be attributed to the increased gravity of the wood in contact with the water; in fact, to anything rather than the true cause: seriously, however, these appendages must be looked after, whether the pier be formed of wood, metal, or stone, in a quiet place. It seems that on the score of economy a wooden pier is advocated; it generally happens that the cheapest thing is the *worst*, if not altogether worthless; indeed the reverse of economy usually results from buying or paying for cheap articles, the very reason assigned for its adoption seems decisive in its condemnation, if there were no other objections to it.

My gallant brother sailor, Lieut. Claxton, says, "he thinks no fixed pier *can* or *should* be built." Unquestionably if it *cannot*, it would be the height of folly to *attempt* it; but, however, valuable his unprejudiced opinion may be, it is desirable that there should be more than one opinion given on the occasion, especially as the second * objection to solid or to perforated stone piers is, the fear of the haven being soon filled up with mud. I think this apprehension needless, if the conservators do their duty, and compel the port-master to do his. I trust and believe, should the Bristolians complete a haven with solid piers, that, they would never have occasion to exclaim with Anaxagoras upon viewing the tomb of Mausolus;—"How much money changed into stone," but the reverse.

Upon the whole I, free from prejudice or partiality, unbiassed by frowns or favours, no personal interest to serve, declare my opinion to be, that a wooden breakwater pier would not afford proper shelter during very severe weather, at high water, when there would be eleven fathoms; the estuary here being five miles wide. Besides, the accom-

* The first relates to the great expense.

modation for landing passengers at *all times*, and under *all circumstances*, would be extremely difficult of execution. I speak generally, of Mr. Brunel's plan I know nothing, and as Lieut. Claxton says, "nobody else," no doubt it is a very ingenious contrivance, agreeably to the well known talents of that clever engineer.

14. Why not a single pier running transversely to the set of the ebb, (the flood being *non fluens* here,) and a narrow causeway as a landing place down the sloping strand of 1,200 feet; so that the steamers could always lay on the western side, and after landing mails and passengers haul off and anchor in the road? This would not meet all contingencies, detention would probably follow in very stormy weather from the west and north-west, and delay in dark nights in landing and embarking passengers. To expect success, the plan adopted should be on a good scale, and otherwise *complete*; half measures, like second-hand clothes, are worthless, as well as expensive in the end. If the Bristolians have neither the spirit nor the means, or the one without the other, to execute a work of utility, that shall redound to their credit, this discussion is useless. I have heard that Capt. Cooksley, R.N., who lives near Portshead, has given in a plan, with estimates, of an inclined plane alone, which shall embrace the points necessary; but of its merits or demerits I cannot speak; the idea of such a thing as an inclined plane for such a purpose, (I understand it is to be *fixed* and reach the bottom,) seems to my comprehension a little extraordinary; yet he may be justified, for I ought not to prejudge.

E.

On the Longitudes of the principal Maritime Points of the Globe.

By Lieut. Raper, R.N. Sec. R.A.S.

(Continued from p. 380.)

171. ***Alijos*, or *Lobos*, Is.**

Malasp. 1791, Lunars		115° 37′
Vernacci and Echenique, 1807, 115° 38′ and 115° 41′.		
Espinosa adopts 115° 37′, which we follow.		

172. ***Guadalupe*. Id. South Point.**

Malasp.	D.L. *Monterey*,	3° 34′	118° 19′
———	D.L. *C. St. Lucas*	8 24	118 14
Espinosa adopts 112° 1′, or 118° 18′ Gr.			
Capt. of the Tuscan,			118 22
We adopt 118° 20′.			

173. ***Port San Diego*. Punta de la Loma.**

Malasp. Oltmann's II.	117° 16′ 39″
Bauza, a M.S.S.	117 17 34
Espinosa adopts 117° 19′. We shall follow Bauza.	

174. ***Sitka*. Arsenal.**

Bel. 1837. Moon culm. stars, 29 obs. [32s]	135° 19′ 42″
—— D.L. *San Franc.* (Cove) 16ch. 2 passages 12° 53′ 16″	135 17 16
Capt. Belcher adopts 9h. 1m. 8·1s. or 135° 17′ 0′. Which we shall follow.	
The lighthouse is south 78° west, 2,230 feet from Capt. Belcher's Observatory.	

175. *Port Mulgrave.* Point Turner.

Malasp. 1791,	200 lunars east and west,	139° 44′ 37″
	334 do. reflection by Chronometer,	139 44 30

Espinosa in his determinations employs the different longitude from Acapulco, in 61 days, in which the best Chronometer was 45′ in error. He adopts 133° 24′ 12″ (Cadiz) or 139° 41′ 37″.

Malasp. Oltmann's II. 421.	142° 2′ 21″ Cad. or	139 41 57
Bel. D.L. *Sitka,*	4 26	139 43 00

Capt. Belcher adopts 9h. 18m. 52·2s. or 139° 43′ 3″.
Which we shall follow.

176. *Nootka.* Friendly Cove.

Malasp.	D.L. *Monterey,* 2ch. 17d. [1s.]	4° 44′ 7″	126° 37′ 7″
	D.L. *Port Mulgr.* 3ch. [14]	13 5 0	
Bel. 1838.	D.L. *San Francisco*	4 10 24	126 34 24
	D.L. *Sitka*	8 41 30	

Vancouver adopts (Chart) 233° 31·5′ or 126° 28·5′ west,
Espinosa 120° 18′ 52″ Cad. or 126° 36′ 27″.
Capt. Belcher adopts 8h. 26m. 16·6s. or 126° 34′ 9″.

177. *Etches.* Inner Harbour.

Bel.	D.L. *Port Mulgrave,* 13ch.	6° 49′ 4″	146° 32′
——	D.L. *Sitka,* obs.	11 15 18	146 32
	Otherwise stated	11 11 4	

We adopt 146° 32′.

Capt. Belcher obtained a Chronometric difference between Port Etches and Woahoo in the Sandwich Islands, but the result has not been considered satisfactory.

Chinese Intelligence.

The negociations between the British and Chinese commissioners has been broken off a few days the date of the last despatch, Feb. 13th, and hostilities had recommenced, which ended in the capture of all the Bogue forts, thirty in number, mounting 800 guns; the destruction of all the defences and batteries up to the walls of Canton; "taking sinking, burning, or dispersing the enemy's flotilla," in the words of Commodore Sir J. J. Gordon Bremer, who conducted the operations, and on the 18th of March "hoisted the Union Jack on the walls of the British factory."

This intelligence was contained in two despatches from Macao to Calcutta; the first, by the Waterwitch, on the 28th of February, contains the explanation of these extraordinary and eventful proceedings. Keshen, the Imperial Commissioner, had delayed the execution of the treaty concluded with Capt. Elliot, to obtain the Emperor's confirmation. Instead of approving, the Emperor has rejected the treaty, and issued four edicts breathing scorn and defiance of the English, delivering Keshen over to the Board of Punishment (though without depriving him of his command), divesting the Admiral Kwan Teenpie of his button, sending flying orders for the march of 8,000 of his best troops to defend Canton," to subdue and recover the places on the coast," "to exterminate and drive out the English," "for it is absolutely necessary

that the rebellious foreigners must give up their heads, which with the prisoners, are to be sent to Pekin in cages, to undergo the last penalty of the law." The fourth edict clearly betrays the deceptive policy pursued by the Chinese—viz., "To-day, the 11th of February, Keshen has reported that the English foreigners have usurped possession of the batteries, and it is difficult to defend and keep the province. He further reports, in a supplementary document, in which he with intense earnestness begs that favour may be bestowed on the English, &c.," On looking at the report, I am altogether filled with indignation and grief. "The said great Minister, because of the importance of the city of Canton and its granaries of rice, and also because the inhabitants are exceedingly numerous, became apprehensive that commotions would ensue, and made this a cause for temporary expedients, and deceptively acceded to the requests (of the English)," and for the present they have not been surrounded or exterminated." This Imperial Edict continues—"Hasten, then, your consultations and schemes; attack and exterminate. &c."

As it will materially assist in the reading of the following despatches, our present number is accompanied by a chart of the Canton River, a fac simile in lithography of that of the Admiralty, by which the reader will perceive most of the principal places to which allusion is made.

India Board, June 3.—A despatch has been this day received at the East India House, from the Governor in Council at Bombay, dated May 1, 1841, of which the following is an extract :—

The accompanying *Calcutta Government Gazette Extraordinary*, dated 20th ult., has been reached this Government, containing a notification issued under the orders of the Governor-General of India in Council, publishing for general information the details of brilliant successes which have been recently achieved in China, ending in the entire destruction of the defences of Canton, and in the placing of that city at the mercy of Her Britannic Majesty's forces.

Wellesley, off North Wangtong,
March 10th, 1841.

My Lord.—It is with feelings of gratification I have the honour to announce to you, that the forts of the Bocca Tigris, together with every other of the Chinese defences with which we are acquainted, have fallen to her Majesty's arms; the British flag flying on the fortress of Wangtong,* in which is a garrison, and all the other batteries have been blown up and utterly destroyed; and as I am aware of the intense interest which is felt by your lordship, I avail myself of the earliest opportunity of forwarding to you a detail of the events which have led to this result.

On the 20th January, the preliminaries of a treaty of peace were agreed upon by her Majesty's Plenipotentiary, under the seal of the Chinese Commissioner, one of the conditions of which was the cession of the island of Hongkong to her Majesty, and the restoration of Chuenpee and Tycock-tow to the Chinese, together with the evacuation of Chusan at the earliest possible period. His Excellency in consequence requested me to move the force from the immediate neighbourhood of the Bocca Tigris, and, having made the necessary arrangement with the Chinese admiral commanding-in-chief, the forts were

* North and south Wangtong are the two small islands in the Bocca Tigris, off Anunghoy, with a rock between them in the chart.

delivered to his officers, under the usual salutes, on the 21st, and the fleet proceeded to the anchorage off the west end of Lantao island.

Her Majesty's Plenipotentiary and the Imperial Commissioner, having arranged to have a formal meeting off the second bar in the river, on the 26th, I detached the Calliope and Larne, and Madagascar and Nemesis steamers, to the Bocca Tigris, under the immediate command of Capt. Herbert, of the Calliope; a guard of honour, composed of one hundred picked men of the Royal Marines, under the command of Capt. Ellis, R.N., of the Wellesley, and the band of that ship were embarked. Captains the Hon. R. S. Dundas and Maitland, of Melville and Wellesley, together with as many of the officers of the fleet as could be spared, accompanied his Excellency. The party was received with every possible mark of distinction and respect, the troops were drawn up on the ramparts of the forts, and salutes fired from all; a sumptuous entertainment had been prepared, to which the officers were invited, after having been presented to the High Commissioner, and the negotiations proceeded in a satisfactory manner, the particulars of which have been stated by the Plenipotentiary to her Majesty's government.

On the same day I proceeded to Hong-kong, and took formal possession of the island in her Majesty's name, and hoisted the colours on it, with the usual salutes and ceremonies. By the terms of the treaty, the port of Canton was to be opened to the trade of all nations, on the 2nd of February; and as a proof of the sincere desire on the part of the British functionary to evince good faith, I had, at his request, sent the Columbine to Chusan, and an overland despatch, by the hands of a Chinese special messenger, directing Brigadier Burrell and Capt. Bourchier, of her Majesty's ship Blonde, to use every effort to embark the stores and troops, and to restore the island to the Chinese authorities.

The proclamation for opening the port on the 2nd did not appear, and on the 11th the two Ministers again met at the Bocca Tigris, and after a discussion of several hours, on this day and on the next, her Majesty's Plenipotentiary acceded to a further delay, (not to exceed ten days,) in order that the definite treaty might be fairly prepared. I must confess, that from this moment my faith in the sincerity of the Chinese Commissioner was completely destroyed; my doubts were also strengthened by the reports of the officers I sent up to the place of meeting, who stated that military works on a great scale were in progress, troops collected on the heights, and camps protected by entrenchments arising on both sides of the river, and that the island of North Wangtong had become a mass of cannon. These indications being decidedly warlike, I determined to move the light division of her Majesty's ships at once to Macao roads, and proceeded thither myself on the 13th, to confer with his Excellency the Plenipotentiary, and await events. I found that the treaty as agreed upon by the Commissioner and her Majesty's Minister, had been sent to the Bocca Tigris, for transmission to Canton, by the Nemesis, with orders to await an answer until the night of the 18th, the period the confidential person employed by the Chinese Commissioner had named for the purpose. The accounts daily received by merchants and others at Macao from Canton were of the most hostile character, and an edict purporting to be from the Emperor, calling on all his officers to exterminate us, was published, together with a proclamation, the authenticity of which I have, however, been unable to establish, offering 50,000 dollars for my head, and a like sum for that of the Plenipotentiary. On the morning of the 19th, the Nemesis arrived from the Bocca Tigris without any reply, and all doubt was at an end, a shot having been fired at her boat from north Wangtong. I instantly detached the light division, under Capt. Herbert, of her Majesty's ship Calliope, (who was accompanied by her Majesty's Plenipotentiary,) with directions not to run any unnecessary hazard until the body of the force came up, but to prevent as much as possible any further defensive preparations on the part of the enemy. I proceeded at the same time to Hong-kong, and weighed with the ships-of-the-line, the Queen and Madagascar steamers, leaving the Druid, Jupiter, and transports to follow.

Capt. Herbert, with the ships under his orders, took up a position on the western channel off south Wangtong on the 20th, and on the 22nd he proceeded in the Nemesis, with some boats of the squadron, to the channel at the back of Anunghoy, and destroyed a masked battery of twenty guns, which opened on them whilst employed clearing the passage, which the Chinese had been endeavouring to obstruct by driving down poles and mooring rafts across; this service was performed without any loss on our side; the guns in the battery were disabled by knocking off the trunnions, together with sixty found dismounted; the magazines, &c, were burnt. The enemy left about thirty of their number dead, and their colours were taken by Lieutenant Bowers, senior of H.M.S. Samarang.

From the prevalence of light winds, the line-of-battle ships and Druid were not collected until the 24th. On the 25th I arranged a plan of attack on the formidable batteries in our front, and of which it may be necessary for me to give some description. Partly surrounding the old fort of Anunghoy, and in advance of it to high water mark, was a new and well-built battery of granite, forming a segment of about two-thirds of a circle; on it were mounted forty-two guns, some of them of immense weight and large calibre; several strong entrenchments extended to the southward of this battery, and the ridges of the hill were crowned with guns, up to a camp calculated for about 1,200 men; at the north side was a straight work of modern erection, mounting sixty heavy guns: about 150 yards of rocky beach intervenes between the end of this battery and the northern circular battery, on which forty guns were mounted; all the works in the rear were protected by a high wall extending up the hill, on which were steps or platforms for firing musketry, and in the interior were the magazines, barracks, &c.

On the east end of the island of north Wangtong is a battery, with a double tier of guns defending the passage on that side, and also partly flanking a number of rafts constructed of large masses of timber moored across the river, (about twelve feet apart,) with two anchors each, connected by and supporting four parts of a chain cable, the ends of which were secured under masonry works, one on the south Wangtong, the other on Anunghoy: on the western end of north Wangtong is a strong battery of forty guns, flanked by a field-work of seventeen; indeed the whole island is one continued battery; on the extreme western side of the channel was a battery of twenty-two heavy guns, and a field-work of seventeen, protecting an entrenched camp containing 1,500 or 2,000 men. South Wangtong was not occupied by the enemy; it was an excellent position, and I therefore caused a work to be thrown upon it during the night of the 25th, and mounted two eight-inch iron and one 24-pounder brass howitzer; at daylight on the 26th, Capt. Knowles, of the Royal Artillery, opened this battery with admirable effect, throwing shells and rockets into north Wangtong, and occasionally into Anunghoy, which fire was returned by the Chinese with great spirit from a battery immediately opposite, having also kept up a fire during the greater part of the preceding night, (during the erection of the work,) which slackened towards 2 A.M., and finally ceased.

At 11 o'clock the breeze springing up, the signal was made, and the fleet stood in.

The attack on Anunghoy I entrusted to Capt. Sir H. Le Fleming Senhouse, of H.M.S. Blenheim, having with him the Melville, Queen steamer, and four rocket boats. The Wellesley, Calliope, Samarang, Druid, Herald, Alligator, and Modeste, were opposed to the batteries on the south, south-west, and north-west of Wangtong, and the forts on the western side of the channel.

In less than an hour the batteries on Wangtong were silenced, and the troops (under Major Pratt, of the 26th Cameronians,) which had been previously embarked in the Nemesis and Madagascar steamers, consisting of the detachments of her Majesty's 26th and 49th regiments, 37th Madras N. I., and Bengal Volunteers, together with the Royal Marines, were landed, and in a few minutes masters of the island, without any loss. 1,300 Chinese surrendered.

The Anunghoy batteries had now been silenced by the beautiful precision with which the fire of the Blenheim, Melville, and Queen, had been directed, and perceiving that the enemy were shaken, Sir Le Fleming Senhouse, at the head of the Marines and small-arm men, landed on the southern battery, and drove them in succession from that and the two others, and at one o'clock the British colours were flying on the whole chain of these celebrated works; and the animated gallantry displayed by the whole force, convinces me that almost any number of men the Chinese could collect would not be able to stand before them for a moment.

Our casualties are trifling, five wounded, slightly, in the whole force; the main-top-mast and fore-yard of the Blenheim were shot through, one 32-pounder gun rendered unserviceable, several shot in the hull, and the rigging much cut up; the Melville's main-top mast wounded, and rigging considerably injured; the Calliope was struck in several places, and the other ships had merely a few ropes cut. The loss of the enemy was severe, but not so heavy as at Chuenpee, 1,300 (as before stated) having thrown down their arms. I should estimate their killed and wouuded at 250 in Wangtong; probably as many in Anunghoy; at which place the Chinese Admiral Kwan and several other mandarins of rank fell. The body of the Admiral was recognised by his family, and taken away the day after the action, under a fire of minute guns from the Blenheim.

On the morning of the 27th, the light squadron proceeded up the river, under the command of Capt. Herbert, of the Calliope, and on the day following I was gratified by receiving a dispatch from him, reporting, that on their arrival off the first bar, the enemy were observed strongly fortified on the left bank of the river, close to Whampoa reach, with upwards of forty war-junks, and the Cambridge, (formerly an East Indiaman of 900 tons), on approaching within three miles, the Madagascar and Nemesis steamers, having on board his Excellency and Capt. Herbert, proceeded to reconnoitre and find out a clear passage, a number of vessels having been sunk. On advancing, a heavy fire was opened on the steamers, which was returned with great effect; the ships were now brought up, and opened on the junks, Cambridge, and batteries, which in an hour were nearly silenced, when the marines and small-arm men were landed, and stormed the works, driving before them upwards of 2,000 Chinese troops, and killing nearly 300. In about half an hour after landing, all the defences were carried (though in several places brave and obstinate resistance was made). In the mean time, the Cambridge was boarded, and carried by the boats of the Calliope, Nemesis, and Modeste, and almost immediately set on fire; the explosion of this vessel's magazine must have been heard at Canton. The fort (mud) mounted on the river front forty-seven guns, on the left flank three; a field-work four; the Cambridge thirty-four; besides ten mounted in a junk, making altogether ninty-eight guns.

The war junks escaped up the river, where the ships were prevented pursuing them by a strong raft placed across the passage. The guns and other munitions were destroyed. In this gallant affair the casualties (considering the opposing force) are few: one killed; three dangerously, and five slightly wounded.

On the morning of the 1st inst. I proceeded up the river to join the advanced squadron, in the Madagascar steamer, taking the transport Sophia in tow; Capt. Maitland, with the boats and small-arm men, together with the marines of the Wellesley, accompanied me. The Queen, taking the Eagle transport in tow, on board which ship I had embarked the marines of the Blenheim, Melville, and Druid, also attended by the boats of those ships, all being armed with their guns and howitzers.

On arriving at Whampoa, I found from Capt. Herbert's report, that the enemy were in considerable force at the end of Junk reach,* having as usual sunk several large junks in the river, and further protected themselves by a strong double line of stakes across it, and large bamboos and branches of trees between them. On the following morning I detached Commander Belcher, in H.M.S. Sulphur, up Junk river to reconnoitre, that ship being taken in tow by three of

* On the north-east side of the island.

the Wellesley's boats, under command of Lieut. Symonds, senior-lieutenant of the latter ship; on rounding a point on the right bank, they came in front of a low battery of twenty-five guns, masked by thick branches of trees, which opened a heavy fire on them; Lieut. Symonds instantly cut the tow rope, and gallantly dashed into the battery, driving the enemy before him, and killing several of their number. The Sulphur anchored, and some shot from her completely routed them from the thick underwood in the vicinity in which they had taken shelter, the guns were destroyed, and the magazine and other consumable material set on fire. The number of troops was probably 250, and they were of the chosen Tartars; their loss was about fifteen or twenty killed,—ours was one seaman of the Wellesley mortally wounded (since dead), and the boats were repeatedly struck by grape shot.

As soon as a cursory survey of the river was made, the Herald, Alligator, Modeste, and Eagle and Sophia transports, were pushed forward within gun-shot of Howqua's Fort; and thus, for the first time, were ships seen from the walls of Canton; on the 2d, the cruizer joined me, having on board Major-Gen. Sir Hugh Gough, who took command of the land forces. The Pylades and Conway also joined from Chusan, and the two first-named vessels were sent in advance. On the 4th, in concert with the Major-Gen., an attack was planned for the next morning, but, on approaching, the fort was found to be abandoned, and the British colours were hoisted; a garrison of the 26th regt. was placed in it; and a company of royal marines, under the command of Capt. Ellis, RM., took possession of a large joss-house on the left bank (which the enemy were beginning to fortify), and rendered himself secure, while the seamen soon removed some of the stakes and other impediments, and made a clear passage for ships. I may here describe the position.

On the right bank of the river, on the point formed by the mouth of a creek (which is a boat-passage to Whampoa,) was Howqua's Fort, a square building mounting thirty guns, from the northern angle; the stakes mentioned extended to the opposite bank, the ground on each side being low paddy fields, cut and intersected by canals in all directions. The joss-house rather projected into the stream, and consequently was a good position. The river here is about 500 yards wide; 2000 yards in front is a long low island, which divides the river into two branches, and on the extreme eastern point of which stood a fort, mounting thirty-five guns, built to commemorate the discomfiture and death of the late Lord Napier; from this fort a line of well-constructed and secured rafts (forming a bridge,) extended to both sides of the river; on its right bank, flanking Napier's fort and the raft, was a mud battery intended for thirty-five guns, on the left was a battery, also flanking Napier's fort, on which the enemy had forty-four guns, most of which they withdrew on the night of the 4th. In addition to these defences, stone junks were sunk in all parts of the river, between the stakes and the left of Napier's fort, which raft also rested upon sunken junks, secured on either sides within piles.

The position seemed formidable, and on the 5th the Major-general and myself prepared to attack it. He landed at the joss-house, having with him the Royal Marines and detachment of the 26th, for the purpose of taking the battery on the left bank; the ships weighed, and dropped up with the tide; on the approach of the first ship, the enemy fired all their guns, and fled across the rafts and in boats. The British colour was then hoisted.

A paper was issued calling on the people to place confidence in us, and to avoid hostile movements, in which latter cases protection was ensured to them. At noon, the Kwang-chow-foo, or Prefect, accompanied by the Hong merchants, came down, and after a long discussion with the Plenipotentiary, admitted that, Keshen having been degraded, and the newly-appointed Commissioners not having arrived, there was no government authorized to treat for peace, or make any arrangements; they confessed the truth of the reports we had heard, that the greatest consternation existed in the city, and that every person who could quit it had done so; in fact, that it was at our mercy, and it has so remained

a monument of British magnanimity and forbearance. I fear, however, that the forbearance is misunderstood, and that a further punishment must be resorted to before this arrogant and perfidious Government is brought to reason.

Her Majesty's Plenipotentiary being, however, desirous to try the effect of another proclamation, and to show his desire for an equitable adjustment of affairs, addressed the Major-General and myself, requesting that we would make no further movement towards the city, until the disposition of the provincial government officers was put to the test, as far as regards their non-interference; and we have, consequently remained in *statu quo*, but reports (on which we can rely) are daily reaching us, which state that fire vessels are fitting out about seven miles above Canton,—forts, in the rear of the city, in course of erection, and the people are forbidden to bring us supplies, while the teas and silks, and every other valuable, are removing from it.

These proceedings, so directly contary to the assurances of pacific intentions (which they are ever ready to deal forth in profusion), lead me to the conclusion, that we shall have to proceed even at the risk of the destruction of the second city of the empire—an event exceedingly likely to occur from its abandonment by the authorities, and the excesses of the lower classes of a community proverbially bad. The responsibility must, however, rest on the heads of those authorities.

I this day returned to Wangtong, accompanied by the Major General, in order that the arrangements in that garrison may be carried out, and plans devised for our further operations.

I have, &c.

J. G. Gordon Bremer,

To the Right Hon. Earl of Auckland, &c. *Commodore & Com-in-chief.*

Wellesley, off Wangtong, March 27, 1841.

My Lord.—In continuation of my letter of the 10 inst., I have the satisfaction to inform your Lordship that on the 15th I received a report from Capt. Herbert, of H. M. S. *Calliope*, detailing a well executed attack on the only remaining fort protecting the approaches to the city of Canton. This fort is situate about ten miles from the anchorage at Whampoa, up a narrow and intricate channel which ends in the Broadway or Macao passage from Canton. The attack commenced about five P.M., from the Modeste and Madagascar steamers, with the boats of the squadron, and in half an-hour the forts were in our possession, the Chinese keeping up a well directed fire until the boats' crews were in the act of scaling the walls, when they gave way and fled in all directions. They were devoting the whole of their attention to the strengthening of the defences of this post, and had rendered it one of the most formidable which had been encountered. I am therefore happy that it is in our hands; the loss of the Chinese is not correctly known—many were found dead in the fort; our own casualties do not amount to more than three wounded.

The zealous desire of every officer and man in the squadron to seek occasions in which to distinguish themselves has led to the performance of various well-executed services; amongst them is the forcing the inner passage from Macao to Whampoa, which was deemed by the Chinese impenetrable to foreigners. Her Majesty's Plenipotentiary having represented to the senior officer in Macao road the great advantages likely to accrue by this step, his views were at once acceded to by Capt. Scott, and preparations made for carrying it into effect. At 3 A.M., on the 13th, the Nemesis, with the boats of the Samarang in tow, weighed from Macao roads, and proceeded over the flats between Twee-lieu-shaw and Toi-koke-tow Islands to the Broadway river. At 8 A.M., they came in sight of Macao Fort, and the steamer having taken up an enfilading position, where not a gun of the enemy could bear upon her, opened her fire, whilst the boats proceeded to the attack. On their approach, the Chinese abandoned the place; thirteen guns were found mounted, which were completely destroyed,

the buildings set fire to, and a train laid to the magazine, which exploded before the boats returned to the Nemesis. On reaching Point How hoak-tow the river is divided into two channels; that to the right takes a sudden sharp turn and becomes very contracted in its breadth; here they discovered Tai-yat-kok, a field battery (very recently constructed,) of fourteen guns, very strongly posted on a rising ground, situated on the left bank of the river, (surrounded by overflowed paddy fields), which enfiladed the whole line of reach leading up to it. As the steamer appeared round the point the enemy opened an animated fire upon her, which was smartly kept up; it was most effectually returned by the two guns from the Nemesis, which vessel threw her shot, shells, and rockets admirably; the boats advanced under the slight cover of the bank, but before a landing could be effected on their flank they abandoned the guns, when possession of the work was taken by a narrow pathway, which could only be passed in single files; the guns were destroyed, and the buildings and materiel consigned to the flames and blown up; meanwhile a detachment of the boats had gone over to the opposite side of the river and destroyed a military station or depot. At noon nine war-junks were seen over the land, and chase was immediately given. On entering the reach in which they were, Capt. Scott observed on the right bank of the river a new battery, scarcely finished, with ten embrasures, but without guns, and Hochang fort close to it, well built, of granite, surrounded by a wet ditch, and mounting fourteen guns and six ginjalls. Abreast of these (which they flanked) the river was strongly staked across, through the centres of which the last junk had passed, and the opening again secured. The enemy immediately commenced firing from the fort and junks, which was replied to by the Nemesis with good effect, while the boats opened a passage through the stakes, and dashed on to the attack of Hochang and junks. The former was secured by wading the ditch and entering the embrasures, and the latter, seeing the fall of the fort, became so panic-stricken, that on the approach of the boats seven got on shore, their crews jumping overboard immediately they grounded, two junks alone escaping. Lieut. Bower, in pushing to cut them off, discovered Fieshakoe on the left bank of the river within 100 yards of the advanced junk aground, which fort, mounting seven guns, opened a heavy fire of grape upon him; observing that the junks were abandonod by their crews he turned all his attention to his new opponents, whom he drove out of their strong hold by passing through the adjoining town and taking them in reverse.

In the meantime Mr. Hall dextrously managed in getting his vessel through the centre passage of the stakes, which, fortunately, was just sufficiently wide to admit of her passage. At thirty minutes after two the boats returned to the steamer, after having destroyed all the guns, and set fire to Fiesha-kok fort and the seven war-junks, which all blew up within a quarter of an hour; chase to to the two escaped re-commenced, during which they passed two dismantled forts: at four P.M. they arrived off the large provincial town of Hiang-shan, one of the large war-junks preceding them about a mile. The dense population thickly crowded the banks, boats, junks, house-tops, the large pagoda, and surrounding hills; both sides of the river were packed by the trading craft of the country in the closest possible order, the centre of the river, which is very narrow here, having merely sufficient space to allow the steamer's paddle-boxes to pass clear of the junks moored to its banks; not the slightest fear was manifested by the people, but several mandarins took to their boats and followed the war-junks, which were closed so rapidly that one of them ran on shore, the crew jumping overboard; the steamer brought up abreast of her and destroyed her. While thus employed, the fort of Sheang-chap, within two hundred yards (but hidden by some intervening trees, opened its fire, which was instantly returned, and the boats, with the marines of the Samarang, stormed it; its eight guns were destroyed; a number of Chinese troops coming down towards the fort, made it necessary to fire two or three shot, which going directly into the midst of the body, scattered and dispersed them in an instant. At six P.M. the junk and fort were fired, and the steamer passed on into a narrow shallow

channel, scarcely more than the breadth of a canal, when she anchored head and stern for the night.

At daylight, on the morning of the 14th, they weighed and proceeded up the river in the steamer's draught of water, and not broader than her own length, grounding occasionally on both sides; at 7h. 50m. arrived at the large village of Hong-how, with a fort of the same name at the upper part, which flanked a strong and broad line of stakes twenty feet wide, completely across the river, filled up in the centre by large sunken junks laden with stones; on discovering the fort the Nemesis opened fire, which was instantly returned by the enemy; as in all the preceding actions, they fled the moment the boats landed to attack them; they had evidently expected to be assailed on the opposite side to that by which the Nemesis had approached, the walls being piled up with sandbags outside in that direction; nine guns were destroyed here, and the fort blown up. After the Nemesis had made good her passage through the stakes, which was effected after four hours' incessant labour, assisted by the natives, who flocked on board and around in great numbers after the firing had ceased, all apparently anxious to aid in destroying the stakes.

At 4 P.M. they arrived off a military station; a shot was fired into the principal building, which drove out the garrison who had screened themselves in it; the boats were then sent on shore, and the whole establishment, together with a mandarin boat, mounting one 9-pounder and two ginjalls, were destroyed, and at six the steamer anchored for the night.

At daylight, on the 15th, the Nemesis continued her course upwards, and at 7h. 30m. arrived off the large village Zamchow, under the banks of which a number of soldiers with matchlocks, were descried endeavouring to conceal themselves, upon whom a fire of musketry was opened, which dispersed all those who were unhurt in less than a minute.

On moving up to Tegnel, a large town on the left bank of the river, three forts were passed, all dismantled and abandoned; the custom-house of the latter place was destroyed, as well as a war-junk mounting seven guns, which the crew had quitted on the approach of the steamer. On proceeding up to Whampoa, three more dismantled forts were observed, and at 4 P.M. the Nemesis came to in that anchorage, having in conjunction with the boats destroyed five forts, one battery, two military stations, and nine war-junks, in which were 115 guns, and eight ginjalls, thus proving to the enemy that the British flag can be displayed throughout their inner waters wherever and whenever it is thought proper by us, against any defence or mode they may adopt to prevent it. This service has been performed without the loss of a single man on our side, and only three seamen slightly wounded, belonging to her Majesty's ship Samarang. The greatest praise is due to Mr. W. H. Hall, R.N., commander of the Nemesis, for the cool, unwearied, and zealous performance of his duties (under circumstances of frequent danger and difficulty) at all times, more especially in thus traversing a navigation never before passed by a European boat or vessel.

On the 19th I was gratified by receiving a report from Capt. Herbert, of her Majesty's ship Calliope, commanding the advanced squadron, detailing the various operations of that force in the attack and capture of the forts, defences, and flotilla off Canton, and the hoisting of the Union Jack on the walls of the British factory; the guns of the squadron commanding all the approaches to the city from the western and southern branches of the river, thus placing in our power the great provincial capital.

This was brought about by the Chinese having fired upon a flag of truce sent with a chop to the Imperial Commissioner at the desire of his Excellency, the plenipotentiary. The flotilla of boats of the squadron formed into four divisions under the command of Captains Bourchier and Bethune, of Blonde and Conway, every arrangement having been completed, the force—Modeste, Nemesis, Madagascar, Algerine, Starling, Young Hebe, and Louisa—moved in advance about noon, and engage the batteries for about an hour, when the flotilla, with the

marines, under the command of Capt. Bourchier, was brought up in admirable order, and upon the signal being given, stormed and completed the capture of the enemy's works, notwithstanding a most determined resistance on the part of the Tartar troops; one hundred and twenty-three guns were mounted in the different forts; the loss of the enemy had been very considerable (upwards of four hundred men); our casualties, I am happy to say, do not exceed six wounded.

The blow was followed by an agreement on the part of the High Commissioner to a suspension of hostilities, and afterwards by the publication of an edict, declaring the trade to be opened, and that all British and other merchants proceeding to the provincial city shall receive due and perfect protection.

I endeavoured to push forward to the scene of action in the Hyacinth's gig, but only arrived towards its close, in sufficient time, however, to be gratified by the hoisting of the British colours. Thus, for the first time in the history of China, have ships been brought under the very walls of Canton, and by channels and branches on which a foreign ship never before floated. I believe the Chinese were not acquainted with the capabilities of their splendid river; assuredly they had no idea that the second city in the empire could be assailed by ships-of-war on its waters; I trust that the fact will have its due influence on the authorities, and I have no doubt that the forbearance displayed towards a city so completely at our mercy as this is, will be appreciated by the better classes of the community, who have everything to lose, and the benevolence of the British character more fully understood than it ever yet has been in this country.

The gratifying spectacle of our ships in this position is solely attributable to the unwearied exertions of the captains, officers and men belonging to them, in sounding the various inlets through which they passed, not a single Chinese pilot having been employed throughout.

In conclusion, we may on this, as on former occasions, congratulate ourselves on this service having been performed without any loss of life on our side, only seven wounded (severely), amongst whom is that gallant officer Lieut. Stransham, Royal Marines, of H.M.S. Calliope, Acting Brigade-Major.

I have the honor, &c

J. J. Gordon Bremer,

To Earl Auckland, &c. *Commodore, &c.*

The report of Capt. Herbert, of H.M.S. Calliope, to His Excellency Sir Gordon Bremer, referred to in the preceding despatch, is annexed:—

British Factory, Canton, March 18, 1841.

Sir.—This day the force enumerated below, under my orders, carried and destroyed in succession all the forts in the advance and before Canton, taking, sinking, burning, or dispersing the enemy's flotilla, and hoisting the union jack on the walls of the British Factory, the guns of the squadron commanding all the approaches to the city from the western and southern branches of the river, thus placing in our power the great provincial capital, containing upwards of one million of inhabitants.

I found myself forced to make this attack without your instructions, for the reasons so strongly expressed in Her Majesty's Plenipotentiary's note, dated 17th of March, 1841, considering it my duty to resent, with all the promptitude in my power, the insult offered the day before to the flag of truce sent with a chop to the Imperial Commissioner, at the desire of his Excellency.

I forward the accompanying sketch, placing you in more immediate possession of the line of concentration which led to such an immediate result. In detailing the operations of the day, I feel myself inadequate to do justice to the gallant officers and men employed on this occasion.

The flotilla of boats, formed into four divisions, was under the command of

Capt. Bourchier, of the Blonde, and Capt. Bethune, of the Conway assisting Three divisions, under the immediate charge of Commanders Barlow and Clarke, and Lieut. Coulson, of the Blonde. H.M. sloop Hyacinth (to whom too much praise cannot be given for the exertions displayed by Commander Warren, his officers, and crew, in getting her through the intricate and difficult passes of the river,) piloted by Com. Belcher, to be in readiness for operation, and a division of boats, under the command of these officers, were placed at the southern entrance of the river, re-communicating with the main stream at Fatee, to meet any retrograde movement of the numerous flotilla that had taken part in the aggression of the 16th inst.

Every arrangement having been completed and understood, the whole force moved in advance about noon, the vessels, marines, and three divisions of boats from the northward of the Macao fort, and within gunshot of the enemy's advanced batteries, engaging them for about two hours and a half, when all opposition ceased, and the factory within the defences were taken possession of.

The Modeste was placed within 300 yards, in front of the principal battery, and shortly gave proofs of her well-directed fire, flanked by the powerful guns of the Madagascar, Capt. Dicey, with artillerymen under the direction of Lieut. Fowlis, Madras artillery, and Nemesis, Mr. W. H. Hall, R.N., commanding, with artillerymen under the direction of Capt. Moore, and Lieut. Gabbett, Madras artillery, who handsomely volunteered their services upon the occasion. The Algerine (Lieut. Mason,) and Starling, (Lieut. Kellet,) passing ahead, cutting through the rafts on the right bank, and engaging a part of the war junks, the Hebe and Louisa tenders taking part at the same time, under cover of the ships' guns; the flotilla with the marines was brought up in admirable order by Capt. Bourchier, and upon the signal given stormed and completed the capture of this part of the enemy's works, notwithstanding a most determined resistance on the part of the Tartar troops. From this battery the vessels and flotilla moved forward, and carried the other defences in succession, amounting in the whole to 123 guns.

By the great care of Capt. Nias, his officers, and ship's company, the Herald was brought over the flats, and entered the reach during the engagement, which must have had considerable effect upon the enemy, by dividing their attention, not knowing what other force might be in reserve.

Of Capt. Bourchier, whose high character is so well known to you, sir, and the service, I cannot speak sufficiently strong for the manner in which he conducted the forces under his immediate command, not only leading them into action in admirable order, but keeping them together in readiness for any outbreak of the immense population of such a crowded city, and I cannot refrain mentioning his conspicuous and energetic exertions in towing off the burning junks, which were drifting upon the suburbs of Canton, and soon would have evidently set fire to that part of the city, and involved the destruction of the whole, in which he reports he was ably assisted by the officers under his directions. My thanks are also due to that excellent officer Capt. Bethune, and to Commanders Belcher, Warren, Barlow, and Clarke, for their great zeal. The Royal Marines, under Lieut. Stransham, of the Calliope, assisted by Lieut. Daniel, Hewitt, Marriot, and Polkinghorne, were, as usual, conspicuous for their gallant, steady, soldierly bearing. I have, however, to regret that Lieut. Stransham, in exerting himself to destroy the works, was suddenly exposed to a heavy explosion, by which he has been considerably burned, but continues at his post. To Lieutenants Kellet and Collinson, and Mr. Brown, master of the Calliope, every favourable consideration is due, for having made themselves particularly useful in sounding, and afterwards conducting several men of-war safely to an anchorage off the city of Canton. Indeed my sincere gratitude is due to every officer, seaman, and marine employed on this service, for their zeal and spirited conduct, from which it is hoped the most beneficial results will ensue.

His Excellency, her Majesty's Plenipotentiary, ever on the alert, has done me the honour to be with me throughout these operations, and to whom my best thanks are due for his support and assistance on all occasions.

By Lieut. Paul, whom you kindly attached to me, I enclose a return of casualties, which, I am happy to say, are inconsiderable, and bring before you the officers employed in the flotilla on this service, with a return of ordnance destroyed in the defences near Canton.

Your presence at the close of the action releases me from going further into detail.

From the various reports brought in we have been able to ascertain that the enemy's loss has been about 400 men.

I have the honour to be, &c.,

T. HERBERT, *Captain.*

To Sir J. J. G. Bremer, &c.

List of the ships, steamers, boats, &c., employed at the capture of Canton on the 16th instant.

Herald, Capt Nias; Modeste, Com. Eyres; Hyacinth, Com. Warren; and Algerine, Lieut. Mason.

Tenders.—Starling, Lieut. Kellett; Hebe, Mr. Quin, mate; Louisa, Mr. Carmichael, mate.

Steamers.—Madagascar, Capt. Dicey; and Nemesis, Capt. Hall.

Boats.—First Division—Com. Barlow; Lieutenants Williams, Stewart, Drury and Dewes, (act.); Messrs. Walter Kendall, Purver, Woolcome, Baker, and Kator, mates; Mr. Comber, midshipman; Mr. Scott, volunteer 1st class.

Second Division—Com. Clark; Lieutenants Hamilton, Beadon, and Shute; Mr. King, acting-master; Messrs. Miller, Fitzgerald, Pearse, Read, and Turnour, mates; Mr. Crofton, midshipman.

Third Division—Lieutenants Coulson and Ingram; Messrs. Christopher, Walker, and Anderson, mates; Messrs. Purvis, Coke, and Lyons, volunteers 1st class; Mr. Stanley, assistant-surgeon.

Western Division—Commanders Warren and Belcher; Lieutenants Haskell, Watson, Hay, Moorshed, D Eyncourt, Wood, Hayes; Mr. Airey, master; Messrs. Daly, Rivers, Jeffries, Le Vesconte, Egerton, Drake, St. Leger, and Bryan, Mates; Mr. Brown, master-assistant; Mr. Butler, M.D., and Mr. Tweedale, assistant-surgeons.

Volunteers—Lieut. Mackenzie, H.M. 90th reg., acting military secretary to the naval commander-in-chief, Mr. Johnson, master of Conway, Mr. G. Ramsden, clerk of Calliope, Lieut. Giffard, H.C. 12th reg.

Return of Ordnance destroyed in the Defences near Canton.

Lower battery, left bank, Macao Passage—22 guns. Upper battery,—9 guns. Sand Bag battery on wharf, 9 guns. Western fort, Canton suburbs (Seawaan), 10 guns. Red fort, opposite Canton factories, 20 guns. Dutch folly, 25 guns. Sand bag battery above the arsenal, 13 guns. Two junks moored off admiral's house, 15 guns. Total 123.

Besides those destroyed in Lin's and the Mandarin war boats.

A List of Casualties in the Force employed in the attack and occupation of the Defences of the City of Canton, March 18th, 1841.

Lieut. Stransham, royal marines, severely. Calliope, two wounded slightly. Hyacinth, two wounded, one slightly, one severely. Modeste, two wounded slightly.

T. HERBERT, *Captain.*

Launch of the Trafalgar.

Precisely at two o'clock a royal salute fired at the mortar and howitzer, battery announced the near approach of her Majesty and the Royal party escorted by a detachment of Life Guards. Her Majesty was received byRord Minto, Sir C. Adam, Lords of the Admiralty; Admirals Beauclerc, Digby, and Otway, Capt. P. Hornby, Superintendent of the Dockyard; and Lieut. General Lord Bloomfield and his staff, the Gentlemen Cadets forming the Guard of Honour, and the band of the Royal Artillery playing "God save the Queen."

On entering the spacious portion of the building under which the Trafalgar was constructed, and which was decorated with standards and a Royal crown placed over the inside of the door, and with a profusion of union jacks, and a flag with the arms of Saxe Coburg and Gotha, her Majesty appeared to be enraptured with the scene presented to her view—the magnificence of the vessel on one side, and the immense groups of her subjects in the vessels on the river, and on the bank on the opposite side, who welcomed her with most enthusiastic cheers. Her Majesty, after sitting for a few minutes in a crimson-coloured couch, proceeded to the front of the vessel, leaning on the arm of Lord Minto, and followed by Prince Albert, Col. Bowater, Col. Wylde, and other officers and equerries in waiting. At half-past 2, her Majesty having previously returned to the Royal stand, a salute was fired to announce that the launch would immediately take place, and the majestic vessel glided into the water amidst the cheers of hundreds of thousands who were gratified with the sight. When sufficiently clear of the shed under which she was built, the respective flag staffs were instantly run up, and the Royal Standard of England hoisted by Commander Thomas Leigh, R.N., who served on board the Conqueror, 74, in the memorable battle which this splendid specimen of Naval architectnre is intended to commemorate. At about 150 yards distant from the shore the anchor was dropped, and the Trafalgar brought up in beautiful style, the bands playing "Rule Brittannia," and the brave old tars upon her decks cheering with their utmost strength.

When it became necessary to name the ship, Her Majesty sent Sir Charles Adam, one of the Lords of the Admiralty, to desire Lady Bridport, neice of the gallant Nelson, to perform the ceremony. Her Ladyship did it with the wine that was on board the Victory at the battle of Trafalgar, and the ship was launched amidst tremendous cheering.

Courts Martial.

At a court martial held at Malta, on board the Howe, whereat, owing to Rear-Admiral Sir J.A. Ommanney, the second in command, being in quarantine, Sir John Louis, the next officer in seniority, presided, Commander James J. Stopford and the officers of her Majesty's brig Zebra were tried for the loss of that vessel in December last, on the coast of Syria. Mr. Brown, purser of her Majesty's ship Ceylon, assisted as deputy judge advocate, and Mr. Loudon, Sir Robert Stopford's secretary, assisted the commander and officers under trial.

After a patient investigation, which occupied five hours, the court pronounced a sentence of honourable acquital, and in returning Commander Stopford his sword, the president, in a short address, complimented the officers and ship's company in general on their seaman-like and intrepid conduct on the trying occasion; when Commander Stopford, whose promotion we understand is only held back for the result of the court-martial, stepped forward and solicited the president and members of the court to bring before the notice of the commander-in-chief and the lords of the Admiralty several of the officers and men,

late under his command, who had particularly distinguished themselves both before and after the shipwreck.—*Malta Paper.*

On board the Magnificient at Port Royal, Deputy Judge Advocate, Charles Dudney, Esq., Commodore Douglas, President, Capts. Wyvill, Parker, Milne, and Commander Fraser, of Sappho, assembled to try Lieut. Wooldridge, of Crocodile, for insolence to acting Captain Johnstone. Sentence—severe reprimand; dismissed his ship, and the command of the Charybdis, to which he had been previously appointed, annulled.

Also, on the 5th, to try Mr. Samuel Browne, Surgeon of H.M.S. Victor, for drunkenness. Sentence dismissed his ship, and placed at bottom of the list of surgeons.

A Court-martial assembled this day on board the San Josef, and continued by adjournment until the 19th, for trying J. A. Abbott, First Lieut. of the Trinculo, on the following charges preferred against him by her Commander H. E. Coffin:—First, for having on the 13th. Jan. 1841 behaved in a disrespectful and contemptuous manner to his Commander on the quarter-deck, when he was spoken to respecting the disposal of a boat called the Dingy, without having previously made the Commander acquainted with the same. Second for disrespectful conduct, in having addressed and forwarded through him a letter dated 24th Jan. 1841, to R. M. O'Ferrall, Esq., Secretary of the Admiralty, imputing to him neglect of duty and unofficer-like conduct, in having suppressed part of the correspondence, which he previously affirmed he should forward to their Lordships; and subsequently, on the quarter-deck, in a most contemptuous manner asked him whether he intended to forward that letter. Third, for neglect of duty, on 25th Jan. 1841, in not having given directions for the spare topsail-yards in the chains to be blacked before 8 A.M., agreeable to his orders on the previous day. Fourth, for disobedience of orders on 13th March, 1841, in having run the guns out at 20 minutes past 1 P.M., distinctly ordered not to be run out till after quarters. Fifth, for disrespectful and contemptuous conduct on the quarter-deck, about 30 minutes past 8 A.M., on Sunday, 14th, March, 1841, when spoken to by him for running the guns out contrary to his orders on the previous day. 6th, for having, on Sunday, 14th, March, 1841, made his appearance on the quarter-deck, at divisions, at 10 A.M., without a waistcoat on, and repeatedly refusing, in the presence of the officers and ship's company, in the most contemptuous manner, to put one on, when ordered to do so by him. Seventh, for contemptuous conduct, in the presence of the officers and ship's company in refusing to read the Church Service to the officers and ship's company when ordered to do so, on Sunday the 14th March, 1841.

The Court, after having heard evidence on the part of the prosecutor as well as on the part of the prisoner, having maturely and minutely considered the same, acquitted him entirely of six of the charges; but the first charge being proved in part, the court ordered him to be admonished to be more careful in future. The following were the members composing the Court:—Rear-Admiral Superintendent S. Warren, President; Capts. C. J. Austen, Edward Harvey, J. T. Nicolas, W.W.

Henderson, Henry Eden. George Eastlake, Esq., Deputy-Judge Advocate.

RAPER'S NAVIGATION.—We have endeavoured in a few recent numbers to impress our readers with a correct notion of the advantages of this excellent work, and we are glad to find that those advantages are becoming extensively known, as we find the work already in many hands. On the 24th ult. Lieut. Raper had the gratification of receiving the medal of the Geographical Society for his attention to the maritime geographical positions embodied in his work, and the discussion of which has appeared from time to time in our pages. There can be no doubt that this is no less an important feature of the work than any other, for of what use can the navigator's calculations be, if his starting point is inaccurately given, and it is equally notorious, that one work on navigation, was copied from another, as it was printed. Lieut. Raper saw the importance of this in the proper light, as his discussions in this journal amply prove, and he has now the gratification of finding his exertions are encouraged by that society of gentlemen under whose especial patronage geography has of late made such rapid strides.

Among the numerous subjects included in his work, after dealing with that of finding the variation of the compass, Lieut. Raper concludes the chapter with the following pithy remarks on innovation, that mischievous propensity of our nature induced by a love of change. We trust that so good a train of reasoning will not be lost on our readers, as he has given us in this extract; indeed, we do not apprehend that it will be.

"The word *variation* is growing out of use among scientific people, and the word *declination* is taking its place. The intention of the change is good, inasmuch as it obviously aims to confine the popular word variation to express a change alone; but it is on the other hand, rather an odd way of obtaining precision in a language of a science to adopt in a new sense, a purely technical word already set apart to express an element of another science associated with it at every step. The name *declination* is used in Latin treatises, and in the French and other languages of Latin derivation. In German the common term implies *swerving from*, and in some other northern languages, mis-shewing. The sense is fully conveyed in the compound '*out of the way-ness*,' that is '*deviation*.'

"The term '*deviation*' is thus, if a new name is to be adopted sufficiently precise and descriptive, and *local* deviation springs directly from it, as the effect due to local circumstances. But the word '*declination*' is, at least by all scientific analogy singularly unlucky, for *magnetic declination*, in the phraseology appropriated to the circles of the sphere, is an arc perpendicular to the *magnetic equator*.

"Again as to the dip, it is the fashion now to call this '*inclination*.' This term, indeed, indicates angular position with respect to the horizon, but it does not, like the old word 'dip,' answer the second object of directing the mind to that extremity of the needle which is below the horizon; because, in general, the term inclination relates to the direction of a line and 'depression' to the position of a point. We have, it is true, on the other hand 'depression of the horizon;' but these can never be confounded, and the question, moreover, is not the establishment of new terms for new things, but the changing of old terms for old things. Besides this, the term 'inclination,' seems the best adapted to the position of the ship herself, a consideration absolutely necessary in all questions of the compass, though perpetually overlooked; for which, therefore, it must be reserved as its synonym heel, means also the foot of the sternpost.

"The new terms are employed incidentally in the instructions given by the council of the Royal Society, to Capt. J. C. Ross, on his expedition to the Antarctic regions. But the assimilation of the scientific language of different

countries, to the extent of two words, is no reason why we should abruptly depart from our old-established sea-terms, to follow those of other nations less essentially maritime. It is accordingly to be hoped, that scientific and intelligent seamen will strongly oppose all sudden changes in our maritime vernacular, introduced on scientific or any other grounds, but especially one so ill considered as this, which tends directly to throw into confusion the slender vocabulary of those seamen who navigate thousands of our ships with the minimum of scientific knowledge, by entailing on us all the perpetual necessity of distinguishing between the *declination of the sun*, or any celestial body, and the *declination of the compass*."

Directions for entering the Kowie, *as laid down by Mr. William Smith, Surveyor.*

[The entrance of the Kowie River is in about latitude 33° 35′ south, and longitude 26° 45′ east.[

The entrance to the river lies about S.S.E. and N.N.W., so that vessels may enter at a proper time of tide with the wind from west, round by south, to nearly E.N.E. Should a vessel approach from the westward, with a westerly wind, she must haul up for the western pier, which when carried out to the extremity of the rocky point, she may boldly approach to within a ship's length; and if she enters with a flowing tide, (which she ought to do,) should the wind be too much ahead for her to lie up the channel, she may take in all sail. If she cannot cast a warp on the pier, she may drop her anchor, and she will swing up the river, and the moment she passes the pier head, she is in smooth water, when she may either kedge up the river, with her own anchor trailing on the bottom, or she may be dropped up the river by a warp from the western shore. Should she touch in swinging round, there is nothing to hurt her but sand.

If she comes in with a fair wind with the flood tide, she must take care to shorten sail the moment she is between the piers, or she will be up to her berth before they will be able to stop her way. She will then require check-ropes to stop her, and must be dropped into Marys cove very carefully, as the tide at the entrance of the cove runs with great rapidity both ebb and flood.

Should she come in with a north-easterly wind, she must enter with a flood tide, and if she can only fetch into the channel, even with the western pier head, should down all sail, and drop her anchor with a very short range of cable, so that if she trail round with her stern to the westward, she may not trail on the bank.

Should any vessel come in with a fair wind and ebb tide, they need not be in a hurry to take in sail, as they will require it all to stem the ebb tide, which is very strong all the way from the entrance to Marys cove.

These are general instructions for entering under sail, but should moorings be laid down off the mouth of the river, as it is intended, and a warp be stretched from thence to the pier, or to an anchor in the channel, then, if the wind be scant or right ahead, a vessel may boldly work up to the moorings, and either lie there for a fair wind, or warp into the river at the top of high water. As far as it is known, I believe,

the roadstead is clear of hidden danger, both east and west of the river's mouth, at least to some distance, for a vessel to beat up to the moorings should the wind be off shore.

Vessels coming from the east or west, running for the port in the night, or laying to, so as to be as near as prudent off the port in the morning, will be in some danger of the Fountain Rocks, and the only security at present for this, is, I should suppose, attention to the lead, and a good look-out-keeping, in a certain depth of water beyond them.

It is my opinion that steam-vessels, drawing six or eight feet water, may enter this place when completed, at almost any time of tide, and run up right alongside the wharf or quay, which is intended to be erected in Marys cove, at once without having to use her anchor at all, and indeed it will be seldom that any vessels will have to use their anchors in this port, if they are cleverly managed. One great advantage of this place is, that the passage from Marys cove to sea, is one straight course, so that if a vessel have a fair wind to start with, it is fair the whole way out.

I have no doubt that vessels drawing eight feet may enter at high-water, spring tides, without any danger;—and I expect that vessels of from ten to, perhaps, twelve feet water, will be able to enter, but this will be a work of time; and as the importance of the port progresses, means will be made use of to increase the depth, and enlarge the capacity of the port. But at present the large quantities of sand, which are carried out during the ebb tide, must necessarily leave a considerable deposit, causing the entrance to be much more shallow than it will be when the sand is all or nearly all out.

I have said nothing about going out. All that is required is a good leading wind to enable the vessel to surmount the surf, and there will be nothing to hinder any vessel going out at a proper time of tide.

The Africane came in under every disadvantage. Her captain had never seen the place before, a dead calm, neap tide and not high water either; but she went out in the most gallant style, with the wind W. by S., under a good press of canvas, and in ten minutes from the time she cast off her moorings, she was out to sea clear of all danger, passing the rollers of the surf without one breaking over her.

LIGHT-HOUSE ON THE GOODWIN SANDS.—It is satisfactory to state that that great national undertaking, a fixed light-house on the Goodwin Sands is now in progress under the management and patent of Mr. W. Bush, civil engineer. It is Mr. Bush's intention, in the erection of this light to float and sink iron caissons of from thirty to fifty feet diameter, and to excavate the land from the internal part of the caisson by means of air chambers until he arrives at the chalk rock, in order to obtain a permanent and solid foundation.

These caissons will be filled with concrete and masonry work, and upon this base a column about 140 feet high, will be raised. A number of men are now at work at Deal preparing the first caisson, and before the equinoctial gales come on we understand that there is every probability of securing a solid and permanent base.

We quote the foregoing from the *Morning Post*, and rejoice to see this important subject in such able hands as those of Mr. Bush. We must at the same time undeceive our readers as to the nationality of the affair, the nation having nothing to do with it; and it being solely a private speculation, on the success of which depends, no doubt, a vast degree of importance to the nation at large. We shall watch the progress of this attempt, and shall be happy to record its success.

West India Lighthouses.

Sir.—By a recent Parliamentary paper I find the sum of £2500 has been granted towards building a light-house on Morant Point, Jamaica, also £2000 for a similar purpose on Gibbs Hill, Bermuda, both of which will doubtless prove highly beneficial to the royal navy, and commerce of Great Britain; but, this liberality towards those islands fills me with more astonishment than I can express, when I find that the superior claims of Barbados remain still dormant. That Barbados has these superior claims is, I think, easily shewn. It is the *first* and *great* land fall of most part of the West India trade, the whole of the coast of Columbia and Venezuela, the point of rendezvous of the Canadian and American trade bound either to the islands or Guiana, and lastly it is of the utmost importance to the homeward bound trade from Guiana. Now, Sir, the claims of Jamaica, comparatively, are simply these, that its east end has a long low sandy point, where vessels have been wrecked; but the navigator is well warned of his approach to it from the eastward, by a departure from St. Domingo, from the northward by Cuba, and vessels from the southward or Spanish main seldom pass it bound to the northward, preferring to go round by Cape Antonio through the Gulf stream.

Why then does not Barbados share in the public liberality? Possibly the subject having been lost sight of these five or six years, it is forgotten? Well, then, I will freshen the public mind on this head. The necessity of a light-house, and the facility of its erection were so apparent to Sir George Cockburn, the naval commander-in-chief, and Sir Charles Smith, commanding the Royal Engineers, that in 1835, they surveyed and selected the most eligible spot for it, having done which they forwarded an estimate and plan to the Board of Ordnance, the Admiralty, and the Treasury. The character of these officers alone, ought to have been sufficient guarantee to any government that the undertaking was most essential to the benefit of commerce; and if it was considered so at that time, how much more imperative, does this necessity become, now that a contract has been made to convey the mails to the West Indies by steam, Barbados being their first land-fall after running a distance of about 3,500 miles from Europe. They must be assisted by a light, or else they will have frequently to heave to till daylight, losing several hours. I will merely repeat here, that from 1825 till 1835, thirteen valuable vessels had been wrecked, and subsequently six more, including in that number two packets, one transport, and one vessel laden with government stores.

The proposed light-house was to be eighty-three feet high, on a spot 117 feet above the level of the sea, the foundation to be of stone, quarried on the spot, and finished with brick of sufficient solidity to withstand hurricanes, and the lower part to be "bomb proof," The estimate of expense is as follows:—

Light-house . . .	£4798	12	0
Well	88	19	0
Barrack . . .	127	3	0
Tools, &c. . . .	78	1	0
Total	£5092	15	0

Maintenance per annum.

Three faces, three burners each, one pint of oil each per night . .	£85	0	0
Two men, one at £65, the other at £45, and a native or black assistant at £36 .	146	0	0
Total	£231	0	0

The value of any one of the above-mentioned vessels would have paid this expense twice over. In my former letter to you, I mentioned the particulars as to site, &c., therefore will not now repeat it. I am happy to observe from the West India papers, that the subject of lighting the other islands, for facilitating steam communication, landing and embarking passengers, &c., is attracting their attention, and I trust 'ere long the chain of lights in every island will be complete.

I remain, &c.,
W. J. W. Whish, *Com. R.N.*

Saldanha Bay.—*Discovery of fresh water.*

One of the most remarkable and important discoveries regarding the progress of Southern Africa has just been made, in the fact of fresh water being found in Saldanha Bay. Our readers are well aware that this fine bay, so happily situated in every respect, and so safe and commodious as a sea-port, has been retarded in the scale of improvement by its supposed extraordinary deficiency in the necessary article of fresh water. The following extract of a letter from Mr. Marsh, the government resident at that place, and forwarded by Rear-Admiral Sir Edward King, to the secretary of the Admiralty, states this discovery—one which cannot be looked on in any other light than being most important to the future prospects of this fine harbour. It would appear that the same narrow policy of the Dutch was exercised here, as that which marked their secrecy of their Indian possessions. To keep the geographical positions of these from being known, the parchment charts used in the navigation of their ships were always preserved at the Cape, and not allowed to come to Europe, each ship as she went out receiving them there, and leaving them on her return! Such days are happily gone by.

Respecting the discovery to which we have alluded, on the 22nd of March, 1841, Mr. Marsh writes thus from Saldanha Bay.

"It appears, that the springs with much art, labour, and trouble, have been intentionally filled in, and the run of water concealed. Strong cements have been used to keep the water from rising to the surface, and these have been artfully carried to low water mark; but time, with the action of the sea on the cement, has re-opened the runs of fresh water partially up to high water mark: hence the discovery of the springs so far back as December last.

"Van Reibeck of old, may, perhaps, have practised this cunning, to prevent England and other nations from frequenting or making a settlement at Saldanha Bay.

"My operations have been necessarily on a limited scale, but enough has been done to prove the fact, that on Schapen Island a supply of excellent water abounds; and from present appearances, I would say fully equal to any demand that can be made upon it, provided it is properly collected and secured.

"I have caused a trench to be opened about twelve feet from high water mark, so as to cut across and to intercept the run of the springs towards the sea. Yesterday, when the layers of cement had been removed, and my people had got to the depth of about four feet, the water came up so strongly that it required one hand to be constantly baling, to keep the trench free of water. At about six feet part of a bone of an ox or cow was discovered.

The following day, Mr. Marsh adds,—

"The trench has been extended to twelve feet in length, preserving the depth of only six feet. The water came in upon the workmen so strongly, that they could not get on with the work. Petrified bone mixed with stones and cement, have been dug up, and they have reached a spot at one extremity of the trench, that has the appearance of a masoned well. I must remark, that this powerful supply of water has been obtained on the 22nd of March, our driest season, and when we have been without rain for nearly three months!"

Our present number is accompanied by a fac simile of the Admiralty plan of Saldanha Bay, (in addition to our Canton river,) for the benefit of navigators, in order that they may know the locality of the spring, and that they may avail themselves without loss of time of the great advantages afforded in its abundant supply of water.

The United States Steam-Frigates, Mississipi and Missouri.

Our readers have heard of these two vessels:—the following are some particulars concerning them, gathered from the American papers.

The Mississpi is built of oak, and is entirely copper-fastened. She is double-decked; the space between the decks being little more than six feet: her engine room is separated from the rest of the vessel by an iron water-tight bulkhead both forward and aft.—She will be armed with 42-pounders and two bombs, to throw ten-inch shells. The following are her principal dimensions:

Length from counter to knightheads . .	228ft. 8in.
Extreme length to figure-head . . .	244 0
Extreme breadth	40 0
Depth in hold	23 6
Length of keel	206 9

She is just launched at Philadelphia, and is stated to be about twelve feet longer than the Pensylvania, but not so wide. Her tonnage is 1,700,—engines 600 horse-power, and she can carry 800 tons of anthracite coal, or sufficient for twenty-five days. She is pierced for twenty-six guns.

The Missouri, about to be launched at Brooklyn, is of the following dimensions:—

Length from figure head to taffrail . .	243 feet.
" on upper or main deck . . .	223
" between perpendiculars . . .	220
" of keel at bottom	207
Breadth of beam over the wales . . .	40
" outside the wheel house . . .	66½
Measurement as a double-decker . . .	1700 tons
" as a single-decker . . .	1940 "

The engines are about 600-horse power, and she will carry 800 tons of anthracite coal.

Inclination of her engines	25°
Diameter of paddles	28¾ feet
Immersion of wheels	6
Length of paddle	10

There are four iron plate bulkheads, to divide the ship so as to insure safety in case of springing a leak. She is of the same form, &c., as the Mississipi with the exception of the engines, which are essentially and purely American, being on the inclined principle, and as far as they are finished they promise to be the *ne plus ultra* of engines. This plan for the engines has been selected with a view to testify (*quere* test) their applicability to naval purposes, and should it succeed as well as there is now every reason to believe the same principle will be adopted in future war steamers.

Notice to Mariners.

Goodwin Sands.—A notice has been given by the Trinity-House, dated 29th of May, 1841.—That a Standing Beacon has been *experimentally* placed upon the eastern side of the Goodwin Sands, at about thirty fathoms from the eastern-most projection of dry sand at low water spring tides, and about half a cable's length from the point of dry sand which forms the south side of the Swatchway into Trinity Bay:—The undermentioned objects bear from this Beacon as follows: viz.

Goodwin Light Vessel, N.N.E. ½ E.; North Foreland Light-house, N.b.W. ½ W.; Gull Light Vessel, N.W. ½ W.; South Foreland High Light-house, W.b.S. ½ S.; Safety Beacon, S.W.b.N. ½ W.

Mobile Light.—*Caution.*—The Light on Mobile point was formerly a fixed light, but it now revolves, which I think is the chief reason of ships getting to westward of the entrance, as Pensacola light revolves, and is mistaken for it, at least in with thick hazy weather, which is very often the case about the place. There is a lighthouse on Sand Island, which shews a fixed light, but it is not seen so far to seaward as Mobile Point, and from what I was able to learn from several of the pilots, the current is much influenced by the winds about this place. There are no buoys laid down in the entrance of Mobile harbour, as shewn in the charts, and it should not on any account be attempted without a pilot. It has a bad entrance, and even when there is not a fresh breeze the currents set strongly in various directions.—*(Communicated by Capt. Melville of the barque Agnes, from Port Glasgow.)*

Portsmouth Harbour.—*Notice.*—Masters of Vessels entering Portsmouth Harbour are to observe that from the 27th of May last, the buoys for shewing the fair way channel into the harbour from the buoy of the Spit, are numbered from 1 to 4, on the larboard or west side of this channel, and painted white; and those on the starboard or eastern side of this channel are numbered from 1 to 3 and painted black, so that the direct fairway into the harbour is between the black and white buoys. In a strait line from buoy to buoy there will be no less water found than there is on the bar at low water ordinary spring tides, namely twelve feet and a half.

NEW CHARTS.

(Published by the Admiralty.)

Pursuing the method which we adopted in our last number with reference to the plans of ports and roadsteads resulting from Capt. Fitz Roy's surveys; we have in Tierra del Fuego the following:—

Packsaddle Bay, Smith Harbour with Bedford Bay, Hewett Bay, North Cove, Fury Harbour, Wick Islands.

South America, *West Coast,—Sheet* 2.

Port Barbara.

South America, *West Coast,—Sheet* 3.

Port Otway, St. Andres Bay, Anna Pink Bay, Port Refuge and Patch Cove, Vallenar Road.

South America, *West Coast,—Sheet* 4.

Port Low, a neat finished little plan, Port San Pedro, Port San Carlos.

South America, *West Coast,—Sheet* 5.

Port of Valdivia, Mocha Island.

South America, *West Coast,—Sheet* 6.

Santa Maria Island, River Leubu, Port of Concepcion, Coliumo Bay, Entrance of the river Maule.

South America, *West Coast,—Sheet* 7.

Horcon and Quintero Bays, Port Papudo, Ligne Road. Valparaiso.

SOUTH AMERICA, *West Coast,—Sheet* 8.

Maytencillo Cove, Herradura or Pichidanque Bay, Chaneral and Tortoralillo Bays.

SOUTH AMERICA, *West Coast,—Sheet* 9.

Herradura de Carrisal, Pajonal Cove, Copiapo Harbour.

SOUTH AMERICA, *West Coas;, Sheet* 10.

Levata Bay, Port Flamenci, Caldera and Yagles Ports, Cobija Bay, Algodon Bay, Constitution Harbour.

SOUTH AMERICA, *West Coast,Sheet* 11, none.

SOUTH AMERICA, *West Coast, Sheet* 12.

Islay Bay, Atico Road, Ylo Road.

SOUTH AMERICA, *West Coust, Sheet* 13.

Lomas Road, Ports San Nicolas and San Juan, Yndependencia Bay.

SOUTH AMERICA, *West Coast, Sheet.* 14 Pisco Bay.

SOUTH AMERICA, *West Coast, Sheet* 15.

Casma Bay, Guarmey Bay, Barranca and Supe Bays, Huacho Bay, Chanca Bay, Santa Bay, Samanco or Guambacho Bay Port.

SOUTH AMERICA, *West Coast, Sheet* 16.

Lambayaque Road, Malabrijo Port, Huanchaco Road, Pacasmayo Road, Payta Port

At the last named port the surveys of Capt. Fitz Roy on the coast appear to terminate. There are yet some in the Pacific which we must reserve for our next number.

The following additions have just been made to our stock of Chinese hydrography.

TINGHAE HARBOUR, *in Chusan Island.—Surveyed by Lieut. R. Collinson, R.N.* 1840.

On a scale of about three inches to the mile, and includes the islands to the southward Ta Maou and Tsik ya. Our present number contains Lieut. Collinson's directions for this harbour.

SKETCH OF THE FOO-TO-SHAN CHANNEL.—*By Lieut. R. Collinson.* 1840.

On the scale of about two miles to the inch.

KINGTANG AND BLACKWALL CHANNELS.—*By J. Pascoe, second-master of her Majesty's ship Blenheim.* 1840.

On the same scale as the above.

SKETCH OF THE CHANNEL OF LOWANG.—*By B. Drury and B. Woolcombe, mates of her Majesty's ship Alligator.* 1840.

Also on the scale of about two miles to the inch. The foregoing are all important additions to our knowledge of the Chusan Archipelago.

CHINA,—*Sheet* 5,—*East Coast from the Kwesan Islands to Whang Ho Gulf* 1840.

This is a new edition of the Sheet 5, formerly noticed with the very important additions of the mouth of the Yang-tse-kiang by Capt. R. D. Bethune,* and the surveys above noticed of the Chusan Archipelago, entirely new features and differing much from the former sheet.

STRAIT AND ISLANDS OF MIATAO.—*By W. Dillon, second-master of her Majesty's ship Wellesley.* 1840.

The entrance to the Gulf of Pechili might serve as another title to the chart, including as it does the coast of Shan Tung on the south, and Korea on the north. It is on the scale of about two and a quarter miles to the inch.

APPROACH TO THE PEI HO RIVER AND THE SHA-LUI-TIEN BANKS.—*By. G. Norsworthy, master of her Majesty's ship Pylades.* 1840.

On the scale of about two and a half miles to the inch.

SKETCH OF HULU-SHAN BAY.—*By G. H. Skead, master of her Majesty's ship Modeste.* 1840.

On the scale of two miles to the inch.

CHINA,—*Sheet* 7,—EAST COAST.—*Yellow sea and Gulf of Pechili.* 1841.

This again is another edition of the former sheet VII. with a number of important additions and alterations, all resulting from the observations of our officers in their late visit to the coast. We look on them as most valuable contributions to Chinese hydrography, and as such highly creditable to their authors.

LOSS OF THE FAIRY.

INTO the world of sorrow it is beneficial to look at times, to consider those whose lot it is to eat the bread of affliction, and drink the water of tears. It is one of those wise dispensations of the Great Author of the Universe, to visit his creatures with calamities; and although there is grief which no human aid can relieve, still he has implanted in our breasts a principle, which quickened by the light of his divine will, rises to the relief of those who are unhappily visited with those calamities in direct proportion to the degree of their severity. Hence this favoured land reflects the grateful beams of charity, although it may teem with vice! Assuredly, if it be painful to contemplate the distress of our fellow creatures, there is something more than a feeling of pleasure in administering to their relief. It is a gratification not to be defined, because it is the performance of a part of the work of our Divine Author. We know that we are the instruments of his will;—in the work of charity, therefore, we are aiding in the performance of that will, and hence it is that the exercise of this principle is sweetness to the spirit, and the heart secretly approves the deed. Such reflections have been entertained by many, and we are induced to record them by having the grateful task to perform of laying before our readers the following statement of the committee of ladies and gentlemen, at Woolwich, signed by themselves, who undertook to work in the cause of the unhappy widows and orphans, left by the loss of her Majesty's late surveying-vessel Fairy. Their labours have indeed been crowned with success, and

* This officers account of the Yangtse-kiang we hope to publish in our next.—ED.

theirs is a full share of that gratification to which we have alluded. Our present number contains a list of the donors, as well as the distribution of the donations. The following is the statement of the committee.

"The Committee appointed to distribute the funds collected for the relief of the widows, orphans, &c., of the warrant and petty officers, seamen, and marines, of the late surveying-ship Fairy, having made a final distribution of the same, and closed their accounts, take this opportunity to express on behalf of the parties so deeply interested, their grateful acknowledgments to a generous public, for the very liberal subscription which has been made, and afforded them such timely relief.

"In performing their duty in the distribution of the funds, they have endeavoured to meet every case with that attention which they respectively claimed,—having provided for the children for a future period, when they become of a proper age to enter into business, as well as those who now so require it, and also guarded (where necessary,) against an improper outlay of the improvident by a weekly allowance, until their respective portions be expended. And in submitting a statement of the funds collected, and the way in which they have been applied, the Committee trust, the same will meet the entire satisfaction of those who have so liberally come forward on this melancholy occasion.

"Statement of the receipt and distribution of the funds raised by public subscription, for the relief of the widows, orphans, &c., of the warrant and petty-officers, seamen, and marines, of the late surveying-vessel Fairy, at Woolwich, between the 22nd of December, 1840, and 10th of June, 1841.

Total sum collected . .				£2262 12 4
Placed in various Savings Banks, under proper Trustees, for weekly payments to certain of the widows, and a payment of a sum to each of their children generally, at a future period, when of a proper age to receive it	1710	13	1	
Cash paid to the several claimants, principally throughout the winter, in weekly payments .	450	4	11	
Placed in Woolwich Savings Bank, as a reserve to meet any claims that may hereafter be proved within a certain period, otherwise to be then divided amongst the other claimants, (already prospectively done)	50	0	0	
Expenses for printing Circulars, Advertisements, Postage, Post-office orders, &c. . . .	51	16	4	
				£2262 12 4

The undermentioned individuals have been further provided for, by government, viz:

"Mrs. Kennedy, (widow of the boatswain,) allowed a pension of £25 a year. Mrs. Johnson, (widow of the captain's clerk,) who being on the half-pay list as a Purser, is allowed a pension of £45 a-year; five of her children are placed on the compassionate fund, with an allowance to each of £10 per annum, and the eldest son appointed as a clerk in Woolwich dockyard, the second son being already in the upper school

at Greenwich. Mrs. Gregory, (widow of the clerk's-assistant,) appointed as store matron of Haslar Hospital, and her son admitted into the upper school at Greenwich. Mrs. Davey, (widow of the ship's cook,) appointed as a nurse in the Royal Hospital at Greenwich.

The Trinity Board have also kindly placed the names of all the children of the warrant-officers and seamen on a pension of four shillings a month each, until they shall attain the respective ages, girls of fourteen years,—boys of twelve years; and the payment of a sum to each of their children at a future period, when of a proper age to receive it.

W. M. BURTON, Lieut.-Col, R.M. and Chairman.

CAROLINE E. PARKER.	S. RIDEOUT, *Commander, R.N.*
ELIZA ROBE.	F. L. MOUCHET, *Store Rec., Woolwich Yard.*
CHARLOTTE LANG.	JOS. PINHORN.

J. BREAKS, *Hon. Sec.*

The foregoing is a substantial proof that the widows and children of those who *fall in the service of their country* are not forgotten. Much as these unfortunate persons are indebted to the individuals of the committee, who cheerfully devoted time as well as means in their behalf, their gratitude is no less due to Captain P. Hornby, RN., C.B., the superintendant of Woolwich dockyard, who originated the subscription, and consigned it to the care of the committee. In fact, the sympathizing attention paid to the wants of the sufferers, as well as the judgment with which relief has been administered from the fund committed to their care, reflect the highest credit on all who have partaken in its management. Truly may they look back hereafter on the results of their exertions with satisfaction, and leave others to interpret them in the memorable words, "Go and do thou likewise."

BALTIC NAVIGATION.

Hull, May 24th, 1841.

SIR.—I quite agree with my friend Mexicano, with regard to his excellent remarks on the Navigation of the Baltic. One omission I think he has made in your number for April; if I am in error you must excuse me, for I have not the number by me, having sent it to my brother at Dantzic, and that is that there is now a fine schooner-rigged floating-light painted red, with a white cross, the same as their flag, moored on the Lille Ground at the entrance of the Grounds. It is an excellent mark in the night for running or turning, as you may anchor on either side of her. One pilot boat remains on board, giving the ships with contrary winds equal to two hours. The light is removed on the 21st December, and replaced early in the spring. It is expected that six more buoys will be laid in the Grounds this spring. I was informed by one of the most intelligent pilots, that he was summoned to appear before the Commission,—the king being present. The king

mentioned twenty-one buoys,—the pilot answered, but your Majesty how are we to live if twenty-one buoys are laid down: and thus the matter rests.

I strongly recommended to the pilot that the buoys should be laid down, and the government to pay the pilots the difference between what they actually received and the average for seven years.

The Russian government intend publishing a new chart of their waters, and any information shall be forwarded by your obedient servant.

A SUBSCRIBER.

The floating-light on the London Chest is placed as soon as the other lights are lit; it shews three lights, one above the top and the others suspended at the yard arms.

[Our correspondent urges upon us the necessity of floating-lights being placed on the Knobben, in the Cattegat, and off Falsterbo reef, stating that he has seen "numbers of ships on both those reefs." We have already expressed our opinion on the great advantage that would be derived to navigation by these two measures; indeed it must be perfectly evident, how desirable such safeguards to shipping must be, when that navigation is open; and they should take their stations for the summer months along with the other light vessels.—ED.]

BIOGRAPHICAL MEMOIRS.

ADMIRAL SIR LAURENCE WILLIAM HALSTED, G.C.B, was son of the late Captain Halsted, R.N., had a numerous family, ten of whom are living, seven daughters and three sons; the sons are in the service of the East India Company. The gallant deceased, when lieutenant in the Canopus first distinguished himself in Lord Rodney's action with the Count de Grasse, in 1782, and from his return to this country in the winter of the same year until 1791 saw but little service, when he was appointed to the Atalanta sloop, in the East Indies. In 1794 he was removed to the Hector, 73 guns, under the command of Rear admiral Sir George Montague, and subsequently was appointed to the command of the Venus, of 32 guns, which formed part of the squadron of Rear admiral Harvey in the North Sea. While commanding the Phœnix in 1796, he captured, after a gallant action, the Dutch frigate Argo, of 36 guns, and was favourably mentioned in Lord Duncan's despatches to the Admiralty, for his gallantry on that occasion. In 1800 he was actively employed in the blockade of Cadiz, under the command of Sir Richard Bickerton, and during his service in the Mediterranean commanded a squadron of frigates, and succeeded in capturing La Canere, a French frigate of 40 guns, and the Success, of 28 guns; and completely destroyed La Bravoure, a French frigate of 46 guns. He was subsequently, in 1807, selected by Sir Charles Cotton, then commander in chief of the Lisbon station, to serve as a captain of the fleet under his orders, and he was destined to perform the important and arduous duties of that appointment with credit to himself and satisfaction to the home government. He returned to England with Sir Charles Cotton in the Hibernia, in 1808. The deceased admiral was also a participator in the glory of Sir Richard Strachan's victory, and for his eminent services on that occasion was rewarded with a medal. He was in the receipt of a good service pension of £300 a year, being the senior flag officer enjoying that liberal allowance, and had an honorary reward from the Patriotic fund. His commission was dated as follows.—lieutenant, Dec. 8th, 1781; commander, Nov. 22d, 1790; captain, May 31st, 1791; rear admiral, July 31st, 1810; vice admiral, June 4th, 1814; and admiral, July 22d, 1830. In consideration of his brilliant services, her Majesty was pleased to nominate the gallant admiral a G.C.B., Feb. 24th, 1837.

REAR ADMIRAL SIR SAMUEL MOTTLEY, retired as rear admiral on half pay in 1837, after a service of within a few days of 70 years, having entered the navy the

16th of June, 1771, being then at a very early age. His commission was dated lieutenant, May 30th, 1782; commander April 29th, 1799; captain, April 29th, 1802; retired rear admiral, Jan. 10th, 1837,

COMMANDER E. SOUTHCOTT, R.N. At the time of the mutiny on board H.M.S. Hermione, was master of that ship, but sick in his cabin; and on the entreaties of his black servant, together with his services being required to navigate the ship, his life was spared. After being compelled to do that office, and after getting into Porto Cabello, the mutineers would have put him to death, but ere they could succeed in their design, the Spaniards got on board, and under their protection his life was preserved. On his return to England he was made a lieutenant. Capt. Southcott for many years has zealously laboured in the cause of education, more particularly dedicating his usefulness to a Bethel chapel and school for the children of sea-faring people, and with such success, that in shillings and coppers he has collected and applied nearly £3,000 for this purpose; and as an agent to a Naval and Military Bible Society, he has distributed twelve thousand copies of the scriptures, besides a host of tracts and prayer-books, among the seamen and soldiers who have shipped at Portsmouth.

CAPTAIN H. WEIR, C.B., commanded the Ferret gun-brig, beat off, after a gallant action, two French brigs-of-war of 16 guns each, in 1805, and was captured in her in the river Ems, after a gallant resistance, in 1807; was promoted from the Alban for a gallant action with a Danish flotilla, and posted from the Calypso, for his gallantry in an attack upon a Danish squadron on the coast of Norway, in 1812. He was in his 66th year. His commission was dated, lieutenant, 12th May, 1794; commander, 28th June, 1810; and captain, 22nd July, 1812.

MR. JOHN COOK, late master of the convict ship at Portsmouth; was a practical Christian, and of him it might be truly said he went about doing good: he was a veteran who had seen much service during the late war, seven times was he wounded, thrice was he shipwrecked, and upwards of a hundred times engaged with the enemy—he was a boarding officer under Sir E. Hamilton at the capturing of the Hermione frigate after the mutiny in that vessel.

ERRATA AND CORRECTIONS IN RAPER'S PRACTICE OF NAVIGATION.

(Continued from p. 63.)

Page 25, No. 97, to tables 58 and 59, add 56 and 57.
— 32, No. 107, *alter* BN. *to* BK.
— 41, No. 141, (3) *alter* adjoining *to* joining.
— 48, No. 170, line 5, *for* compass, *read* compass needle.
— 209, line 7, *alter* 52 *to* 64.
— 225, No. 701, (2) *alter* 63 *to* 65.
— 235, Note, *alter* Barckhardt *to* Burckhardt.
— 229, line 1, *alter* 698 *to* 697.
— 308, line 18, *alter the number* 443 *to* 442 *in both places.*
— 314, line 25, *alter* ⊙ 27° 18′ *to* ☽ 27° 18′.
IN THE TABLES,—page 93, col. (27) *for* Hogolen *read* Hogoleu.
Page 166, *alter the index of the log. tan.* 9·993398, *from* 9 *to* 8.
— 228, *alter* 8·3 *to* 8·5 in the columns 1h. 29m., 1h. 30m., and 1h. 31m.
— 241, at 61°, insert the decimal point between 9 and 41.

In the page of corrections and additions, it is stated that error is purposely retained in the diff. long. between Bombay and Mangalore; this is wrong. the diff. long. of these two places is rightly given in table 8; the confusion has arisen from the circumstance that the flagstaff at Mangalore has been shifted. The long. of Bombay being, doubtless, in error, there must be a discrepancy in the positions which depend partly on this, and partly on other places, but we cannot on the present occasion enter further into the point.

Admiralty Orders.

Admiralty, 20th May, 1841.

The Lords Commissioners of the Admiralty having caused a revision to be made of the prices at which Slop Clothing is issued to the crews of Her Majesty's ships, and having in consequence determined that an alteration shall take place in the prices at which such Clothing shall be issued in future; instead of those directed by Circular No. 83, you are immediately on the receipt of this Order, (which is to be noted in the Log Book) to cause a Survey to be held before any further issues are made, upon the articles of Slop Clothing remaining in charge of the Purser, for the purpose of shewing the quantity and value thereof, the Purser taking care to credit or charge himself in his Slop Account with the difference in value between the old and new prices. And Slops are thenceforward to be issued at the prices now fixed.

A copy of the Report of Survey of remaining Slops is to be sent to the Comptroller of Victualling.

By Command of their Lordships,
R. MORE O'FERRALL.

To all Captains, &c.

New issuing prices for Slop Clothing.

MEN'S CLOTHING.

	s.	d.
Blue Cloth—Jackets, No. 1	18	0
——— Ditto, No. 2	10	0
——— Trousers, No. 1, per pair	12	0
——— No. 2, ditto	6	0
——— In the piece and materials for Jackets, No. 1, per yard	9	6
——— In the piece and materials for Trousers No. 1, per yard	8	6
——— In the piece and materials for Jackets, No. 2, per yard	6	6
——— In the piece and materials for Trousers No. 2, per yard	5	0
Duck in the piece and materials, per yard	0	10
Flannel in the piece and materials, per yard	1	0
Worsted White knitted Jackets each	5	6
——— Blue ditto	6	0
——— White wove ditto	3	9
——— Blue ditto	4	0
——— Stockings, per pair	2	0
——— Mitts, per pair	0	8
——— Caps, each	1	9
Blue baize in the piece and materials, per yard,	2	0
Blue serge frocks, each	3	6
Blue serge in the piece and materials, per yard	1	0
Blankets, each	6	6
Shirts, each	2	3
Black Silk Handkerchiefs, each	3	9
Caps for boats crew, each	1	9
Shoes, per pair	4	0
Flushing Jackets, each	11	6
——— Trousers, per pair	7	0
——— in the piece and materials for Jackets, per yard	7	0
——— In the piece and materials for Trousers, per yard	8	0
Marks of Distinction, 1st class, each	3	0
Ditto 2d class, each	2	0
Wrappers, each	0	9
Cases, each	1	0
Types for marking Seamen's Clothing, per set	10	6
Ink Bottles	0	0

BOYS' CLOTHING.

	s.	d.
Blue Cloth Jackets, each	7	6
——— Trousers, per pair	5	3
Worsted White Knitted Jackets, each	3	6
——— Blue Wove ditto	3	9
——— White ditto	3	3
——— Stockings	1	3
Shirts, each	1	9
Shoes, per pair	3	0
Hair Beds, each	11	6

Admiralty, 25th May, 1841.

With reference to the Circular Order No. 63, the Lords Commissioners of the Admiralty are pleased to direct, that the following shall in future be the standard for Boys to be received into Her Majesty's navy :—viz.

1st Class—If from 17 to 18 years of age, not less than 5 feet 3 inches in height.

From 19 years of age and upwards, not less than 5 feet 4 inches.

2nd Class—Not to be entered under 14 years of age, 4 feet 10 inches in height, and 95 lbs. weight.

By Command of their Lordships,
R. MORE O'FERRALL,

To all Commanders, &c.

Admiralty, 5th June, 1841.

The Lords Commissioners of the Admiralty having observed that Mates, when promoted to the rank of Lieutenants, continue to negociate the Tickets for their services as Mates, in the same manner as when they wer Petty Officers, under the 13th clause, Act. 11, Geo. IV., Cap. 20, although that clause sanctions the negociation of the Tickets of Petty Officers and Seamen only, are pleased to direct, that as Mates are now Warrant Officers under the authority of Her Majesty's Order in Council of the 10th of August last, they shall discontinue the practice of negociating their Tickets on being promoted.

By Command of their Lordships,
JOHN BARROW.

Promotions and Appointments.

(From the Naval and Military Gazette.)

PROMOTIONS.

Captain—E. Belcher, P. J. Blake, W. Warren, H. Eyres.

Commanders—G. Goldsmith, H. Kellett, R. B. Watson, J. Hay, J. E. Bingham, J. P. Bower, B. J. Sulivan.

Lieutenants—J. Daly, J. Hancock, C. B. Jeffrys, R. Edwards, A. Vyner, G. C. Fowler, W. G. Luard, W. F. Robinson, J. Borlase, R. R. Western, E. M. Lyons.

Royal Marines—Capt. S. B. Ellis recommended for Brevet rank of Major in the Army.

The Good Service Pension of £300 per annum, has been bestowed on that highly distinguished officer, Sir J. Rowley, Bart. GCB., GCH., Admiral of the Blue.

APPOINTMENTS.

Commanders - W. W. Chambers (act) to *Pelorus*. A. Morrell (1828) to *Calcutta*. W. Louis (1838) to command *Stromboli*. R. Byron (1836) to command *Champion*. J. P. D. Larcom (1829) to command *Scout*.

LIEUTENANTS—J. P. Roepel (1814) to command *Raven*. J. Fitzjames (1838), C. S. Norman (1840), and W. Butler (1840) supernumeries, and E. Bullen, to *Cornwallis*. E. H. Kenny (1829) to *Dublin* from *Excellent*. R. O'Brian (1838) *Belleisle*, v. W. Need (1838) to *Monarch*. J. A. Wright (1813) to command *Skylark*. A. C. May, (1841) confirmed in command *Skipjack*. C. J. Walton (1840) to *Princess Charlotte*. Z. Andrews (1838) to *Vernon*, v. Sinclair. J. Clavell (1838) to *Dublin* as Fag-Lieutenant to Rear-admiral Thomas. E. R. Power (1839) to *Excellent*. C. Starmer to *Pelican*, v. Hay sick.

MATES—S. H. Derriman (1835) T. E. Sanders, W. H. Mowbray, and R. Hall (1839) to *Dublin*. C. J. Austen (1840) and H. F. N. Rolfe (1838) to *Excellent*. H. J. Giles (1831) to *Caledonia*. E. Hill (1840) to *Herald* from *Indus*. C. Snell to *Queen*. M. Burrows, (1839) to *Excellent*. G. H. Hodgson to (1838) to *Cornwallis*.

SECOND-MASTERS—J. Whiting to *Calcutta*. J. M. Willis to *Fair Rosamond*.

PURSERS—J. W. Nicholls (1837) to be secretary to Admiral Sir E. Codrington, G.C.B., G.C.M.G., commander-in-chief at Portsmouth. T. Woodward (1836) to *Daphne* from *Wasp*.

MIDSHIPMEN—W. F. Lapidge, T. D. Sulivan, B. S. Pickard, and — Blackett, D'Aeth to *Queen*. H. F. Elliot to *Dublin*. A. Radcliffe to *Bittern*.

VOL. 1st Class—E. F. H. Holme to *Dublin*. W. F. Congreve to Bittern. H. B. B. Bennett and S. Wolridge to *Dublin*.

MASTER'S-ASSISTANT—G. S. Hodges to *Victory*. G. Goman to *Vernon*.

ASSISTANT-Surgeons—H. D. Shea, (1832) to Naval Hospital at Cape of Good Hope. J. Niven (act.) to *Acorn*. J. Wilmott and T. Wallice to *Caledonia*. F. M. Rayner to *Queen*. W. B. Fegan to *Vernon*. W. J. Gruggen to Haslar Hospital.

CHAPLAINS—H. Salvin (1823) to the Living of Alston. J. Wilmot to *Caledonia*. P. Somerville (1836) to *Edinburgh*. R. Wilson (1834) to *Dublin*. S. Slight to *Winchester*.

NAVAL INSTRUCTORS—W. Whitmarsh to Vernon. M. P. Sambell to *Calcutta*.

CLERK—J. Martin (assist.) to *Dublin*. G. Shambler to *Cornwallis*. C. J. Martin (assist.) to ditto. J. Retallick and J. J. Rutter supernumeries to ditto for service of ships in India.

COAST-GUARD—Lieutenants R. Connor (1807) and A. Bolton (1825) to be Chief Officers.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ACORN, 16, Com. J. Adams, 17th June sailed for Cost of Africa.

BELLEROPHON, 80, Capt. C. J. Austen 25th May, arrived at Portsmouth, 5th June paid off.

CORNWALLIS, 72, Capt. P. Richards, 10th June moved into the Sound.

DEE, (st. v.) Com. J. Sherer, 15th May arrived at Woolwich.

EDINBURGH, 72, Capt. W. Henderson, 14th June arrived at Portsmouth.

ELECTRA, 16, Com. E. R. P. Mainwaring, 12th June arrived at Portsmouth, from the Pacific.

JASEUR, 16, Com. F. M. Boultbee, 23 May, arrived at Plymouth from Gibraltar, 24th moved into harbour.

NAUTILUS, 10, Lieut. Com. G. Beaufoy, 4th June paid off at Portsmouth.

NIGHTINGALE, Lieut. W. Southey, 24 May arrived at Portsmouth.

PELICAN, 15, Com. C. G. E. Napier, 28th May left Portsmouth for Lisbon.

REINDEER, 6, Lieut. P. Bisson, 26th May left Portsmouth for Gibraltar.

SAVAGE, 10, Lieut. J. H. Bowker, 25th May arrived at Plymouth from Bristol.

SPITFIRE, (st. v.) returned to Woolwich from Portsmouth.

AT PORTSMOUTH—*In harbour*—Queen, Victory, Dublin, Excellent, Bittern, Alban, Royal George.

AT SPITHEAD—Monarch, Indus, Edinburgh, Vernon, Electra, Fair Rosamond.

AT PLYMOUTH—*In harbour*—Caledonia, San Josef, Champion, Savage, Carron.—*In the sound*—Impregnable, Implacable, Cornwallis, Belleisle, Jaseur.

ABROAD.

ANDROMACHE, 26, Capt. R. L. Baynes, CB., 16th March sailed from Cape for Western Coast.

BONETTA, Lieut. F. W. Austen, 13th May arr. at Tenerife.

CASTOR, 36, Capt. E. Collier, 21st May left Malta for Syracuse.

CYCLOPS, 19th, May left Malta for Corfu.

CAMELEON, 10, Lieut.-Com. G. M. Hunter, 19th March in Simons Bay, 9th April remained.

DAPHNE, 18, Com. J. W. Dalling, 1st May at Smyrna.

DIDO, 18, Capt. L. Davies, 3rd May arrived at Smyrna.

ENDYMION, 30, Capt. Hon. F. W. Grey, 30th March arr. at Cape on her way to India, 9th April remained.

FAVORITE, 18, Com. Sulivan, (act.) 21st Feb. left Hobart Town for New Zeeland.

HAZARD, 18, Com. Hon. C. G. J. Elliott, 23rd May left Malta for Genoa.

LARNE, 18, Com. J. P. Blake, 13th April left Ceylon for Bombay.

LILY, Acting-Com. Seymour, 13th March left Mozambique, 4th April arr. at Cape.

MEDEA, (st. v.) Com. F. Warden, 13th May arrived at Malta from Beyrout.

ORESTES, 18, Com. P. I. Hambly, 22nd March at Magellan.

PRINCESS CHARLOTTE, 104, Capt. A. Fanshawe, 19th May left Malta for Corfu.

RACER, 16, Com. G. Byng, 15th May, at St. John, New Brunswick.

TALBOT, 26, Capt. H. Codrington, 29th May left Malta for Corfu.

SOUTHAMPTON, Capt. Sir W. Hillyar, (Flag of Rear Admiral Sir E. King) 19th March in Simons Bay, 9th April remained.

WATERWITCH, 10, Lieut. Com. H. J. Matson, 19th March in Simons Bay.

WIZARD, 10, Lieut. Com. T. F. Birch, 9th April at the Cape.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Broomfield, Deptford, Kent, on the 4th June the lady of Lieut. W. Triscott, of H.M.S. Calcutta, of a son.

Marriages.

At the Palace Chapel, Valetta, on the 10th May, Capt. R. S. Robinson, R.N., to Clementia, daughter of Sir J. Louis, Bart., Rear Admiral Superintendent of H. M. Dockyard, Malta.

On 8th June, at Aston, Herts, C. Stanley, Esq., to Elizabeth Rosamond, widow of R. H. Stanhope, Esq., Commander R.N.

On the 12th of June, at Kingston, H. Burney, LLD. of Gosport, to Cecilia Caroline, daughter of Capt. Searle, C.B., R.N.

At Malta, Lieut. W. W. Lillicrap, RM, son of Capt. J. Lillicrap, RN., to Isabella eldest daughter of W. Robertson, Esq., Chief Magistrate of Judicial Police there.

On the 15th at Kingston, Mr. J. F. Boxer, RN., to Matilda Mary, daughter of T. Surdee, Esq. Naval Yard, Portsmouth

At Stoke Damerel, Devon, M. George Lundy, of H M.S. Edinburgh, to Ann, second daughter of Mr. J. Kemmish, of H.M. Dockyard, Portsmouth.

At Malhablishwoar, Bombay, on the 9th March, A. Morris, Esq., 4th N. I., to Jane, daughter of Capt. Renwick, RN.

At St. George's, Hanover-square, J. R. Whyte, Esq., of Hotham, Yorkshire, to Frederica, daughter of the late Capt. C. Walker, RN.

E. Phillips, Esq. Lampeter, Pembroke, to Augusta, daughter of the late Vice Admiral Scott.

Deaths.

At Swarthdale, Rear Admiral Sir R. Barrie, KCB., KCH.

In Penny Street, on the 27th May, S. Mottley, Esq., Rear Admiral of the White, aged 77, deeply lamented.

On the 17th of June, at Portsmouth, Emily, the wife of J. S. Taylor, Esq., RN., Naval Surveying Service.

At Wotton under Edge, Emily, daughter of Capt. J. C. Carpenter, KH., RN.

On 8th June, at Bembridge, Isle of Wight, Edward Fisher, son of Lieutenant Johnston, aged 4 years.

At Totten, near Southampton, Mrs. Wood, wife of Captain Starr Wood, and mother of Commander Wood, RN.

On the 30th April, at Smyrna, from a fractured skull, by falling from the yard arm of H.M.S. Daphne, whilst employed on duty aloft, Mr. C. Lloyd, midshipman.

At Sea, on board H.M.S. Bellerophon, on the 9th April, Mr. H. Parker, second master, son of Lieut. H. Parker, RM., aged 24 years, from disease contracted on the Coast of Syria.

Her Majesty's Ship Edinburgh brought home a very beautiful monument, which the officers and men of that ship had made at Malta, in memory of their brother officers and men who were killed and died at the seige of Acre, belonging to the Edinburgh. It is put up in Kingston churchyard, between those of the Royal George and Hero.

METEOROLOGICAL REGISTER.

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

From the 21st of May to the 20th of June, 1841.

Month Day	Week Day	Barometer, In inches and Decimals		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P. M.
		In Dec.	In. Dec	o	o	o	o						
21	F.	29·65	29·61	57	60	41	66	SE	NE	2	2	bc	or 3)
22	S.	29·64	29·72	58	60	55	63	SE	SW	1	1	o	od (3)
23	Su	30·00	30·10	59	67	46	68	SE	S	1	2	bc	bc
24	M.	30·18	30·16	61	69	49	70	NE	NE	2	2	bc	bcm
25	Tu.	30·17	30·17	63	69	53	71	NE	NE	2	3	bcm	bc
26	W.	30·09	30·09	65	76	56	77	NE	NE	2	3	b	b
27	Th.	29·93	29·89	67	78	56	79	NE	E	3	3	b	bctlr 4)
28	F.	29·97	30·02	67	74	62	77	S	S	2	2	bc	bc
29	S.	30·12	30·11	62	68	53	69	SW	SW	1	1	bm	bcm
30	Su.	30·04	30·02	59	69	55	70	N	NW	2	2	bcp 1)	bc
31	M.	30·04	30·06	60	73	51	74	W	SW	2	2	bc	bcm
1	Tu.	30·17	30·17	60	67	51	68	NW	W	3	2	bc	bc
2	W.	30·22	30·22	60	68	51	69	W	SW	2	2	bc	bc
3	Th.	30·22	30·21	59	71	53	72	NW	SW	1	4	bm	b
4	F.	30·37	30·36	57	68	45	69	NW	W	2	2	bcm	bcm
5	S.	30·21	30·13	59	68	49	69	NW	NW	2	3	bcm	od (4)
6	Su.	30·00	29·99	53	55	50	56	N	N	3	2	bc	bc
7	M.	29·91	29·94	52	52	43	54	N	N	6	7	qbc	qop (3)
8	Tu.	29·94	29·96	49	53	45	55	N	N	5	4	qbcp 2)	bc
9	W.	29·93	29·95	50	54	46	56	N	N	3	3	o	o
10	Th.	29·82	29·75	52	67	44	68	N	NW	3	2	o	bc
11	F.	29·69	29·78	50	52	45	53	N	N	3	3	bc	o
12	S	29·82	29·89	49	51	44	52	N	N	6	5	qod (2)	o
13	Su	30·02	30·04	48	60	40	61	N	N	3	3	o	bc
14	M.	30·06	30·03	53	68	41	69	NW	NW	3	2	bm	bc
15	Tu.	29·91	29·98	57	61	53	63	NW	NW	3	4	o	bc
16	W.	30·23	30·22	59	63	39	66	SW	SW	2	3	b	bc
17	Th.	30·10	30·05	58	66	46	68	SW	SW	4	3	bc	bc
18	F.	29·80	29·72	62	74	43	76	SE	SE	2	3	b	bctlr 4)
19	S.	29·64	29·67	59	63	54	68	SW	W	2	4	op (1) 2)	bcp 3)
20	Su.	29·77	29·78	60	60	45	61	SW	SW	4	5	bc	or (4)

May.—Mean height of barometer = 29·880 inches; mean temperature=57· degrees; depth of rain fallen = 1·81.

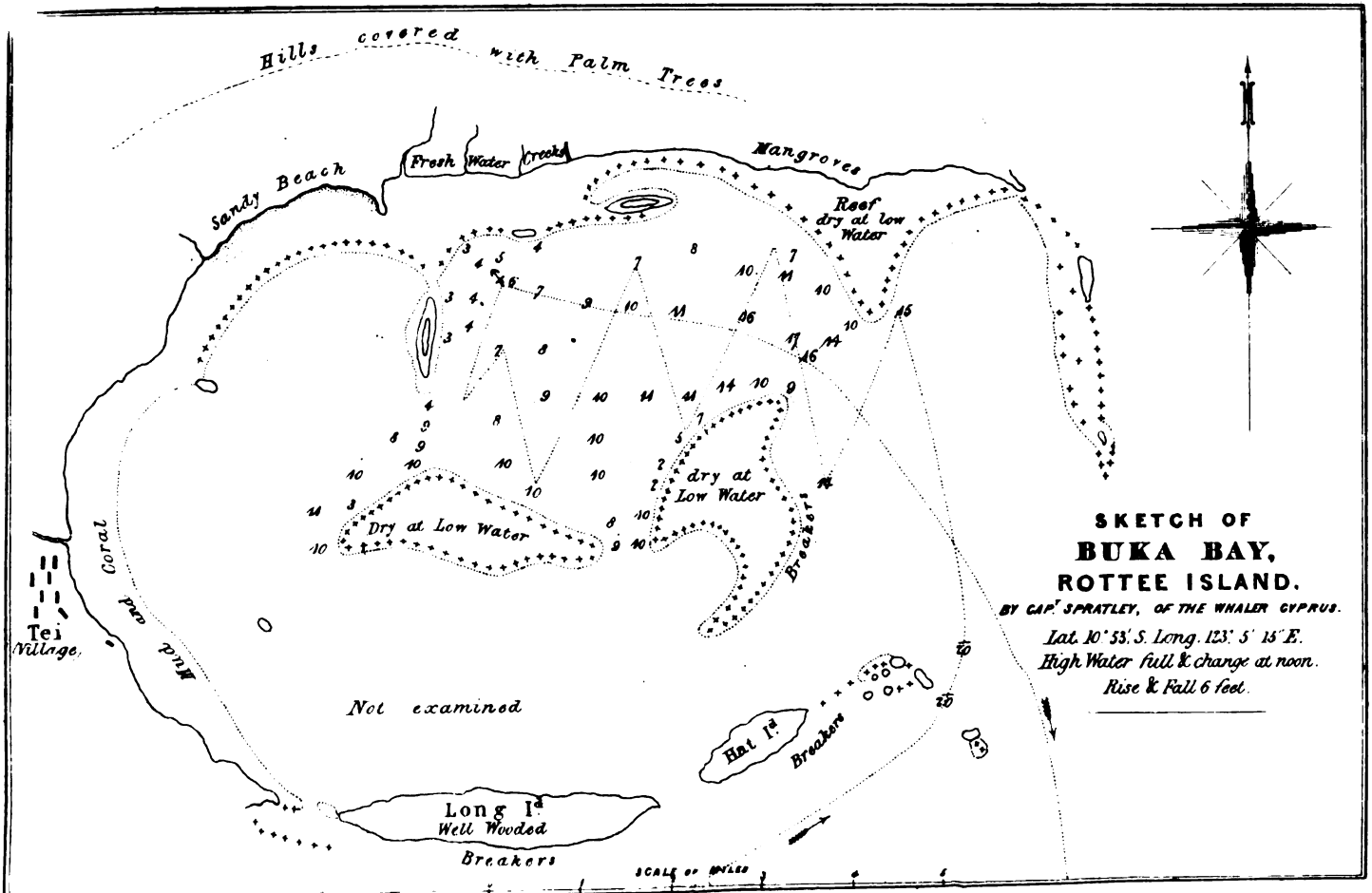
TO OUR FRIENDS AND CORRESPONDENTS.

On considering the letter of Veritas in all its bearings, we must decline publishing it, in preference to the great quantity of useful matter with which our pages are crowded.

We have received Mr. Liddell's letter, but far too late for our present number.

The paper on Local Attraction in our next.

Mr. Kisbee's plan received. We will further his good intentions all we can.



The Variation of the Compass.

The variation of the compass must ever be a subject of interest to seamen, and an authentic register of it, from an infallible source, as time marches on, will form useful matter for reference. The subject of magnetism has been pursued lately with more than common energy on the continent, and has also employed the attention of some of our own men of science. Magnetic observations have been made at various places by them, in Great Britain and Ireland, and an expedition under the command of Capt. J. C. Ross, is now investigating the subject abroad, by order of the government, at the recommendation of a committee of the Royal Society. In connexion with this measure, also, magnetic observatories have been established in various parts of the British dominions abroad, as well as at the Royal Observatory at Greenwich; and as it will no doubt interest our readers, our present purpose is to lay before them the description of the latter, as we find it recorded in the introduction to the Greenwich observations for 1839, by Mr. Airy, the Astronomer-royal.

Observations of the Free Magnetic Needle, &c.

In consequence of a representation of the Board of Visiters to the Lords Commissioners of the Admiralty, an additional space of ground on the south-east side of the existing boundary of the Observatory grounds was inclosed from Greenwich Park for the site of a Magnetic Observatory, in the summer of 1837. In the spring of 1838, the Magnetic Observatory was erected. Its nearest angle is about 230 feet from the nearest part of the Astronomical Observatory, and about 170 feet from the nearest outhouse. It is built of wood; iron is carefully excluded. Its form is that of a cross with four equal arms, nearly in the direction of the cardinal magnetic points: the length within the walls, from the extremity of one arm of the cross to the extremity of the opposite arm, is forty feet: the breadth of each arm is twelve feet. The height of the walls inside is ten feet, and the ceiling of the room is about two feet higher. The northern arm of the cross is separated from the central square by a partition, so as to form an ante-room. The meridional magnet is mounted in the southern arm: it is intended to mount a bifilar magnet in the eastern arm, and a magnetometer for variations of vertical force in the western arm.

The theodolite with which the meridional magnet is observed is by Simms: the radius of its horizontal circle is 8·3 inches: it is divided to 5′, and read to 5″ by three verniers, carried by the revolving frame of the theodolite. The fixed frame stands upon three foot-screws, which rest in brass channels let into a stone pier, that is firmly fixed in the ground and unconnected with the floor. The revolving frame carries the Y's (with vertical adjustment at one end) for a telescope with transit axis: the length of the axis is ten inches and a half: the length of the telescope twenty-one inches: the aperture of the object-glass two inches. The Y's are not carried immediately by the T head which crosses the vertical axis of the revolving frame, but by pieces supported by the ends of that T head and projecting horizontally from it; the use of this construction is, to allow the telescope to be pointed sufficiently high to see δ Ursæ Minoris above the pole. The eye-piece of the telescope carries only one fixed horizontal wire, and one vertical wire moved by a micrometer-screw. The stone pier is fixed nearly in the line which divides the southern arm of the cross from the central square: in the roof of the building an opening is made (closed by shutters), in the direction of the astronomical meridian of the pier, through which circum-

polar stars can be observed, as high as δ Ursæ Minoris above the pole, and as low as β Cephei S. P.

For supporting the magnet, a braced tripod wooden stand is provided, resting on the ground and unconnected with the floor. Upon the cross-bars of the stand rests a drum (having a covering of glass), within which the magnet vibrates. On the southern side of the principal upright piece is a moveable upright bar, turning in the vertical E. and W. plane, upon a pin in its centre, which is fixed in the principal upright: this moveable upright piece carries at its top the pulleys for the suspension of the magnet: and this construction is adopted in order to give an E. and W. movement to the point of suspension, by giving a motion to the lower end of the bar. The top of the upright piece carries a brass frame with two pulleys: one of these pulleys projects beyond the north side of the principal upright, and from it depends the suspension skein: the other pulley projects on the south side: the suspension skein being brought from the magnet up to the north pulley is then carried over it and over the south pulley, and is then attached to a string, which passes downwards to a small windlass, that is carried by the lower part of the moveable upright. The intention of this construction is, to make it easy to alter the height of the magnet without the trouble of climbing to the top of the frame. The height of the two pulleys above the floor is about eleven feet nine inches, and the height of the magnet is about three feet: so that the length of the free suspending skein is about eight feet nine inches.

The magnet was made by Meyerstein, of Gottingen: it is a bar two feet long, one inch and half broad, and about a quarter of an inch thick: it is of hard steel throughout. The suspension piece was also made by Meyerstein, but it has since been altered under my direction by Simms. The magnet is not now inserted endways in its support, but sideways; a double square hook being provided sustaining it: and (by an alteration very lately made) the upper part of the supension-piece is simply hooked into the skein.

The suspending skein is of silk fibre, in the state in which it is first prepared by silk-manufacturers for further operations; namely, when seven or more fibres from the cocoon are united by juxtaposition only (without twist) to form a single thread. It was reeled for this purpose at my request by Mr. Vernon Royle, of Manchester. The skein is strong enough to support perhaps six times the weight of the magnet, &c.: I judged this strength to be necessary, having found that a weaker skein (furnished by Mr. Meyerstein) broke ultimately even with a smaller weight.

Upon the magnet there slide two small brass frames, firmly fixed in their places by means of pinching-screws. One of these contains, between two plane glasses, a cross of delicate cobwebs: the other holds a lens, of thirteen inches focal length and nearly two inches aperture. This combination, therefore, serves as a collimator without a tube: the cross of cobwebs is seen very well with the theodolite telescope, when the suspension bar of the magnet is so adjusted as to place the collimator object-glass in front of the theodolite object-glass, their axes coinciding. The wires are illuminated by a lamp and lens in the night, and by a reflector in the day.

In order to diminish the extent of vibrations of the magnet, a copper bar, about one inch square, is bent into a long oval form, intended to contain within itself the magnet (the plane of the oval curve being vertical). A lateral bend is made in the upper half of the oval, to avoid interference with the suspension-piece of the magnet. The effect of this copper bar is very striking: it appears from rough experiments, that every second vibration of the magnet (that is, when a direct and reverse swing have been finished) is reduced in the proportion of 5 : 2 nearly. Two such bars were mounted, for convenience of use, in different positions of the magnet. Experiments made in the year 1840 have given reason to think that one of them (that which was used in 1839 with the collimator west) is not entirely free from magnetic action: and the determinations, therefore when the collimater was west, may be liable to an unknown constant error from this cause.

But in laying before our readers the foregoing account of the place, in which the magnetic observations are made, it was no less our object to place on record the following, which have been kindly supplied to this journal by the Astronomer-royal.

Royal Observatory, June 25th, 1841.

Mean Variation.	°	′	″
1840—November	23	23	36
December	23	21	11
1841—January	23	11	46
February	23	17	35
March	23	19	16
April	23	11	48
May	23	17	45

(Signed) G. B. AIRY, *Astronomer-Royal.*

It will be seen from the above, that the variation of the compass is decidedly on the decrease in this country, although fluctuating very considerably, indeed, more we understand in one day sometimes than in a whole month. But this, and several other interesting facts relating to the phenomenon of magnetism as observation discovers them, as well as the mean magnetic variation for each month, we hope hereafter to be enabled to communicate to our readers.

HOUTMANS ABROLHOS.—*By W. J. C. Wickham, Commander, H.M.S. Beagle.*

THE extensive cluster of small islands and rocks forming Houtmans Abrolhos, have rarely or never been visited, excepting by those who have been unfortunate enough to suffer shipwreck upon the dangerous reefs that form their sea, or western barrier; and that they have been the cause of such disasters, the western shores of those islands, composing the southern or Pelsarts Group most plainly shew, being literally strewed with wreck, some of which is of a large scantling, and apparently very old, probably the remains of the Dutch ship Batavia, in which Commodore Pelsart was wrecked in 1629, and of the Zeewyk wrecked in 1729.

Whether these shoals were discovered by Frederic Houtman, (whose name they bear,) or by the unfortunate circumstance of Pelsart being thrown upon them in a gale of wind, appears doubtful; at all events, little has ever been known of them, beyond their existence, since that period. They are of great extent, occupying a space of forty-eight miles in a N.N.W. and S.S.E. direction, and form three separate groups, the southernmost of which has been named Pelsart Group, the next Easter Group, and the third the Northern Group.

Wreck Point, which is the south end of the southern island of Pelsarts Group, is in latitude 28° 59¼′ S., and longitude 113° 56′ 30″ E., or 1° 47′ 7″ west of Swan River; from this the island extends N. 26° E., nearly six miles, curving slightly to the westward: it is a narrow ridge, chiefly of dead coral, rarely more than an eighth of a mile wide

in any part, but mostly less. The highest and most conspicuous part is a clump of mangroves fifteen feet high, about half way between the north and south extremes. The base of this island, as of all the islands, rocks, and reefs of the Abrolhos, is a calcareous limestone, of which the principal ingredients appear to be coral and shells; and it is remarkable that all the islands on the east side of the two southern groups, are merely ridges of dead coral and shells, nearly void of vegetation, whereas those on the west sides are flat blocks of limestone about five feet above water, with a covering of light sandy soil, that gives growth to a stunted and scrubby vegetation, of which, several kinds of samphire form the principal part.

From Wreck Point a narrow reef extends about a mile to the S.S.W., gradually curving to the north-west, in which direction it extends twelve miles, and forms the sea barrier of a large lagoon, of which, South Island and the reefs and islets north of it are the eastern boundary; this lagoon is thickly strewed with shoal patches of coral, and has several small islets in it. For two miles and a half from the north end of South Island is a continuous cluster of coral reefs and small islets, between which and the low coral banks, a little more than a mile to the northward is a clear passage a mile wide, with from thirteen to fifteen fathoms in mid-channel. Three miles N.N.E. of these coral banks is a small Hummock Island, having a small mound thirteen feet high at its south-eastern end; it is surrounded by a reef, which in no part extends more than a quarter of a mile off, but there is discoloured water a long half mile off the north-west end. This islet is in latitude 28° 48¼′ S., and is the north-easternmost of Pelsarts Group; between it and the patch of coral banks to the S.S.W., is a clear passage with twenty to twenty-five fathoms water.

Under the northern part of Pelsarts Group there is anchorage in fifteen to twenty fathoms, and shelter from all southerly winds, and probably a well sheltered anchorage may be found in the lagoon, between Square island and the mangrove islets, where there is from ten to seventeen fathoms water. There are several spaces of deep water in the southern part of the lagoon, where there are no doubt good anchorages, but this part of it is so strewed with shoal coral patches, that it would be a tedious business to get a ship in.

Gun islet is the north-western islet of this group; observations were taken on its south end, which place it in latitude 28° 53¼′ S., and longitude 1° 53′ 30″ W. of Swan River. A brass 4-pounder swivel was found upon it, and several other articles that shewed it had once been the temporary retreat of some shipwrecked crew; and from the Dutch sketch of a part of these islands, shewing the place where the Zeewyk was wrecked, it is no doubt the same island to which her crew escaped.

The north-west end of the reef forming the sea barrier of Pelsarts Group, is in latitude 28° 51′ S., between which and the southern extreme of the reefs off the next cluster, or Easter Group, is a clear passage of four miles in width, through which the crew of the Zeewyk got to sea, in a boat built from the wreck; it has been called Zeewyk Passage in consequence.

It was sailed through by the Beagle, and appears quite free from

danger; the middle of it is in latitude 28° 49¼′ S. After passing to the westward of a line between the barriers, or western reefs of Pelsart and Easter Groups, the water deepens quickly, and at eight miles distance there is no bottom with 166 fathoms of line.

The Middle or Easter Group is very similar to that south of it, the western boundary being a reef upon which the sea is always breaking heavily, and the eastern limit of the lagoon is formed of low islands and coral banks, in no part over thirteen feet high, but generally under eight feet.

As at Pelsarts Group, anchorage may be had under the northern part of this, and there is a good harbour formed by Rat Island, and the reefs to the eastward of it named Good Friday harbour, where a ship will be sheltered from all sea; but as at all the anchorages amongst the Abrolhos will feel the full force of every wind, no part of the islands being of sufficient elevation to afford shelter; but as the water is perfectly smooth within the reefs, there can be no danger, providing a proper scope of cable be given. The only entrance to Good Friday harbour is from the northward, between the reefs that extend N.W.b.N. from the north end of Rat Island, and those to the eastward that extend two miles and a half from the islands that form the eastern side of the lagoon. The edges of all these reefs are well defined,—this passage is half a mile wide, and free from all impediments, until the north-west end of Rat Island bears south 38° west, (magnetic) three-quarters of a mile distant, and a small white bank that is half a mile north of the north-west point of Rat Island, and generally uncovered, west 10° south, there are then some small patches of coral with very little water on them. A masthead look-out will be the best guide for keeping clear of them; with a leading wind it would be best to pass to the westward of them, keeping a good look-out for the north-eastern part of Rat Island reef, which is very little more than a sixth of a mile from these patches. You will be to the southward of them when the small white bank bears west 20° north, when a more easterly course may be steered for an anchorage. The Beagle's anchorage was with the north-west point of Rat Island, and a dry rock off the north point on, bearing west 16° south, and the north point of an island south of Rat Island south 10° west: this island appears joined to Rat Island on this bearing, and appears to be the south extreme of Rat Island; perhaps better anchorage may be had by keeping the rock and north-west point in the same bearing; but by bringing the same north point to bear more westerly, south 13½° west, both anchorages are in fifteen fathoms. The entrance to this anchorage between the reefs, may be passed by keeping the east extreme of Rat Island south 10° east, until nearing the small coral patches, but at all times the eye will be the best guide; the observation spot at the north-east corner of Rat Island, is in 28° 42′ 28″ south, and longitude 1° 57′ 55″ west of Swan River.

The north-east extreme of Easter Group is a small islet of dead coral five feet high, surrounded by a reef that extends half a mile off its north-east end. There is a good passage between this island and those to the southward of it, a mile and a quarter wide, with twenty and twenty-two fathoms.

The north-west point of the reefs of Easter Group is in latitude

28° 39′ south, between which and Evening reef (which is the south-western reef of the North Group,) there is a clear passage six miles wide, the middle of which is in latitude 28° 35′ south.

The northern group is more extensive than either of the others, occupying a space of latitude between 28° 15½′ and 28° 33′; the islands also differ from those of the two southern groups, being much larger and higher, and in most parts thickly covered with brushwood, amongst which are bushes and stunted trees of a sufficiently large growth for firewood: the principal islands of this group are the east and west Wallabi Islands, so named from the number of those animals we found upon them; they are a mile apart, but connected by a reef that is nearly dry at low water, and on the southern edge of which are the Pigeon Islands; they are low and rocky, and covered with brushwood and shrubs. On the north-easternmost of these islands the observations were made which place its north end in latitude 28° 27′ 21″ S.; variation 4° 10′ westerly.

A good port is formed between east Wallabi Island and the low islets and reefs south and south-east of it, named Recruit harbour: it is easy of access by bordering towards the south east side of east Wallabi Island, which may be approached within a sixth of a mile. After passing Fish Point, which is the north-east point of the island, and may be passed at an eighth of a mile distant, stand on to the southward until the bare-topped sand hill at the south end of west Wallabi Island bears S.W. ¼ W. (mag.) it will then be on with the north end of the north-east Pigeon Island; steer for it, till Flag Hill bears N. ½ E., then a remarkable sand hill on the north-western side of the island, will first be open to the westward of Eagle Hill. From this steer south, until the north end of the Pigeon Island bears west, and anchor in ten to twelve fathoms, soft bottom, and about one-sixth of a mile from the reefs: there will be only one point open between Fish Point and the north-west point of the reef that forms the east side of the anchorage.

This is a very secure anchorage, but from its contracted size, a ship should moor. In standing for the anchorage after passing Fish Point, some patches of coral will be passed, with five and five and a half fathoms water on them, but there does not appear to be less; they may be avoided by a masthead look-out, which is at all times advisable when sailing amongst coral reefs. Flag Hill is fifty feet high, and may easily be known by its being the highest part of the island, and towards the north-east end.

Three miles and a half east of Fish Point, or four miles E. ½ N. from Flag Hill, is the north-east reef, which should be carefully avoided, as at times there are long intervals when it does not break; the water appears to be deep close to it, excepting on its south-west side, where there is ten fathoms rocky, a mile off.

With the exception of the Wallabi Islands and North Island, all the other islands of this group are very low, being merely banks of dead coral, the highest of which is only eight feet above the sea. The easternmost islet of this group bears east 28° south, (magnetic) and is distant four miles and a half from Flag Hill;—from this islet the north-east reef bears north two miles and a half, and the passage between them appears clear.

North Island, (which is the northernmost island of Houtmans Abrolhos,) bears north 40° west, (magnetic) from Flag Hill, and is distant ten miles and a half, in which space there may be a passage to sea, but as there appeared to be so many straggling rocks, and the western limit of the barrier is at such a distance from the islands, that if a passage does exist, it can be but narrow, and not over safe. For four miles south of North Island is a continued reef with heavy breakers, and which may probably extend to a greater distance, towards the reef off the north-west part of west Wallabi Island, and as these reefs have been traced five miles to the north-west of that island, little space is left for a passage between them. No doubt there is an opening, on account of the long swell that rolls in between them from the westward, but it would not be prudent to risk a ship while any doubt exists.

North Island is of circular form, three miles in circumference, and with the exception of a small sandy bay on its north-east side, is surrounded by reefs; the only anchorage is off this bay, about three-quarters of a mile, or a mile from the beach, in a very indifferent berth.

This island is similar to the Wallabi Islands, the base of rock being covered with a sandy soil that gives growth to a stunted scrub; the centre of the island is perfectly flat, and encircled by a marginal ridge of sand hills, the highest of which is forty-two feet; it is at the south-west part of the island, and has been named Record Hill, because a bottle, containing a paper, shewing the date of our visit, was deposited there. The observations were taken on Latitude Hill, on the east side of the island, the summit of which is in latitude 28° 16′ 16″ S., and longitude 2° 8′ 57″ west of Swan River.

From the north end of this island, the reef extends as far as 28° 15′ 30″, which is the extreme northern limit of the Abrolhos: to the westward of the island, all appears clear beyond a mile and a half, and to the eastward of the island the reef does not extend over half a mile.

Soundings may be had at a greater distance from the reef off the western side of this island, than of any of those to the southward.

When the centre of North Island bore east, four miles and a half, we found thirty fathoms, coral, and with the centre of the island N. 70° E., distant seven miles, forty-two fathoms coral, to the westward of that it deepens quickly.

There does not appear to be any outlying dangers round the Abrolhos, and with the exception of Snapper Bank, there is a very uniform depth of water, from twenty to twenty-five fathoms between the different groups, and in the space between them and the main land it is rarely over thirty fathoms.

Snapper Bank, which is the only patch of shoal water that was found detached from the different groups, is N. 15° W. (mag.) from Small Hummock Island of Pelsarts Group; its south end is distant five miles and a half; it extends a mile and three-quarters to the northward, and is three-quarters of a mile wide; the least water found upon it was six fathoms. From this bank Small Hummock Island is just visible from the deck, at an elevation of fifteen feet.

The only information respecting Houtmans Abrolhos, that has ever been hitherto made known, being merely extracts from the journals of

those who had suffered shipwreck upon them, it is not to be wondered at, if such accounts have had the effect of warning all navigators from them, hence so long a time has elapsed without their exact limit having been ascertained. They lie parallel to that part of the coast of New Holland, opposite to them, (nearly N.N.W. and S.S E.,) the southern limit of the reef off South Island, is in latitude 29° 00½′ S., and the northern extreme of North Island reef is in 28° 15½′; the western part of which is in longitude 2° 11′ west of Swan River (this is the western-most part of the Abrolhos, and the eastern limit (which is Small Hummock Island,) is 1° 42′ 30″ west of the same meridian.

The Abrolhos may be considered as a place of refreshment, inasmuch as fish, of an excellent quality may be taken with a hook and line in any quantity, chiefly snapper and rock fish, which prove a valuable sea stock. Wallabi may be had on the islands of that name, where fuel may also be procured, and water may probably be found in many places during rains, but cannot be depended upon as a certainty, owing to the porous nature of the rock. A small quantity was found on the Wallabi Islands in May, but of an indifferent quality.

These islands might prove a welcome retreat to vessels employed in whaling on the west coast of New Holland; they generally carry sufficient water for their voyage, therefore would only require some refreshment for their crews, and this might be procured without the trouble of lowering a boat, by merely anchoring the ship near the reefs, on the east side of the islands, or between the different groups, where in a few hours a sufficient supply of fish for immediate use, and for salting may be taken.

There is no danger beyond the breakers that form the western barrier, and as the weather is generally clear enough to admit of a meridian altitude being observed, the ship's latitude may always be known, which with a common look-out, is sufficient to keep her clear, and no dangers exist that are not easily seen from the mast-head; the only drawback to anchoring under the Abrolhos, is the depth of water, but excepting when moored in confined places, the stream anchor with a long scope of bower chain, will be found quite sufficient. The Beagle very rarely let go a bower anchor.

The prevailing winds at the Abrolhos are southerly, and the weather is usually fine; there is no stream of tide to affect a ship, and the range is under three feet. The current is influenced by the wind, and consequently is generally setting to the northward, varying in direction amongst the islands; its velocity depends upon the strength of the breeze, but is rarely over a knot an hour.

NOTES ON THE MOUTH OF THE YANG-TSE-KEANG.—*By Capt. R. D. Bethune, H.M.S. Conway.*

IN our last number, we announced the publication of Capt. R. D. Bethune's survey of the mouth of this great river, in one of the series of charts of the coast of China, supplied by the Admiralty, for the use of her Majesty's ships, and placed in common with all the Admiralty charts,

at the service of mercantile vessels at a very low price. We expressed a hope then that we should be enabled to publish this officer's memoir of the survey he had made, so that his information might be immediately available with the above chart. Annexed is the memoir referred to, and considering as we do the mouth of this magnificent river, as the portal through which an extensive trade will hereafter flow into the very heart of China,—the information it contains may be looked on as most important.

The limits of the embouchure of the Yang-tze-keang are not well defined, but are included within the parallels of 31° 0′ and 32° 10′ north latitude. It is divided into various channels by low islands which doubtless have been formed occasionally by deposit from the river, and reclaimed by the industry of the people: both they and the banks of the river are very low, and are defended by dykes: however during the period of our visit (August and September) no traces of inundation were visible. The largest among the islands is Tsung-ming: it lies W.N.W. and E.S.E.; and is about thirty miles in length, six in breadth at the eastern extremity, and nine at the western. In the parallel of Tsung-ming, the shoal extends fifteen miles to seaward. Twenty miles east from Tsung-ming lies an island, Sha-wai-shan, (Jaunceys Island of the Amherst voyage,) 196 feet in height: latitude 31° 25′ 2″, longitude 122° 6′ east. From the summit Tsung-ming is just visible. Saddle Island of Amherst is also visible, bearing S.E.b.S., distant forty-two miles, and the *dangerous rocks* bearing S.S.E. ½ E. *sixteen miles*. To the northward of Tsung-ming there are several channels with deep water; some run up for eight or ten miles, and are then barred by an islet or bank; others may, perhaps, lead up, but the approaches are dangerous or shallow, so that they cannot be recommended for vessels. They have not, therefore, been examined so much in detail as that lying south of Tsung-ming, and running on the right bank of the river. This channel, the Amherst ascended when she visited Shang-hai, and it is the only one that can be recommended for vessels of any burthen. An extensive flat lies at the entrance, over which you carry from three to four fathoms: with the information I now possess, I would have no scruple to take twenty-one feet over, and I think I may venture to say, future examination will shew that a four fathom channel exists: when over the flat a deep water channel not intricate, leads up eighty miles from the entrance, the highest point reached by the Conway.

We only stopped here, by having attained as was thought, the point named in the instructions, as to all appearance the deep water still continued.

Up to this point the banks had presented one uniform flat, rarely broken by trees; but here the country assumes a new character, three hills about three or four hundred feet high appearing on the left bank, about four or five miles from the river; on the summit of one of which was a tower, and apparently a large establishment of priests, (Tong-chow). On the right bank the country was also becoming hilly, some approaching near the river. No large towns were visible, but many villages. The banks are intersected by numerous creeks, in almost all

of which there appeared to be junks, and many people; but the greatest number of people were observed on the left bank for five or six miles, below the three hills mentioned above.

Tides, Winds, &c.—These remarks depend upon observations made from the ship, which from her change of position, renders them to a certain extent uncertain, (period August and September.)

Generally off the mouth of the river, high water at full and change, about noon. Rise at springs fifteen feet,—neaps ten feet, once eighteen feet was noted, but I judged it was exaggerated. The stream of flood comes from the eastward, drawing to the southward, about the last quarter, and round to the ebb from the westward, and so round by north; the greatest velocity measured was 4·5 knots off the northern entrances, but the usual velocity at springs is about 3·5.

In the river, off Woo-sung, high water full and change, about 1h. 30m.; rise uncertain, but from fifteen to eighteen feet; stream of flood comes from south-east round by east to north; ebb from north-west round by north.

At the furthest point reached, high water about 4h. 30m.: rise fourteen feet,—ebb runs eight hours. Flood at the neaps nearly obliterated.

July.—Bar. 29·74, ther. 78, prevailing winds south-easterly, freshening about the change of the moon.

August.—Bar. 29·78, ther. 81, prevailing winds south-easterly and northerly: a day or two blow at the change with a little rain.

September.—Bar. 29·90, ther. 77, winds more variable, but drawing round from south-easterly to northerly. Blows at full and change with rain,—morning much colder than average. Temperature having been taken on the main deck is not very correct; the periodical breezes at full and change appear to increase intensely. Barometer rises with northerly winds, falls with westerly and southerly winds. One hard blow with barometer at 30·10.

As far as we went, there are no means of preventing a free passage of the river. At the entrance of the Woo-sung are two forts, bearing north-west and south-east from each other, about three-quarters of a mile apart, but as they appeared to have been newly-faced with mats, I presume much confidence is not placed in them. In addition, on the left bank, is a quay three miles in length, connected with the fort, defended by a kind of wedge-shaped traverse about six feet high and long, and perhaps fifteen feet apart. We could not make out whether they were composed of earth, baskets, or earthen pots; from some being whitened, we at one time imagined they had been erected on the same principle as the mat-forts, to look like tents. There are two batteries along this line, one of about ten guns near the western corner of the quay, another of the same number commanding the entrance, some of the guns appear to be nine or twelve-pounders.

On our return off the place from the upper part of the river, thirty to forty junks were moored abreast across the entrance; we have seen at this place perhaps 300 soldiers. Three foolish guns were fired at the ship, from a point six miles below the forts.

Above the point there are no defences, until at a large village and building establishment for junks, where a show of about fifty soldiers

was made behind a parapet. This was the highest point the Conway reached, and I judged from the Chinese charts, that it is considered the first defence on the river. As a gun-boat might be placed to enfilade this, it is hardly worth attending to. There is also a circular fort of small dimensions, apparently useless, both for offence and defence; near this, is a hill about two hundred feet high, with a building on the top, which apparently might be made defensible, describing a semi-circle from this point, with a radius of eight miles, several heights will be included, forming I conclude, a position of some value. It is unfortunate, that to the extent of half a mile from the shore the bank is very flat. Ten miles below this, on the same side, about twenty soldiers appeared in a round fort, with the usual allowance of flags.

Tents appeared in various places, when we remained any time, and a flotilla of boats followed our movements inshore, till the last moment, when a couple of shot and a shell showed them such attention, in future, might be attended with danger.

Supplies.—Cattle and small stock appeared plentiful, particularly on the north side of Tsung-ming. Caution must be observed in foraging, for the country presents singular advantages of defence, the communication being by narrow causeways through the cultivated ground, which again is intersected in all directions by creeks and ditches; this, however, may only be the case near the river.

The water of Woo-sung is perfectly good; we have used it twenty miles lower, but the time of the tide must be attended to, and even then it has a trace of salt.

All the islands without the river at this time (September) can afford supplies of sweet potatoes.

I should add, that cattle appear to be kept for agricultural purposes, and it is a question whether they be easily replaced.

I annex a short report from the surgeon, Mr. Francis Sharpe, on the climate, but in justice to him, must state, that the short notice given, would not admit of a more detailed statement being prepared.

Climate.—During a period of ten weeks (July, August, and September,) seventy cases of dysentery have occurred, and from the alluvial nature of the land, they assumed a severe form. Several cases of fever made their appearance, two of which were remittent, and of a violent type. The climate was anything but favorable to some long standing cases of intermittent fever, two cases of cholera, one of the true Asiatic form, occurred during the month of August, which I consider to be the most sultry part of the season in China.

The mortality which has taken place amounts to five, but this cannot be ascribed to the climate, as two died of mortal wounds received in a skirmish with the Chinese, one from serious apoplexy in a man of very dilapidated constitution, and the remaining two from chronic and acute dysentery; but here it must be mentioned that these latter were constitutions totally undermined, one by two years sickness from that disease, and the other by repeated attacks of ague.

Upon an average, the weather has been fine, latterly the days have

been hot and the nights cold; very wet weather has been experienced, and the winds in general prevailed from an easterly direction.

FRANCIS SHARPE, *Acting-Surgeon.*

To accompany the Chart of the river Yang-tse-kcang.

So far as the islands have come under my observation, there is no hidden danger among them, and there is anchorage throughout, with good holding ground. I suspect the west side of the bay of Ningpo to be shoal, and passing between the islands lying N.N.E. from Kintang, we passed over three and a half fathoms. As we were not aware of the state of the tide at the time, there may be less at low water.

To enter the river, keep Gutzlaff S.S.E. by compass twenty-four miles, when you will perceive breakers, or a ripple on the bank, according to the state of the weather; on this course you will not have less than four fathoms, or at the least three and a half fathoms. As it is difficult to run a given distance when tide enters into the account, you must be governed by the island Sha-wai-shen, which in fine weather is just visible from a height of sixteen feet twenty miles; just in sight from that height, bearing N.E.b.N., you may steer north-west, and from aloft will perceive the low land, and a single tree sufficiently remarkable, bearing about W.N.W. Steering north-west you will carry four fathoms over the flat, and must keep at least two miles from the shore on the larboard hand, as it runs off shoal. When the tree bears south, close the shore to one half or one mile, and steer about N.W.b.W. for the largest clump of trees you see on the shore. The water will deepen gradually to nine or ten fathoms. When abreast of the trees, the forts at Woo-sung will be seen, distant about eight or nine miles. Good anchorage with the eastern fort S.b.W.,—extremity of Wall north-west. Bush Island is remarkable, and must not be approached nearer than two miles and a half; keeping half a mile from the Wall N.W.b.W. leads into the deepest water up the river. The soundings decrease gradually from eight to four and a half fathoms, in the centre of a large bight two miles from the shore, and then deepen gradually to fourteen fathoms, abreast a clump of trees seventeen or eighteen miles from Woo-sung.

The mark for hauling to the northward is, the trees on Mason Island, open to the westward of Tsung-ming, bearing N. ½ W. As you haul across, open the island gradually, and you may keep close to (half a mile) Point Harvey, which is steep to. From this steer N.W. ½ W., when, if the weather be clear, a hill and pagoda will be seen ahead. Do not approach Mason Island nearer than two miles, and when past it, keep about mid-channel, steering west, taking care not to bring the trees on Mason Island to the southward of east, to avoid a shoal, lying one-third the distance across from the north shore. You are abreast of the shoalest part of it, when the Pagoda bears north-west, and a great bush on the south shore S. ½ W., about fourteen miles from the west of Tsung-ming; then steer S.W.b.W. ½ W. for Round Tree Point, distant about four miles; deep water will be had before and after passing; and when abreast Round fort, in a creek, and one mile and a half off shore,

you have suddenly two fathoms from twenty and then four feet. The Great Bush kept in sight, clears it to the northward, and from this W. b.N. leads up abreast a village and fortification, situated among hilly ground. Up to this point the banks are perfectly flat, and although the trees and bushes spoken of are sufficiently remarkable when once recognized, care must be taken not to confound others with them. Here the channel again crosses the river, and is about one mile and a half wide, then about N.N.W. ½ W., deepening from seven to twelve fathoms.

(Signed) C. R. D. BETHUNE, *Captain.*

H.M.S. Conway, 18th October, 1840.

RELIGION IN CHINA.

THE Chinese have no generic word for religion. The word *keaou*, which means to teach, or the things taught, doctrine or instruction, is indeed applied by them to the religious sects of Taou and Budha, as well as to the ethical sect of Confucius. And they apply this same word also to Mahommedans and Christians. But they do not apply it to the *state religion*, for that does not consist of doctrines which are to be taught, learned, and believed, but of rites and ceremonies. It is entirely a "bodily service," which however tacitly implies the belief of some opinions, though to have correct opinions, according to some prescribed rule or article of faith, forms no part of the system. The state religion as practised at the court of Peking, and by the provincial governments, is contained in the code of laws called Ta-tsing-hwuyteen, and in the Ta-tsing-leuhle, under the head *le*, rules of propriety and decorum of rites and ceremonies, and in the subordinate division tse-sze, sacrifices and offerings. From these two works we shall briefly specify: —first, the persons or things to whom these sacrifices are presented, or the objects of governmental worship:—secondly, the ministers or priests, who offer these sacrifices, and the preparation required of them for the performance of this religious service:—thirdly, the sacrifices and offerings, the times of presenting them and the ceremonies accompanying them:—and fourthly, the penalties for informality, or defective performance of the state religion.

First, we are to speak concerning the objects of worship, or things to which sacrifices are offered. These are chiefly things, though persons are included. The state sacrifices are divided into three classes:—first, the ta-sze or great sacrifices:—second, the chung-sze or medium sacrifices:—and third, the seaou-sze or little sacrifices. These last are also denominated keun-sze, the crowd or herd of sacrifices: the word keun "a flock of sheep," being used as a noun of multitude. In the following list, the first, second, third, and fourth, are the objects or classes of objects to which the great sacrifices are offered; from the fifth to the thirteenth are those to which the medium sacrifices are offered; those of the fourteenth and onward, have right only to the little sacrifices.

1. Teen, the heavens or sky. This object of worship is otherwise

called the azure heavens, and the hwang-kung-yu, the imperial concave expanse.

2. Tee, the earth. This like the heavens is dignified with the epithet imperial.

3. Tae-meaou, the great temple of ancestors. This title is used to include all the tablets contained therein, dedicated to the manes, or shades of the deceased emperors of the present dynasty. This triad of titles teen, te, tae meaou, always placed together on a level, in respect of dignity at the grand sacrifices, are also worshipped apart. The lines or columns of Chinese characters being read from top to bottom, dignity is always by the height of the title, which corresponds in some degree to our use of capital letters. Inferiority of rank or dignity is marked by the title being placed one or more characters lower. Heaven, earth, and ancestors, as objects of worship, and of equal rank and dignity, are placed on a level, and one or more characters higher than other objects, as the sun, moon, stars, &c. An idea of this may be conveyed to the reader, by the position of the words in lines, thus:—

Heaven, earth, ancestors,
Sun, moon, stars, &c.

4. Shay-tseih, the gods of the land and grain; these are the special patrons of each existing dynasty, and are generally located in the fourth place.

5. Jeih, the sun, called also ta-ming, 'the great light.'

6. Yué, the moon, called also yay-ming, 'the night light.'

7. Tseen-tae-te-wang, the manes of the emperors and kings of former ages.

8. Seen-sze-Kungtsze, the ancient master Confucius.

9. Seen-nung, the ancient patron of agriculture.

10. Seen-tsan, the ancient patron of the manufacture of silk.

11. Teen-shin, the gods of heaven.

12. Te-ke, the gods of the earth.

13. Tae-suy, the god of the passing year.

14. Seën-e, the ancient patron of the healing art, together with choo-gin-kwei-che-tse, the innumerable ghosts of deceased philanthropists, faithful statesmen, eminent scholars, martyrs to virtue, &c.

15. Sing-shin, the stars, are sometimes placed next after the sun and moon.

16 Yun, the clouds.
17 Yu, the rain.
18 Fung, the wind.
19 Luy, the thunder.
} These atmospheric divinities are placed in one column.

20 Woo-yo, the five great mountains of China.
21 Sze hae, the four seas; *i. e.* all the waters of the ocean.
22 Sze tuh, the four rivers.
23 Ming shan, famous hills.
24 Ta chuen, great streams of water.
25 Ke tuh, military flags and banners.
26 Taou loo che shin, the god of a road where an army must pass
27 Ho paou che shin, the god of cannon.
28 Mun shin, gods of the gate.

29 How too che shin, the queen goddess of the ground.
30 Pih keih, the north pole, &c.

From this specimen it is apparent that in the Chinese state religion, the material universe, as a whole, and in detail, is worshipped; and that subordinate thereto, they have gods celestial and terrestrial, and ghosts infernal; that they worship the work of their own hands, not only as images of persons or things divine, but human workmanship for earthly purposes, as in flags and banners, and destructive cannon. That the *material universe* is the object of worship appears not only from the names of those several parts which have been given above, but also from other circumstances. Thus the imperial high-priest, when he worships heaven, wears robes of azure colour, in allusion to the sky. When he worships the earth, his robes are yellow, to represent the clay of this earthy sod. When the sun is the object, his dress is red, and for moon, he wears a pale white. The kings, nobles, and centenary of official hierophants wear their court dresses. The altar on which to sacrifice to heaven is round to represent heaven; this is expressly said. The altar on which the sacrifices to the earth are laid is square, whether for the same wise reason is not affirmed. The "prayer boards," chuh pan, are of various colours for the same reason as the emperor's robes. In the worship of the heavens, a yellow ground with vermilion letters is used; in the worship of the earth, a yellow ground is used with black characters; for the worship of ancestors, a white ground is required with black characters; for the sun, a carnation with vermilion characters; and for the moon, a white ground with black characters.

We proceed now to the second part of our subject, and notice the sacred persons who perform the rites of sacrifice. The priests of the Chinese state religion are the emperor himself, who is the high-priest, the "pontifex maximus;" and subordinate to him, the kings, nobles, statesmen, and pih kwan (as they phrase it,) the centenary or crowd of civil and military officers. The joo keaou, or sect of philosophers, monopolize both civil and sacred functions. At the grand state of worship of nature, neither priests nor women are admitted; and it is only when the sacrifice to the patron of silk manufactures takes place by itself, that the empress and the several grades of imperial concubines, princesses, &c., may take a part.

It is required of the Chinese hierophants that they be free from any recent legal crime, and not in mourning for the dead. For the first order of sacrifices they are required to prepare themselves by ablutions, a change of garments, a vow, and a fast of three days. During this space of time they must occupy a clean chamber, and abstain—1st. From judging criminals. 2nd. From being present at a feast. 3rd. From listening to music. 4th. From cohabitation with wives or concubines. 5th. From enquiries about the sick. 6th. From mourning for the dead. 7th. From wine. 8th. From eating onions, leeks, or garlic. "For," says the annotator, "sickness and death defile, while banqueting and feasting dissipitate the mind, and unfit it for holding communion with the gods."

The victims sacrificed, and the things offered, form our third topic. The animal or bloody sacrifices for heaven and earth are divided into the four following classes:—1st. A heifer, or new tzze, "a cow's child."

2nd. A bullock, or new foo, a "a cow's father." 3rd. Oxen generally. 4th. Sheep or pigs. The things offered are chiefly silks, on which we do not dwell. "The Grecks sacrificed the ox, hog, sheep, kid, cock, and goose. The victims were to be 'sana et integra.' The different deities had the proper victims; Jupiter, an ox five years old; Neptune, a black bull, a hog, and a ram; Minerva, a heifer and an ewe; Esculapius, a she goat and a cock." The Chinese also require that the victims should be whole and sound, and they prefer an azure-black colour. For the grand sacrifices the victims are to be purified nine decades, or or cleansed ninety days; for the medium classes three decades; and for the herd or flock of sacrifices, one decade or ten days. We do not perceive any ceremonies connected with killing the victims. There are no wreaths or garlands as there were among the Greeks, nor as among the Jews any sprinkling of blood particularly mentioned. The victims seem to be simply butchered the day before they are to be offered, and dressed, we rather think, ready to be distributed, (after being laid on the altar,) among the hungry participators of the tse fuh jow, "the sacrificial blessed flesh," which the civil and military priesthood will no doubt relish after a three days fast. The times of sacrifice are specified as follows:—those to heaven are offered on the day of the winter solstice; those to earth on the day of the summer solstice; and the others at regularly appointed times, which it is not important to detail in this sketch.

The ceremonies of this grand worship of nature, this 'natural religion' consist in kneeling, bowing, knocking the head against the ground, or in Chinese, pae kwei kow. In those sacrifices in which the emperor officiates, in propria persona, he never knocks his head against the ground. What he requires of the greatest monarch on earth, he will not give to the greatest, "supremest" thing that he worships. The three kneelings and nine knockings of the head against the ground, he turns into three kneelings and nine bows. The kow or pae, *i. e.* the knocking or the bowing, seems to make a material, or rather a *feeling* difference in the estimation of his majesty.

The last topic on which we proposed to remark, is the penalty of informality. The punishment annexed to the neglect of the preparation, imperfect victims, &c., is either forfeiture of salary for a month or longer, or a specified number of blows with the bamboo, which can be avoided by the payment of a very small sum of money. There is nothing to be feared but man's wrath; nothing but a forfeiture or a fine. The fines in these cases are rated according to the number of blows adjudged to the delinquent. But while such is the easy penalty of these philosophical legislators and hierophants, in cases where they themseves offend; the case is far different if any of the common people presume to arrogate the right of worshipping heaven, and announcing their affairs thereto, or of lighting lamps to the seven stars of ursa major, &c.; they shall be punished *bona fide* with eighty blows or strangulation. For the state religion and the objects of worship proper for monarchs and philosophers are not to be desecrated and dishonoured by vulgar adoration. Ye vulgar plebeians go and worship things suited to your station; arrogate not the right of worshipping the supreme powers!—*Chinese Repository.*

EASTERN NAVIGATION.—*Dangers at the entrance of Gaspar Strait, and the Carimata Passage.*

(From the Shipping Gazette.)

SIR.—The dangers mentioned below, not being laid down in my charts, I beg to communicate their situation for your valuable paper, if not already known.

Lat. 1° 31′ S., long. chron. 107° 1′ E., Sept. 40, at 1 P.M. anchored in eighteen fathoms, breakers on a shoal by N.N.E. ½ E., distant half a mile, and extending in an E.b.S. direction, in one continuous line for about three miles. Remained at anchor till 4 P M., when a light breeze springing up, weighed and stood to the south. Oct. 5th, 7 A.M., steering north-east with a fresh breeze, centre of Toekoekemou S.E. ½ S., the beach visible halfway up the rigging; observed a coral reef about two ships' lengths a-head, tacked instantly to the westward; observed from the topsail yard that the reef appeared connected with the island, and, having, apparently, not more than five or six feet water on it. I regret exceedingly that I was not able to examine these dangers, both quarter-boats being under repairs, having been stove a few days previously. Supposing the shoal not to be a new discovery, I have not given it any name.

I am, &c.

S. P. HALL,

Port Louis, Nov. 3, 1840. *Master of the barque Catherine.*

[Neither of these dangers have yet made their appearance on the charts, and they are both most important to mariners.]

LIEUT. BECHER'S HORIZON FOR ASTRONOMICAL OBSERVATIONS AT SEA, OR ON SHORE.—*Made by Cary, Optician, Strand.*

AMONG the various desiderata which nautical science has looked for since the grand era in navigation formed by the invention of reflecting instruments, that of supplying an horizon by artificial means when the horizon of the sea is obscured by fog or concealed by adjacent lands, is one of the principal. Accordingly many attempts have been made to supply the mariner with so important an instrument, and it is rather remarkable that Hadley, the inventor of the quadrant was among the first to attempt such an appendage to his own quadrant. As we do not find however that ever since his time any of the inventions for this purpose have been so successful as to fall into use among any moderate portion of our seamen, it is fair to infer that they have been insufficient for the required purpose. Assuredly when it is considered that the object is to know at the instant of observation the actual place of the zenith,—when it is also considered how small a space is an arc of a few minutes, and the ever-varying and incessant movement of a ship in constant motion; the question is surrounded by difficulties which would appear almost insuperable, and sufficient certainly to deter any one, at first sight, from approaching it, however exciting and simple, as well as desirable such an instrument may be. The common Artificial Horizon of mercury or oil, it is true never fails to supply the place of the Natural Horizon on shore, except when the

object to be observed is so high as to be beyond the limits of the instrument to measure by reflection, or so low as to be not within the limits of observing. Within those limits the horizon of mercury never fails; but there are no such limits to the marine artificial horizon which it is proposed here to describe. On shore it may be used at all times as a substitute for the mercurial horizon, when this is not available; while at sea, provided the observer has sufficient experience in its use, and the motion of the ship be not too violent, it may also be used as a substitute for the natural horizon.

There are degrees of motion in a ship, so excessive in violence as to forbid all attempts at observation with an instrument which such motion must necessarily affect. A perfect marine artificial horizon to be independent of the observer may therefore be long, and perhaps in vain sought for; but it does not follow that one to be formed with the assistance of the observer while he is making his observation should be so inaccessible. A ship is not always in *violent* motion, and there are circumstances of weather and sea in which such an instrument has its value; in which an *experienced* observer will have no hesitation in using it with confidence. It is unnecessary to particularize such situations—the mouth of the English Channel in a southerly wind it is well known to every seaman, affords ample opportunity for the use of such an instrument, besides other parts of the world, where to obtain an observation for latitude especially, is of so much importance, and when that observation cannot be obtained from the sea horizon being obscured by fog. It is in circumstances such as these that the present invention becomes of great importance.

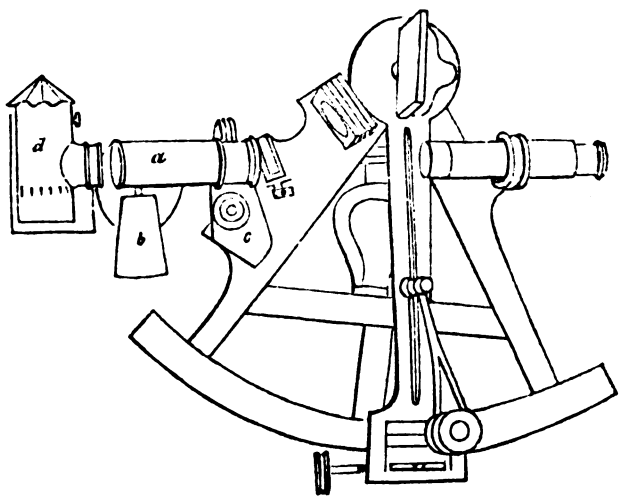
But useful as it may be by day, the marine artificial horizon is even more so at night, when the more moderate character of the weather allows of advantage being taken of the more numerous opportunities of obtaining the latitude by the moon and stars, obviating at once the difficulty arising from the frequently uncertain nature of the sea horizon on these occasions. Many meridianal observations of stars have been lost from this cause when they have been wanted, and observations have been too frequently obtained on which dependance could not be placed. With the judicious use of the lamp of this instrument, the marine artificial horizon is just as available by night as by day, affording even a more satisfactory observation.

But an observer must not indulge the idea that he has here an instrument that will do all its work by itself: he must constantly bear in mind that he has to employ all his skill in counteracting the motion of the vessel he is in, in order to form an essential preliminary part of his observation, viz. the horizon itself. If tact and experience are essential to make him expert in using the common mercurial horizon on shore, which is very well known to be the case, how much more so must they be for an horizon which he has to make and preserve while he is observing an altitude upon it. The careful observer will at once readily perceive that he has a lesson to learn, that he has to make himself master of a new, but most simple instrument, which when he can manage, will enable him to obtain observations at a most important part of his voyage for latitude and his chronometer, which he could not obtain without it. He must not be dissatisfied because he may not be com-

pletely successful in his first essays with the instrument, nor because he cannot at once make a good observation should he lay it aside in despair, and consider such a thing unattainable. He may depend on it, that with a moderate share of perseverance, he will gain sufficient practice to overcome difficulties which may at first appear insuperable; he will gradually become accustomed to the use of the instrument, and will use it with the same confidence under certain circumstances, as he would use his own sextant without it.

The marine artificial horizon when required is to be attached to the sextant for observation, and does not in any way interfere with its glasses or adjustments, and when not required is kept in its own case apart from it.

The following is a representation of the sextant with the horizon attached to it for observation.



Directions for attaching the Horizon to the Sextant.

1. Unscrew the cover of the small conical cistern *b*, without removing it from its case, and see that the surface of the oil* in it is *rather higher* than the aperture communicating with the inverted cistern into which the oil is to flow when holding up the arch of the sextant to read off.—Leave the cistern in its place.

2. Take the sextant from its case, and screw the telescope into its place.

3. Fix the tube *a*, containing the horizon in its place on the sextant at the back of the horizon glass, the feet at the back of the plate being inserted in their sockets, and secure it there by means of the screw *c*. Raise the sliding screen at the end of the tube *a* to a proper height, so as to admit a sufficient degree of light up the tube.

4. Hook the cistern *b* in its place at the side of the tube *a*, previously immersing the pendulum in the oil which it contains. Be careful that the pendulum is previously allowed to shake about as little as

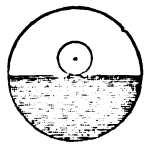
* Oil of Almonds.

possible. The intention of immersing the pendulum in the oil is to enable the observer to control its movement, which, from the extreme delicacy of its suspension would otherwise be impossible.

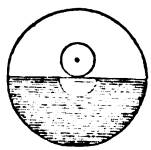
5. If at night and the lamp *d* be required, having lit the lamp,* if the light be too strong it may be subdued by placing a screen of paper, or two if necessary, over the colored glass inside its cap, which may be unscrewed for the purpose. There is also a sliding screen† at the end of the tube *a*, which by being moved up or down assists in preventing too much light from passing up the tube. The light of the lamp with this also may be reduced to a sufficient strength, so as not to overpower the rays from the moon or star on the horizon glass of the sextant. A greater degree of shade may be necessary in bringing down the moon or star, than afterwards for observation. The lamp being ready slide its leg into its place at the back of the inverted cistern. The lamp will then hang in its proper place for the observation, and on holding the arch of the sextant up to read off will preserve its vertical position.

The face of the sextant must never be inclined downward while the horizon with its cistern is attached, as in that case the oil will be lost from it.

Method of Using the Instrument.



In the construction of the Horizon it is assumed that when an observation is made with the horizon of the sea, that horizon forms a diameter to the field of the telescope the sun being seen on it as in the adjacent figure. The longer axis of the telescope fixed in the instrument would then be horizontal, but for the known angle of the dip of the horizon, by which the altitude is corrected. The same position of the telescope is thus obtained:—A line for the horizon formed by the upper edge of a slip of metal at right angles to the plane of the instrument and in the plane of the axis of the telescope was assumed beyond the horizon glass, and a small pendulum carrying an arm at an angle of 90°, to which was fixed another slip of metal, the upper edge of which is at right angles to the pendulum, was placed beyond it. The pendulum having free motion in any direction the observer has to bring the upper edge of the slip of metal attached to the pendulum, in exact contact with the line above mentioned, or in in other words he has to bring the upper edges of the two slips of metal into one, and at the same time he is to make his observation by bringing down the image of the reflected object which he is observing upon it. If that object be the sun it will appear thus:—



As the observer has thus to form his horizon at the instant of observation, in observing on board he should get into that part of the ship where there is the least motion, and *especially into a place screened from the wind.* He may be seated or not, at pleasure, but he will find that he has more control over the movement of the pendulum, when the arm holding the instrument is supported on

* Four threads are sufficient for the wick.

† This screen being raised or depressed regulates the degree of light also for day observation, and at a proper height will prevent a burr on the horizon arising from too much light.

his knee, or by some convenient part of the vessel. In observing on *shore* he must also be careful to *screen himself from the wind.*

The observer will readily see when the upper edge of the slip of metal is below the line of the horizon, and by altering the position of the instrument can bring the former up to the latter; but as the metal slip would prevent the horizon line being seen when the upper edge is above it, a small piece has been cut out of it, or in other words a notch or aperture has been made in this edge, so that the observer can see the horizon line in that aperture, when the horizon line is below that edge and can rectify it by again altering the position of his instrument.

It may be right to state here, that the great precision attainable with this horizon may be attributed to the application of the lens at the end of the tube, next the horizon glass, which allows of the magnifying power of the telescope being used for the observation.

The following observations are selected from among a multitude of others as examples:—See *Nautical Magazine* for May 1839, p. 305.

H.M.S. Cornwallis, 7th August sailed for Halifax.—On the 9th at anchor in thirteen fathoms with the town of Kamarouska S.W.b.S., and the church of St. Andre S.S.E., lat. 47° 44′ 30″ N., long. 69° 50′ W. as per chart, observations were taken of the sun with Sextant and Marine Artificial Horizon of Lieut. Becher for noon latitude.

The first observations with two Sextants were made for the correction of the Artificial Horizon.

Mr. Archer by Sea Horizon.	Mr. Davy by Art. Hor.	Correction for Art. Hor.
Sun's observed alt. cort. for dip.	Sun's observed alt.	Subtract. being in Excess.
° ′ ″	° ′ ″	′ ″
44 4 20	44 13 0	8 40
45 30 10	45 36 40	6 30
47 29 20	47 33 10	3 50
49 51 20	49 59 20	8 00
53 15 30	53 23 10	7 40
		34 40
	Mean correction	6 56

	Davy by Art, Hor.		Archer by Sea Hor.
	° ′ ″		° ′ ″
Observed Meridian Alt.	57 58 0		57 58 30
Correction of Art. Hor.	6 56	Inx. cor.	1 00
	57 51 04		57 57 30
S. D.	+ 15 48		+ 15 48
	58 06 52		58 13 18
R.	— 31	D. & R.	— 5 41
	58 06 21		58 07 37
Z. D.	31 53 39		31 52 23
Decl.	15 53 2		15 53 2
Lat.	47 46 41		47 45 25

16th A.M.—Observations for chronometers taken at sea with Artificial Horizon.

Time.	Sun's Alt. Sea Hor.	Sun's Alt. Art. Hor.
h. m. s.	° ′ ″	° ′ ″
8 50 23	40 30 30	40 32 0
52 03	47 50	46 10
54 14	41 9 20	41 10 20
56 4	26 30	30 40
57 57	44 20	49 50
	38 30	41 9 12
20 41		Art. Hor. cor. 6 56
	41 7 42	41 2 16
8 54 8·2	Ind. Er. 1 00	Sem. D. + 15 49
	41 6 42	41 18 05
	Sem. D. + 15 49	Refr. — 59
	41 22 31	41 17 08
	Dip. & R. — 6 1	
	41 16 30	

Of course both gave nearly the same longitude. We were on the Middle Ground just to the northward of Sable Island working to the westward.

H.M.S. Fairy, in Harwich harbour at night, *the horizon illuminated by the lamp.*

1839.—Nov. Sat. 16th. Moon's L.L. 7h. 57m. P.M. Mon. 18th. Moon's L.L. 9h. 47m. P.M.

	° ′ ″	° ′ ″		° ′ ″	° ′ ″
	35 54 0	49 59 0	Hor. Par.	58 53 6	60 33 3
Art. Hor. Cor.	0 9 26	0 9 26	Change	0 17 3	0 1 47
Moon's A.A.	35 44 34	49 49 34		59 10 9	60 48 0
Sem. Dr.	+ 16 17	+ 16 46			
			Declin.	1 31 8.1	12 31 41
	36 0 51	50 6 20	Change	—14 32.6	+ 9 25.8
Cor.	+ 46 35	+ 38 13			
				1 16 35.5	12 41 6.8
T.A.	36 47 26	50 44 33			
Z. D. N.	53 12 34	39 15 27			
Decl. S.	1 16 35	N. 12 41 7			
Lat.	51 55 59	51 56 34	The lat. of the anchorage is 51° 56′ 45″		

The following meridian altitude of Jupiter was obtained *with the lamp*, in the mouth of the river Thames, in November 1835, and of the Sun in November, 1839, at Harwich by different instruments. The correct latitude of Harwich anchorage is given above, that of the mouth of the river Thames where the observation was made is very nearly 51° 30′.

[In the first series of this work, vol. for 1835, and the preceding volume for 1834, the reader will find a discussion on the invention of Hadley's quadrant, proving that Hadley was the real inventor:—and in page 138 of the former, is the following passage. "The horizon is often too indistinct for observing altitudes at sea, and this inconvenience is said to occur oftener in calm than in rough weather." This coincides

	°	′	″
Mer. Alt. Jupiter.	59	29	0
Correction		36	0
	58	51	0
Refr			34
True alt.	58	50	26
Z. D. N.	31	9	34
Decl. N.	20	19	4
Lat. N. in mouth of Thames	51	28	38

	°	′	″
Mer. Alt. Sun	18	21	30
		9	26
	18	12	4
		2	43
	18	9	21
Sem. D.	+	16	13
Tr. A.	18	25	34
Z. D. N.	71	34	26
Decl. S.	19	37	31
Lat. N. in Harwich Harbour	51	56	55

The *correction* is a *constant* quantity, but different in each instrument, and arises in construction, from the angle formed by the pendulum and its arm not being exactly a right angle. It is found by observing any known angle, the difference between it and that obtained by the horizon being additive or subtractive according as the latter is in defect or excess of former. Corresponding altitudes of the sun have been generally adopted to obtain it, another sextant being employed, as in Mr. Davy's examples; if with the sea horizon the dip and error of the sextant must be applied; if on shore by the same sextant, (which is recommended,) observe the reflected image of any *fixed* object in water, oil, or mercury, and correct it for index error; half the angle will be the altitude above the horizon: observe the altitude of the same object by the pendulum horizon and the *difference* will be the correction of the latter; to be added or subtracted from all altitudes, as it may be in defect or excess of the former.

A. B. B.

NOTES ON TRINIDAD, IN 1803.—*By Capt. G. H. Columbine, R.N.*

(Continued from page 460.)

HAVING finished hereabouts, we weighed and anchored off the mouth of the Ortoire, but a great swell setting in, we were obliged to put to sea on the 25th, and stand to the northward. Before we got to Manzanilla Point, we saw a ship at anchor close into the surf off the Oropuche, and soon after she went on shore. We made all possible haste towards her, passing through the rocks off the point, but found a prodigious sea breaking over her, and every attempt to assist her by our boats fruitless. I therefore returned with the brig to Manzanilla Point, from whence the surgeon, gunner, and a seaman, went by land through the same paths, which we had luckily explored in some measure a few days before, to the place where the unfortunate ship lay. They did not arrive there till one in the morning, when the moon was setting. Three or four seamen had escaped on shore, out of nine who attempted it; the

precisely with what we have already stated, and the following shews, that Hadley himself was the first to provide against this in his own instrument, with an artificial horizon. "Hadley, therefore, imagined that these evils might be remedied by attaching a spirit-level to the plane of his quadrant."]

others perished in making a raft of her bowsprit.* Some few of the slaves also had got on shore, but the master and at least two hundred people still remained on board, and without making any attempt to get through the breakers, seemed to be reconciled to meet the fate which was approaching them, the ship being evidently breaking up. In this dilemma, as none of her own people were able to return to her to encourage the rest, Mr. Coulson, and Jones the seaman, with the utmost intrepidity ventured and succeeded in swimming on board her, through so heavy a sea, that in four hours after, no vestige of her remained. They found Mr. Good, the master, unable to persuade the slaves to quit the ship, yet still resolute to be himself the last man out of her. But the presence of our people, and the light of the fires, which the surgeon had judiciously caused to be made on the shore, greatly encouraged them; and by the efforts of these two brave men who swam to the ship at least ten times, in the performance of this humane work, most of them were got on shore, the master coming last, and scarcely was their escape effected, when the ship went totally to pieces. They were brought thence to the brig, and as they had not any provisions, nor the brig sufficient for such a host, I sent her to Port Spain, with as many of them as she could stow, leaving the rest at Manzanilla Point, under the care of one of their officers, and remained myself with a small party to continue the survey during her absence. All the slaves who were thus left endeavoured to escape, but hunger and the impossibility of getting through the woods, drove most of them back in a few days, and the others were caught by the Caribs, who needlessly wounded some of them in a very cruel manner.

July 27th.—Cleared away a small space, in the wood on the low point of the L'Ebranches, and erected a kind of tent with sails; but we were so troubled with vermin of all kinds, sand-flies, musquitoes, and small snakes, that it was quite impracticable to remain here long. The best, but very ineffectual mode of guarding ourselves from them, was to keep as much as possible in the wash of the sea. I have been so harrassed by them whilst reading the Astronomical quadrant, and my hands taken away from the defence of my head and face, that it was with the greatest pain I have completed my observations.

It may seem ridiculous to complain of such insects, but as they kept us in continual pain, and effectually prevented sleep, had we remained there many days longer, I have no doubt that most of us would have been seriously ill. Added to this, we were extremely annoyed by the rain, and seldom had either dry beds or dry clothes. As it was impossible to remove without assistance, having only a two oared boat, I sent to Mayero in hopes of procuring a larger one; and on the sixth day we gladly quitted this place for Mayero, in a Carib canoe, which the commandant had sent to us from thence. There we found an empty hut on the shore, which we took possession of, and though we still found abundance of musquitoes,† and our dwelling was not the best imaginable, yet we seemed in paradise compared with the mouth of the

* She proved to be the Kate, from Africa, with slaves. About thirteen blacks and five white men were drowned, from 220 to 230 were saved.

† *Marengoine Bigaille*, a musquitoe, *moustique* a sand fly.

Ebranche. Here we remained surveying the adjacent coast, till the Advice brig returned: we then proceeded in her to Port Spain, and shortly after I was seized with a violent and long illness. This, and the ship being ordered on other duty, put a stop to all further surveying. I have, therefore, little more to add, except a short account of the east coast,* from the Oropuche southward, and some general remarks.

The land about Manzanilla Point is extremely fertile; there are prodigious numbers of cabbage trees about it, and between it and the Oropuche, they commonly denote a rich soil. It wants fresh water, but this might easily be procured by digging wells. The face of the ground to the northward of this point is very much broken for about three miles, and contains also some large swamps, of whose extent I could not even guess, the woods are so impracticable. The earth here seems strongly impregnated with salt. Down the sides of some bluff points† projecting into the sea, we perceived small drains of water, but they were all salt, though far within the range of the sea, and at least twenty or thirty feet above high water mark. Three or four days after they were perfectly fresh, rain having fallen in the mean time. A heavy surf breaks along Patura Bay, so that there is no landing between Salibia and Manzanilla. In moderate weather the Caribs get their canoes into the Oropuche; but its bar is so bad, and the surf always so great upon it, that it never can be used as a commercial communication with the sea on this side, which is much to be regretted, as it is navigable for several miles into the body of the island. The Ebranche is a small river, navigable in common for a boat about one mile and a half. It might be made to communicate with the Mitan, and as its mouth is protected by a rocky promontory, the sea is unable to throw a bar across it, as is the case with most of the other rivers. Its banks and the adjacent country are very rich, but low. Some timber for ship building, particularly coarse cedar, (Cayou) might be procured hence and floated down the river. It is either fresh or salt, as rain or dry weather predominates.

A sandy shore extends ten miles from hence to the southward, but the surf prevents landing on any part of it. It is named Cocos Bay, from the singular circumstance of having its shore bordered by a grove of cocoa-nut trees seven or eight miles long. In the middle of this bay the river Mitan‡ empties itself. It derives its waters from the swamp in which it is situated, and as it runs parallel and close to the shore, it seems as if the sea had made a continual effort to wash up the sand on the coast, but the drain of the swamp had still preserved for itself an open channel along its face.

I made repeated attempts to get into this river before I succeeded,

* Out of seven of us who remained on the east coast to survey it, two died, and none of the rest escaped a dangerous illnesss. The east coast being open to the wind and accounted remarkably healthy;—I can only attribute our suffering so much to the unavoidable exposure and fatigue we were subject to, and our inconvenient mode of living.

† These consist chiefly of earth, with a small mixture of sand-stone. They run into the sea in high ridges very steep, and so narrow, that after climbing the first, we nearly pitched over the top, not being aware of this circumstance.

‡ The Mitan is the name commonly used by the Caribs and inhabitants of the east coast. It is sometimes also called the Neg, (from Negro.)

and at length could not effect it, but by having a small canoe drawn from the mouth of the Ortoire by my people, along the shore within the surf. Its magnitude will be seen by the survey to differ most materially from Mallets, and as to the two navigable canals, by which he asserts that the Mitan and Ortoire are connected, I could find no traces of them in either of these rivers, nor had the best informed inhabitants of Mayero, people fond of the chase, and pursuing it through this district, any idea that such channels exist.

The water in it is remarkable for its blackness, which is said to proceed from iron ore, supposed to be in this neighbourhood. This does not seem improbable, as I found in the sand-stone rocks at Point Manzanilla, and Point Mayero, great quantity of iron ore, exposed clearly to view in large flakes, or in long spikes from which the sea had worn away the surrounding stone. Whatever this blackness of the water may arise from, whether from iron ore or from the black stain issuing from the mangrove trees, the reflection produced by it is astonishingly strong. The surrounding objects were shown as clear as in a looking-glass, and I could read the large letters on my note book by reflection in the water. Along the whole of Cocoa Bay not a single stone or pebble of any kind is to be found, it is all sand. The same is to be observed of Patura Bay, with some trifling exceptions of sand-stone; Mayero Bay is also without a stone, except some sand-stones at the south part, but I did not see a morsel of granite or real rock, from the north end of Patura Bay to Guaya-guayare;* although there are in that space three bold projecting points, composed of sand-stone rocks impregnated with iron.

The Ortoire† is a very fine deep river, and will be of the utmost utility as the cultivation of the island increases. For although its bar is bad, yet the Caribs manage to get through the surf, except in bad weather, in large canoes, capable of carrying at least two or three tons. At present its banks are every where thickly overgrown with large trees of various kinds; their branches often meet across the river; and as a very considerable part of them consists of the flowering trees, which abound in Trinidad, they exhibit a very rare and fine scene. These flowers are in endless variety, and of a size proportioned to the trees which bear them; all upon a small scale.‡ Frequently we met with branches hung full of pensile bird nests,§ and iguanas were continually leaping out of the trees into the water, alarmed as our boat approached. It may be imagined that the mind and eye would find sufficient enjoyment for days in the Ortoire; but the heat of the sun which is here excessive, (the trees on either side excluding the smallest breeze) added to the activity of the musquitoes, made us heartily wish to bring our measurements to a conclusion. Even the trees on the banks, beautiful

* About thirty-five miles.

† It is supposed to run twenty-four miles into the country, and is navigable for large canoes about eighteen. It is laid down in my chart as far as we surveyed it, which is twelve miles, where it is thirty feet wide and eighteen deep. The banks are low for this distance, particularly towards its mouth, the river running through a country nearly plain for that space; afterwards moderate hills arise, and its banks increase in height.

‡ We saw them in August. In May and June they are still more abundant.

§ Oriole.

as they are, yet being continued in endless rows, without any break, began to be tiresome. This river as well as the Mitan abounds with fish. The lamentine, or sea cow, and shark are to be found there; and large water snakes from fourteen to nineteen feet long; they are harmless, and often at night are heard lashing the water with their tails, producing a noise like a cart whip. Here is also a kind of amphibious hog; and the mangrove trees on its banks, as well as those at L'Ebranche, afford plenty of delicious small oysters.

In the woods are abundance of deer, laps,* and various animals, none of them either willing or able to contend with man; although their loud roarings in the night would lead a stranger to conclude that he was in a very dangerous neighbourhood. One of the most remarkable of them is an animal about the size of a dog, with a long neck and small mouth, out of which it projects a very long tongue, laying it quietly upon the ground to decoy the ants, who soon cover it, and are immediately devoured. Its legs are short, but armed with long and powerful claws: when attacked it lies on its back, and seizes its enemy with them. The best dogs are often destroyed by it in this manner, and it would be difficult to disengage a man if he imprudently attempted to handle it.

The Ortoire is subject, in the rainy season, to violent but short overflowings, they are however, confined to its upper part. When its bed is already full, an additional fall of heavy rain brings down a sudden flood which rises to a considerable height, as may be seen by the slime and filth left by it high up in the trees; sometimes upwards of thirty feet, where its course is narrowed by the adjacent hills. Large trees are torn up, and carried along with the rapidity of an arrow. The forest itself bends before the torrent. But this lasts only some hours, and never reaches far down the river, being chiefly absorbed by the sandy soil of the country, over which it disperses itself. The continual decay of vegetable matter during a course of ages, has, with other causes now covered this sand with earth; but the basis of all the east side of the island is sand.

I have observed already that in the rainy season the water in the Ortoire is fresh; but that in the dry season the influx of the sea, overpowers the small drain from the interior, and makes it salt to the distance of eighteen miles from its mouth.

I was assured that eighteen miles up the river there is a great quantity of moura trees, a hard wood; and from the curvatures of its form very proper for knees in ship-building. It is wonderfully durable under water, and squares from one to three, and sometimes even to four feet. In many parts along its banks trees are to be found useful in ship-building, such as the cayou, a coarse kind of cedar, and copayu,† of which there is a great quantity; a hard wood very proper for ships' planks.

These might be floated down the river, either by lashing casks to them, or by simply boring large augur holes in their ends, and plugging the holes securely to confine the air.‡ If government should think worth

* The lap is something like a rabbit, but its flesh more resembles pork.

† Called Copaw by Mr. Burnett.

‡ I have heard that filling the hole with oil answers the purpose better, but do not understand upon what principle.

while to try an experiment on a cargo of this timber, a ship provided with good anchors and cables, might lie securely off the Ortoire to receive it.

The district of Mayero is low; the soil is sandy, but covered with good earth, and very fertile. It is bounded by a long sandy bay; in the northern part of which the water is always sufficiently smooth to afford good landing for two or three miles; although it is as much exposed to the east as the rest of the bay, where a heavy surf breaks.

The sea shore is well settled, entirely by French: who till now had only cultivated cotton; but when we were there, they were converting three estates from cotton to sugar. The French colonists are mostly of respectable families, driven out of the other islands, and robbed of their property by republican rage; and still retaining that sense of loyalty to which they have sacrificed so much. They feel a rational, and I believe, sincere attachment to the English government; as it secures their property from depredation, and their persons from insult. It would be straining the bounds of truth to say as much of the neighbouring French Colony at Guaya-guayare.

The river Ortoire runs for some miles at the back of Mayero; and as its present mouth is bad, it has been proposed to cut a new one for it into this bay. The length requisite for the cut being only 1,570 yards.* But how is it to be imagined that an artificial mouth dug out through a sandy soil in the face of the ocean could be kept open and free from a bar; when the river cannot keep its natural mouth clear, although it has the advantage of being protected on one side by a rocky cliff.

About two miles from the shore of the bay, in the spring of the year, a short eruption of flame and smoke breaks out through the sea, throwing up a quantity of pitch, with which the coast is afterwards strewed.

A few miles from Guaya-guayare among the woods is a pond whose surface is covered with liquid tar. There are several inhabitants, (French) at Guay-guayare, they cultivate cotton only. From hence to point Icaque the south coast about fifty-five miles is uninhabited; there being but one miserable plantation in the whole extent. I can say nothing respecting this side of the island, my survey ending at Point Casa Cruz; further than that it appeared as we ran along it, to be of very easy access; and, although very hilly, cannot properly be called mountainous. The whole of it is covered with woods.

A channel eight miles across divides the south-west point of Trinidad from the coast of South America; which is low and flat, and so very shallow and muddy, that the mangroves and other trees have grown into the sea several miles beyond the land, which is for a great extent a mere muddy swamp. These trees are thinly inhabited by the Guaranoes; a race of Indians who build their huts among the branches, and live on fish and the fruit of the trees. They are harmless and carry on a little traffic with Trinidad in baskets, nets, and fish.

The Weather.—The rainy season is reckoned to commence about May or June, and to continue three or four months; but the year 1802,

* Mallet calls it 2,600 paces; if he means a space of 2½ feet, this would be equal to 2,170 yards.

was remarkably rainy, it scarcely ceased for eight or nine months, and the weather was not settled before the middle of January 1803.*

It is observed that within these few years more rain has fallen than formerly. The Spaniards attribute it to the presence of heretical English!

One remarkable circumstance attends the rain in the Gulf; which is, that it begins in the morning, increases with the sun, till its greatest violence is at noon: decreasing towards the evening; and generally leaving the night, clear, serene, and tolerably cool. In 1803, a moderate quantity of rain fell in June, July, and August; but in general it was so dry that there could not be said to be any rainy season, and in the spring of 1804 the drought was so long, that every building being thoroughly parched up, and ready to catch fire by the smallest spark, some plantation houses, many huts, and a few patches of cane and cotton were destroyed. Even the woods whose smaller underwood and grassy vegetation were almost burnt up by the sun, easily caught fire in many parts either by accidental sparks, or by design to assist in clearing the land. Much of the northern mountainous ridge was in this state, and exhibited at night a magnificent spectacle; particularly at Chaguaramus, where both the opposite mountains were in a blaze; and the valley itself filled and covered with thick smoke far above their summits. The additional heat was plainly perceptible on board the ship near a mile and a half distant.

[The effects of exposure from surveying were tolerably severe in this instance. Out of seven, two died, and none of the rest escaped a dangerous illness on a coast reckoned remarkably healthy!—Ed.]

(To be concluded in our next.)

Local Attraction.

There are two subjects in navigation which have obtruded themselves of late years, on the attention of certain careful navigators, but which, by the majority of our seamen, are considered of too trifling a nature to be worth thinking about. The effects of local attraction on the compass remain still unattended to, and the management of a ship in meeting a hurricane, so as to adopt the proper course for avoiding it soonest, is yet we fear little understood; and yet these two points are fraught with danger, and have, it is well known, caused the destruction of many a goodly ship. Both of these subjects have been largely treated on in the *Nautical Magazine*, and although we may incur the risk of being considered tedious, we shall not let slip any favourable opportunities as they present themselves, of illustrating their dangerous tendency, until we find them take that place in ships' reckonings which they ought to have. The former of these subjects is well illustrated, in the following letter from her Majesty's harbour-master at Plymouth. This talented gentleman has alluded to ample directions for *finding* the amount of local attraction, which we published in our volume for 1837,

* Thunder and lightning denote the approach of the rainy season, during which they are sometimes very severe. At other parts of the year they seldom happen.

(p. 247,) which, if they be properly followed, are quite sufficient; for we hold, that let the amount of local attraction on each point be what it may, it is only necessary that it should be known, so that a proper allowance may be made for it. Mr. Walker has instanced some remarkable cases of steam-vessels being led astray by it, and undoubtedly they are the vessels likely to suffer most from its effects, in consequence of the masses of iron on board. A very remarkable instance of local attraction will also be found in the escape of her Majesty's ship Hastings, from shipwreck, in the river St. Lawrence, recorded in our volume for 1839, (p. 279,) in which ship it amounted to two points! These, and many other instances which we have recorded in this work, along with the following, adduced by Mr. Walker, should operate as timely warnings to our seamen to grapple with the subject in earnest, and not to allow their vessels to be led from their courses, perhaps into danger without knowing it,—in fact, to know at all times the real course which they may be steering.

Bovisand, June 4, 1841.

Sir.—If the extensive application of iron to the formation and equipment of ships has improved their form, augmented their strength, and accelerated their speed, its *magnetic action* upon the steering compasses has increased the difficulty of coast navigation. The general use of chronometers in the open sea, in rendering navigation comparatively easy, has made the majority of *navigators* indifferent about heaving the log, taking lunars, and making those nice calculations and allowances upon which the accuracy of a ship's dead-reckoning depends. The fact is, that by means of chronometers, ships now traverse the ocean with less difficulty and more speed than formerly; but in consequence of more iron entering into the fabric of our ships, and our navigators becoming less expert in the art of keeping a *dead-reckoning* in narrow seas, and foggy weather, the risk of shipwreck arising from errors in the reckoning has rather been increased.

Ingenious men have attempted to devise means for correcting the local attraction. You, sir, have given very excellent and plain directions for finding the amount of local attraction on a ship's compass. It appears to me desirable, that a popular explanation of the causes and consequences of local attraction in a ship, might turn the attention of seamen to the subject, and teach them how to guard against errors in their reckoning, although the actual amount of the local attraction of the compass on its different points be not ascertained.

Although thousands may deny, there are but few seamen who know that every substance entering into the fabric of a ship, or contained within her, is actually susceptible of magnetic action. Among the metals, iron is by far the most powerful; every nail, bulk-bar, or shot, is in fact a magnet possessing a north and south pole by induction from the globe itself. Take for example any article of iron whatever,—as a pig of ballast, a crow bar, or even a ring, and on applying a small compass, it will be found that the north point of the compass-needle will be attracted by the upper part of the iron, and repelled by the *lower part*. If the iron be turned upside downwards, the same result will be obtained, and it will be found that the part of the metal that formerly attracted the compass-needle, will now repel it,—in a word, that the polarity of a piece of iron is *instantly* inverted by the invertion of the iron itself.

If a piece of iron be placed across the deck, or laid at right angles to the keel, the polarity of the iron will be changed with every roll the ship takes. The elevation or depression of a gun will do the same, the breech now attracting and then repelling the compass-needle, and *hence*, the reason why the compass-card swims, or rather swings, on each side of the course when a man-of-war is rolling from side to side.

Every separate article of iron in a ship is *from position*, and by induction from that great magnet the globe, *a magnet* possessing a north aud south pole, and that change of position in the ship will change the polarity in the iron. I am convinced I need only mention this fact, in order to induce masters and mates of merchant ships to try *by experiment*, and thereby convince themselves how dangerous it must be to stow large masses of iron in a vertical or transverse position in the hold! When long and heavy iron things are received on board, they should be stowed horizontally and in a fore and aft direction.

In ships-of-war, or in yachts, the necessary weights may be regarded as constant, and the local attraction on the compass should be ascertained on all points and under every condition; but in merchant ships, whose cargoes vary, those who have charge should remember the following axioms:—

1st. That all iron is from position magnetical.

2nd. That a ship's rudder is at the stern, and the steering compass near the helmsman, and on the upper deck.

3rd. That the greater part of the iron in a ship is *before*, and also *below* the place of the steering compass.

4th. That the upper parts of all the iron in a ship are therefore nearer to the compass-needle than the lower parts.

Hence it follows, that the upper parts of all the iron articles on board, excite a *greater influence* upon the compass than do the lower and more remote parts! The north point of the compass-needle is, therefore, drawn *forward* in north magnetic latitude, but driven *aft* in the southern hemisphere. The south point is repelled by the upper part of any piece of iron here—but it would be attracted at the Cape of Good Hope!

Without enlarging on these magnetic properties of iron, in a cast or wrought state, let us enquire what takes place in practical navigation. If a ship were built entirely of wood, the local attraction of the ship upon her compass would be *very small*. If this ship were placed in an east and west direction when empty, her compass would indicate the true magnetic direction of her keel; if now, a cargo of hard-ware be put on board, the north point of the compass (placed in the binnacle,) may be drawn forward by the local attraction of the cargo, and instead of the ship's head being east or west, it may now be E.b.N. or W.b.N., and therefore the compass would indicate a course one point too far to the northward,—and if at sea, the ship would be every day to the southward of her reckoning, and the nearer the course steered to the magnetic east or west, the greater would the error in the reckoning be.—Permit me to offer a few illustrations in support of my position.

On the 30th of December, 1818, being in command of a King's store-ship, laden with *iron tanks*, and bound to Plymouth, and knowing that these tanks would excite an influence upon the compasses, a course was steered W.N.W. from St. Catharines point for the Start:—there was a fresh breeze at east, and clear weather, but at daylight the Start bore N.N E. twenty-one miles! In this case, the ship was at least eight leagues farther to the southward than she ought to have been by steering W.N.W. I was not then aware of the fact, that an *iron tank* would exert a magnetic influence equal to a solid cube of the same dimensions.

On the 26th of March, 1803, her Majesty's ship Apollo sailed from Cove of Cork, with a convoy of seventy sail of merchant ships; on the 2nd of April, at three in the morning, *the frigate and forty sail of her convoy*, went on shore on the coast of Portugal, at a time they imagined themselves three degrees to the westward. The loss of these ships may be ascribed to the local attraction of the *frigate* upon her compasses, for about thirty sail of the convoy had during the night wore to the north-west, and escaped destruction. This convoy had been steering for several days in a south-west direction, the north point of the frigate's compass would be drawn forward, thereby indicating a course farther to the westward than the ships were really steering, and hence the melancholy loss of so many ships!

Being in charge of her Majesty's ship Royal William, recently launched and

equipped at Pembroke, I was directed not to put to sea without two steam-frigates, ordered to accompany me to Plymouth: they arrived and towed the ship down Milford haven, and out to sea:—sail was then made with a fresh breeze from north-west; there were, however, symptoms of the wind drawing to the westward, and I shaped a course for Scilly, instead of for the Lands End. Capt. Oliver, of the Dee, hailed, "how long do you intend steering on this course?" I replied, "till I make Scilly light." The wind freshened,—the ship increased her pace to eleven or twelve knots, and the steam-frigates were left far behind. We made Scilly light, and bore up for the Longships, passing between them and the Seven Stones,—passed up Channel, and ran into Hamoaze, the wind having drawn to the southward. The steamers had continued their course with sail and steam, and made breakers under their bows on the north side of Scilly, the light being eclipsed by St. Martins head. They backed their engines, shortened sail, and stood to the north-west till daylight, when no three-decker was to be found! They searched the rocks in vain, and proceeded to Plymouth, alarmed for the safety of the Royal William. It now turned out that *their compasses* indicated a course that ought to have carried the steamers far to the westward of the Scilly islands:—the north point of the compass was drawn forward by the influence of their machinery.

I had occasion to return to Pembroke to bring round another line-of-battle ship, taking a passage in the steam-frigate Salamander, commanded by Capt. Austin. The adventure of the "Royal William" induced us to make many observations upon the local attraction of the steamer during the passage. A dockyard sailing vessel was taken in tow, and after rounding the Lands End, we shaped a course for St. Anns Point, with a firm conviction on my part of making St. Govans Head. The wind shifted to south-west, with thick weather, and as we neared the Welch coast, we were amused as well as *instructed*, by the master of the vessel astern, standing up and waving his hat to steer more to port. He actually *cast off the tow rope* and hauled up two or three points! We went on as before, and as was expected, made St. Govans Head, south-east from St. Anns Point.

The master of the lighter knew by *his compass* that we were steering too far to the eastward. *Our object* was to prove how little dependance may be placed in the compass of a steam-vessel, when the local attraction is not known.

The steamer "San Juan," ran on shore on the coast of Portugal, and more recently the "Thames," instead of making the Longships,—made Scilly and was lost. It is only a few days since the "Great Liverpool," returning from the Mediterranean, in steering for the Lizard, made the *Start*, and I am informed, that in going up the Mediterranean on a course intended to carry her to the northward of Galita, she actually passed between that island and the African shore in the night!

Instances might be multiplied to shew that in north magnetic latitude ships will almost always be to the *southward* and *eastward* of their reckoning, by reason of the north point of the compass being drawn forward, and the south point drawn aft by local magnetism; but in the southern magnetic hemisphere things will be inverted, and ships will generally be found to the *northward* and *westward* of their dead-reckoning!

H.M.S. Thetis left Rio for England, and ran upon Cape Frio, steering a course which *ought to have cleared the land*. The north point of her compass needle was repelled aft, and the south point drawn forward by the frigate's local attraction; her compass indicated a course more easterly than the ship was really making.

In conclusion, I invite the mariner to watch the effects of local magnetism upon his compasses! Let him make frequent experiments with his compasses, and avoid the stowage of large masses of iron in a vertical or transverse position. Compasses too, are often placed too close to *each other*, a single compass is to be preferred near the binnacle, but that one should be narrowly watched!

I am, &c.

To the Editor of the Nautical Magazine. WILLIAM WALKER.

The Voyage of the Ship Florentia.

(*Continued from p. 453.*)

May 3rd.—At 3 P.M. came to anchor in Manila roads, in five and a half fathoms,—veered to sixty fathoms; the light-house on the river point E.N.E. distant from the shore about two miles:—only five vessels in the roads, two American, one Spanish, and two English. On entering the bay, we were boarded by a Spanish row gun-boat for a report. At 7 in the evening were visited by the port-captain, and received permission to go on shore. We now learnt the intelligence that disturbances continued in China.

May 4th.—On Monday, (English time,) great was my surprise, when on arriving at the house of Messrs. Halliday, Wise, and Co., to whom I consigned the ship, to find that it was Sunday in Manila! these people having kept their time as given by the earliest navigators, who discovered these islands from the eastward.

Manila, the celebrated city, which in the year 1740 contained only from 6 to 7,000 inhabitants, in the city and suburbs now contains 80,000! The population of the island is estimated by the government returns at 4,390,000 souls. The houses in the city, as well as the mercantile houses in the suburbs, are built substantially of stone, having a verandah or balcony along the upper story. The lower fronts of a great many houses are disposed of to different persons, Chinamen and others, and converted into shops, and the upper part of the house is reserved for the use of the family, occupying the building. The back part of the lower or ground floor is used for stores, stables, coach-house, &c. The rooms are generally large and lofty, the sala or drawing-room being the principal room for visiters: the comeda or comedor is the next, and which is used for meals, and from these two rooms the quartos, cameras or sleeping apartments, are entered. These rooms are splendidly furnished, and with great taste, many having elegant prints and pictures framed and glazed. Glass hanging lamps, and many ornaments of bronze, gilt glass, artificial flowers, fancy clocks, &c., chiefly French, are found on the different tables and niches in the rooms. Even the Chinese and the richer class of Mestizos imitate the same style; the Mestizos generally having images of the crucifixion, patron saints, and the Virgin Mary, tastefully yet taudrily dressed, and placed in very handsome gilt and ornamented glass cases. The houses of the lower classes and Indianos in the suburbs, and generally in the country, are built of bamboo, and are raised on posts a few feet from the ground, the sides sometimes run up with plank boarding, but more generally with a thatch, called by the natives nerpal.

The principal streets are tolerably wide, but in the city and chief suburbs there are many very narrow, and you might hold a conversation with your opposite neighbour with great ease, and which is oftentimes done by the senoritas and their nubios, as they call them here. The Spanish and higher classes of people dress in European costume, and the Chinese according to their own custom, but the male natives invariably appear in a light shirt, worn outside their trowsers, and the

females in a skirt of a frock, with a seyce or wrapper round it, and a loose penia or muslin vest and a handkerchief over their shoulders; slippers but no stockings. The slippers are kept on by fixing their little toe outside the edge of the leather, and I have often been surprised to see them keep them on in walking, but much more so in dancing, an accomplishment in which they excel. One of the most elegant dancers I saw in Manila was a Mestizo lady, who wore the slipper. They show much vanity in wearing them,—very richly ornamented with gold and silver embroidery. Their hair is worn thrown back from the forehead, and fastened to the back part of the head with a pin or comb; it is jet black and very long. I have seen girls and women in the street with their hair curling over their shoulders, and reaching below their knees. Many European ladies adopt the Mestizo costume in undress, on account of the great heat of the climate. These people are seldom above the middle height of stature, and are not a bad looking race; many of the females might be called very pretty, and some even handsome, and generally good figures though small. The Spanish and Mestizo ladies are very fond of attention, and receive all compliments with much apparent satisfaction, but are fond of retaliation, and when they please can be satirical enough. This conversation and mode of jesting is called by them bromar, or *palabras de bromar*, of which they are very fond, but they invariably let you know the credit they give you for the language you may make use of to them. They appear gentle, kind, amiable, good-natured beings, and to a stranger will pay much attention, and endeavour both to understand, and make themselves understood in the conversation that may be going on. They almost all invariably play the guitar, and many of them are proficient in music. I have heard some Italian songs and operas both sung and played extremely well; indeed, Rossini's and Balfe's operas, with Broadwood's pianos, with the whole tribe of orchestral instruments, are not unknown in Manila.

Those who know anything of Spanish customs, with respect to visiting, if they are admirers of them, would enjoy Manila. Music and dancing, the lively and pleasing cancion and modinas, (modinyas,) the inspiring waltz, and luxurious contradanza, are kept up till the moderate hour of eleven,—when after sweetmeats, and a glass of liqueur or water, the party break up well pleased with each other, parting with "buenas noches," "adios," "y otras memorias," to meet again on the morrow.

At eleven o'clock the gates of the city are shut, and all parties passing the streets after that hour are challenged by the sentries on duty, of whom there are a great number. One is at the end of almost every street in the principal parts of the place, "Quien viva" is the hail of the sentinel,—"Espana," the answer. "Ausente," again calls the sentinel,—"Bueno," the answer, and he lets you pass. Several ludicrous circumstances have occurred to Englishmen not understanding the language or customs; one a short time before I arrived to a master of an English vessel, lying in the river. In proceeding from Calle Santa Cruz towards San Fernando, to go on board his ship, he was challenged by the sentry, having lately arrived and not knowing a word of Spanish, he answered with the English words, "All's well." The soldier, after

challenging three times, and receiving no other answer, came to the charge, when the poor captain imagining he should be spitted, and being quite bothered how to proceed, laid hold of the musket, wrenched it out of the sentry's hands, and bolted off towards the river with it, the centry after him full speed. On crossing a bridge where a branch of water runs past the street, he threw the musket and bayonet over the bridge into the water. The sentry here overtook him and endeavoured to stop him, but the valliant skipper seized him in turn, and pitched the unfortunate fellow after his musket, in order that they should not be separated, and made good his escape to the landing place, and eventually on board his ship, fortunately without discovery.

The heat is almost intolerable, the thermometer being 92, 94, and 96 generally in the shade, and one day I witnessed it 105. Carriages are always at hand, and without this really necessary convenience, it would be almost impossible to transact business. The heat of the day from eleven to three is most oppressive, but my visit was unfortunately at the hottest season of the year in Manila. The most pleasant time is from daybreak till half-past seven, when most persons, who attend to their health, either take horse exercise or a moderate walk, and generally bathe; it is also equally pleasant from half-past five in the afternoon till dark. This is the general hour for the drives after dinner in the Calzada, which is a space between the fortifications of the city and the bay. Every day are here congregated the rank, beauty, and fashion of Manila, (it is the Hyde Park of Luzonia,) where smiles, nods, congratulations, and kind enquiries pass an hour very pleasantly, as a prelude to the *tertullas* of the evening. I have sometimes seen a range of carriages, nearly a mile in length, passing and repassing each other in two lines. Near this spot is the exercise ground of the troops; generally two, and sometimes three or four regiments are exercised together. These troops, (there are seven regiments in Manila,) are composed of natives, officered by Spaniards, and make a formidable appearance. One regiment in particular performed their evolutions in a manner highly creditable to them, and their fire in vollies, &c., was really done in excellent style. Their deploying and forming line and square, was excellent, and done with equal despatch and accuracy, and great credit must be due to the officers who command them.

The fortifications of Manila are good, the guns are mostly (those towards the water side) 24-pounders, but having been cast here, are not to be relied on. The principal breastwork on the citadel is composed of a battery of twenty-four guns abreast of the anchorage, with a cross fire from the north and south bastions, as well as two other outworks of about fourteen guns. These last cannot be brought to bear until a ship is in three fathoms water, and cannot do much execution except when landing any force within their range: any force landing to the northward or southward of the town might take possession of the suburbs instantly, and the city afterwards, as the ditch round the walls might be easily waded, it being nearly filled up with mud. Even if the bridge were destroyed, the ruins would fill it, and almost make a passage for storming. To the northward I am not aware of any defence, but to the southward is a battery about a mile from the fort, near some barracks, where a regiment is always lying. The dragoons scarcely

deserve their name, being mounted on little rats of horses, which a couple of men might carry away. The horses of Manila soon tire, are incapable of any great exertion, and are not to be compared with any of the English breed. To go a journey of eighteen miles and back, horses must be procured to change at half the distance. A friend of mine going with me to the Fiesta at Antipola, we started over-night, and stopped at Marachino till daylight. We then got horses in the morning to take us to Antipola, and returned to Marachino the same night, and to Manila on our own the next morning. These were considered good horses at Manila. Another instance;—I went to Marachino one Sunday at daybreak, stopped the day there, and returned to Manila in the evening: the same horses could not take me on to Pena Franca the same evening.

The military are, apparently, very strict in their discipline. One evening having been induced to stop at Pena Franca a quarter of an hour longer than usual, on my return I found the gates of the bridge locked. It was then only ten minutes past eleven o'clock. All my entreaties and offers of "*gratificacion*" would not induce the guard to open the gate, and let me pass through; consequently I was obliged to leave carriage, coachman, and horses at the gates all night, and proceed in search of a canoe to cross the river; after a considerable time I found one, but did not reach home in Santa Cruz before midnight. The coachman found his way home with the carriage and horses in the morning, as soon as the gates were opened.

The religion professed in these islands is the Roman Catholic, no other is tolerated. The greatest credit is due to the curas and clergy of the country for the manner in which the lower orders are brought up; there is scarcely a person who cannot read, and many of them are able to write. I have witnessed what would be a rare sight in England, in a village of Luzonia, composed of scarcely two thousand inhabitants, all approaching the church at half-past six in the morning for their early service. Every one, on entering the gate of the church-yard making reverence, the men taking off their hats, and with the women performing the duties of devotions to a Supreme Being with devout hearts and sincerity of zeal. I was stopping at the convento at the time, and I confess the picture in the church struck me forcibly.

The cura, Padre Matteo, informed me, and from what I saw, I believe it, that in his parish, there were but few poor persons, and those who were so, had become so from bodily afflictions, and that crime was scarcely known—indeed to hear it, or of depredation was a most rare occurrence. The fiestas are very numerous, which is the case in most Catholic countries; they are conducted with much theatrical pomp and splendour. Their processions are very gay and imposing, and end generally with a quantity of fireworks. During the time I have been in port, two-thirds of the days have been fiestas of some description, though they all partook of a religious character. The longest in Manila lasted nine days, it occurred in the Ronda in consequence of partially rebuilding and ornamenting the church or *iglesia*. On the last evening the fireworks were let off, and I should think there were not less than 5 or 6,000 people present; the affair was well got up, and went off well: the rockets were the best I ever saw. A theatre, open to

the public, was erected in front of the church, where a performance took place previous to the exhibition of fireworks, and all finished with a ball and supper at the convento, given by the good fathers, and which was kept up till a late hour.

At the conventos, particularly at Marachino, Antipola, Santa Ana, &c., the padres are most hospitable and attentive, providing a visiter with everything he can wish, feeling they could not do sufficient to make him comfortable, and this is the general character of the clergy all over the island; the principal portion of them are natives, or *Mestizos*, and they generally are well informed men. The convento at Marachino was quite a picture for cleanliness and comfort, and the Padre, a warm-hearted man; he had a nephew and niece living with him, and Senora Marsalina certainly took the lead, and conducted all the domestic arrangements with great spirit, but she was the greatest chatterbox I ever heard. The Fiesta de Antipola occurred shortly after I arrived. The shrine and image of the Virgin Mary here has performed many wonderful miracles; they say, owing to her intercession, the British left Manila after taking possession of it. However, very great adoration is paid her here, and generally the shrine is visited annually by from 70 to 80,000 persons at this season, and the revenues of the convents reap a rich harvest, by the sale of scapularias, &c., in fact, you can scarcely see a native without one, as well as many Mestizos; they wear them attached to their beads round their neck, with the superstitious idea that it will preserve them inviolate from all evil.

The governor had been very busy while I was here putting his guns and fortifications in order, and it was suspected he was not a little in terror of the English fleet approaching his government. At any rate the British did not appear to be favorites at all with him: it was particularly noticed that he never returned or acknowledged their salute when meeting, and consequently many of them never saluted him after receiving the slight. His Excellency had also issued orders for all guns in the hands of merchants, (and they were mostly in the hands of English houses,) to be sent to the artillery ground as a depôt, and it was reported he had been very minute in his enquiries respecting foreigners resident, or arriving in the place; and that if the British fleet wanted provisions or refreshments they were to be supplied at some of the ports to the northward, as he objected to their coming into Manila bay.

The trade of Manila must be very great: the Chinese act as a sort of middlemen with the merchants and shopkeepers, all the shops are kept either by Chinamen or Mestizos. It is remarkable that in a Chinaman's shop you never see a female attending it, but in those of the Mestizos none but females attend: the latter shops sell more native cloths, and the Chinese more British. The Mestizos are very fair dealers, but the Chinese (like their nation) are worse than jews. All their shops are open in front and very small, some being not more than eight feet square, yet it is astonishing to see the quantity of goods that are placed in them. There were few or no Chinese articles for sale in consequence of the stoppage of the trade with the British in China.

The imports of Manila are chiefly British manufactures; linens and cottons of very light colours, and handsome patterns; hardware, and articles of British produce, French and German toys and goods, wines,

&c. Its exports consist of sugars, rice, hemp, tobacco, hides, and cotton; a small quantity of coffee, indigo, rhubarb, native cloths, and hats.

Since the opium receiving ships left Canton river, this port has become the depôt for opium, and the vessels carrying on the trade come over here for their supply. They are very smart vessels, and are well manned and armed. The Penia cloth is made by the natives from the fibre of the pine apple tree; its texture is remarkably delicate, soft, and transparent, it has a very slight tinge of pale yellow or straw color. It is formed into shawls, scarfs, and handkerchiefs, as well as dresses, and beautifully worked with the needle, sometimes one of the native girls or women is more than a month embroidering one; they say it affects the eyes so much that they cannot work long at a time on it. The elaborate work enhances the price of the article. The great heat of the climate, in addition to the indolence of the Spaniards prevent Englishmen exerting themselves as they do in other countries. The annoyance of the revenue laws and the officers, with the formalities of the custom-house, and other offices is very great; in fact, a great portion of the laws, rules and regulations of the revenue and the port are very annoying and absurd. This is acknowledged by Spanish merchants themselves, but when observed to them they only shrug up their shoulders and exclaim "*paciencia*." Patience is a virtue here certainly, and it requires no small quantity in your composition to get done what you want expeditiously in Manila. I have often laughed at the Spanish mode of doing business. A Spaniard goes to the counting-house of another merchant, he enters, makes his salute, is offered a chair, and a cigar as a matter of course. The smoking opens the business; during the progress of the cigar, a question or two relative to ship arrivals, news, "*Escandalo del dia*," &c., is put and answered. The cigar out, a sounding question of the real business is put and replied to, and then "Adios" and salutes: next day a similar visit takes place with its accompaniments of course, and should it be about twelve o'clock a glass *a sabera* to the cigar, and the real object of the visiter is then learnt. However a third day is usually necessary to finish the business and come to a conclusion. This is Spanish custom, entirely dilatory and diplomatic; there are some exceptions certainly, but this is almost the general way.

The people generally appear contented; they gain a fair livelihood notwithstanding their number, their living certainly costs but little. I visited and saw the Fabrica de Tabaccos, at the Estanco, in which there are one thousand one hundred men, and seven thousand five hundred women employed in making cigars. Those females who are industrious earn on the average two rials per day, and the men about three. Their living does not cost them half a dollar, or five rials a week, the remainder of their earnings is spent mostly in dress, and a portion to the church. I have seen girls of fourteen and sixteen years of age in the Fabrica with a Penia vest on of eight or ten dollars in value, and gold ornaments that could not cost less than forty dollars. Cigar making is the occupation of a great number of the lower orders; those who work with the needle on Penia cloth, make much more money. They all appear very industrious, and in their Neepah houses are never idle. The Fabrica de Tabaccos, under the charge of Don Jose Victoriana de Badia, the Directore, is a large building outside the city, it forms a

square with a court in the centre. The place where the cigars are made runs all round the square, a passage leads down the centre, and on each side are low tables, at each of which a dozen girls sit, superintended by a matron, forming the cigars. This is done by the tobacco leaves being first cut into lengths, prepared, damped, and beaten, and finally rolled up. They are then conveyed to other rooms, where they are cut an exact length, made up into bundles, weighed and lastly packed in boxes. The cuttings are picked small, and made up by men in another part of the Fabrica into cigarillos, or paper cigars, which are much used by the people in Manila.

All parties occupied in the Fabrica, when they leave are searched, the matrons search the girls first, and each other afterwards, to prevent any tabaccos being smuggled from the Estanco. A guard is stationed in the court of the Directore's residence, and another at the entrance of the Fabrica. There is a custom all are addicted to, both Mestizos and Indianos, men and women, viz. chewing the betel or buyen, and smoking cigars, which is carried to an extent I never witnessed elsewhere, and though the custom may reconcile one to the use, yet at first it is very disgusting to Europeans.

Provisions here are very cheap, the beef is good though small, (mutton is scarce,) pigs, poultry, and vegetables are good and reasonable; fruit, plenty and cheap. Water is obtained for the shipping by proceeding a few miles up the river, until it is found fresh enough; low water is the best time to fill the casks. Water, in Manila, is kept in tanks in the houses, and some brought down in canoes from the upper part of the river, for the use of the place.

[Our correspondent writes Manila "Manilla," and even gives its pronunciation: but he has fallen into the common error, so prevalent, of interfering with the orthography of proper names, too numerous to mention here.—Ed. N.M.]

(To be continued.)

Granulated Potatoes for Sea Stock.

In a former number,* we recommended to our readers, and especially those going on long voyages, a preparation of that useful vegetable the potato, by Messrs. Edwards and Co., of Northumberland-street, Strand. As we consider all such information, not only useful, but interesting, we have selected from a contemporary publication a description of the process by which this vegetable is reduced to a granulated state, and which preserves it good so admirably for any length of time; and as we are desirous of making our pages useful to seamen, in every possible way, we shall occasionally admit the consideration of the table among our usual Hydrographic lore.

As an article of food, the potato is of universal importance; every improvement, therefore, in the art of preparing or preserving it, has a

* See page 288 of our April number.

claim upon the public attention. Of all the varieties of form in which this root is presented as human aliment, none appears likely to prove more generally useful, if carefully prepared, than the potato grain we are about to describe, which is unexpensive in its manufacture, extremely nutritious, and of much finer flavour than when used in any other form. There is another advantage to be derived from the patato grain, namely, the smallness of its bulk, and the compactness with which it can be stowed away—a thing very desirable to travellers and sea voyagers, to whom economy of room is often a matter of no little consequence. For resident families likewise, and as an article belonging to the highest branch of domestic economy, the granulated farina of potatoes would prove most valuable not only as a delicate article of diet, if used alone, but as a substitute for sago, and tapioca, and semolina, and even rice. It makes most excellent puddings, and furmenty, and milk porridge; it performs the various duties of rice—except for eating with curry—and it may be converted into most excellent bread. For this latter purpose, it may be sent to the mill and ground in the same manner as wheat; but it will not, like this grain, yield a bulk of flour less than its bulk before it was ground, because there is no bran to be extracted from it. The bread made of potato flour thus prepared, is nutritious, wholesome, and delicate; but when the potato flour is mixed in equal parts with fine wheaten flour, it produces bread of very superior quality, and at much less expense than if the bread were wholly of wheat. For the crust of puddings and tarts, as well as for various kinds of cakes, the potato flour will be found preferable to wheaten flour. In bags or boxes, the latter in preference, the granulated potatoes, which will keep, with proper care, for twenty years, may be exported to the colonies as an article of luxury, and yield a considerable profit, both to the manufacturer and the merchant.

By the mode in most general use of preparing potatoes for the table, that is, by boiling or steaming them, and letting them remain covered until they are sodden and waxy, they become unpleasant to the taste, and much of their nourishing properties is lost by their indigestibility. There is, moreover, in the potato an acrid and poisonous liquor, which, though expelled from mealy potatoes, very frequently remains, or at least some portion of it remains, in the boiled potato when it is hard and waxy. When a good potato is boiled, taken from the water, and put into an open dish, the principle of this unwholesome liquid flies off with the moisture of the potato, which is instantly evaporated by the heat of the boiled root, and flies off in a gaseous form. If, on the other hand, hot potatoes are shut up in a covered dish, the vapour is stopped and condensed by the dish-cover, falls back on the potatoes and spoils them. Again, if potatoes are not eaten the moment they are done, they lose much of their savour; and this is the reason why a good boiled potato is seldom eaten at the tables of the wealthy. The system practised by many of the English peasants, of hanging the pot of boiled potatoes to dry on the fire, after the water has been poured from them, is erroneous. If they are taken from the fire the moment they begin to crack, they become dry in a few seconds, and are then in a state of perfection, in which, as we have said before, they seldom appear on the side-board of the modern sybarite of England, there to await the call of

his guests. In some parts of England, it is a custom among the more luxurious lovers of potatoes, to change the water while these are boiling, in order the better to get rid of the objectionable acrid juice; and the vegetable is certainly improved by this practice. But with all possible and successful means of improving the boiled potato, it never rises above the rank of an esculent table vegetable; and though the most common, and perhaps the most valued of such vegetables, it is scarcely more highly considered than the carrot, the turnip, the parsnip, the cabbage, green peas, asparagus, and a number of other edible specimens, for the kitchen garden, which, in England, serve in a plain boiled, and frequently in a semi-crude state, as a fuse in the stomach for animal food. Now, the potato has nutritive properties of a much higher order, and might be converted into a cheap, wholesome, and relishing bread, which would prove a great blessing to the working and industrious poor.

The ordinary objections to potatoes being used as a substitute for corn, are, that they are bulky, heavy, and therefore inconvenient to move; that when stored they are apt to vegetate; that unless great precautions are taken, they are affected and decomposed by frost; and lastly, that they are very liable to be damaged and spoiled by bruises, and various other casualties. By the process of granulation herein described, all these objections are removed, and the root reduced to a hard, dry, farinaceous grain, which will stand without alteration the test of all atmospheric changes of temperature, and weight, and will not absorb moisture any more than wheat. This process of granulating potatoes was invented in France more than forty years since, but the jealousy of the wheat growers, the abundance of that grain in France, and the various other purposes to which potatoes—which are not grown there to so great an extent as in Great Britain—are put, prevented this beautiful invention from being followed up and brought into use. It frequently happens, however, that the best inventions and discoveries of our neighbours, on the other side of the Channel, are first made available on our side of the water; and we trust that this will be exemplified in the present instance, and that in a short time we shall be able to purchase potato grain as easily as we now purchase rice.

The machine employed in granulating potatoes is of the simplest construction, and is thus formed:—A board six feet long, four inches thick, and eight inches broad, is prepared and made smooth. In the middle, a hole is bored, and a round wooden circular plug fitted in, two inches in diameter, and rising three inches above the surface of the board. A tin tube, twenty inches long, is made to fit exactly upon the plug, which enters it, so that, when put on, it is strong and immoveable. This tube is pierced all round, and down to a level with the top of the plug, with small holes of about the diameter of a grain of rice or of wheat, but rather less than greater. From its base to a height of eighteen inches this tube is of the same diameter, and full of holes from the top of the plug. At eighteen inches high, the tube assumes a conical form, and ends like a funnel head. In this part of the apparatus there are no holes. On each side of the tube is fixed on the board an upright, of convenient height, made of two inch plank; these uprights are fastened under the board by means of pegs. In one of these uprights a mortise is cut as deep as may be necessary for the purpose for which it is required.

Into the top of the other is let in a lever made of plank, placed edgeways; this lever is fastened with a pin, and plays up and down in the mortise of the other upright. In the middle of the lever and immediately over the tube, is fixed a wooden piston the exact size of the interior of the tube, into which it must play almost air-tight. The head of the piston being cut into a mortoise, the lever is let in and fastened by a pin running through both, in such a manner that, when the lever is in action, it shall have a free motion upon the pin by which it is held. A small bracket is fixed to another part of the lever, to restrain its action and prevent it from rising too far, when the lever is at its greatest height in the mortised upright. The piston is also kept in its proper position, and brought back to its place, at each stroke of the lever, by means of a wire fixed to it, running through a staple, and fastened by the other end to another bracket. A tin circular plate about fifteen inches in diameter, and with raised edges, is placed at the bottom of the tube. The apparatus being thus formed, the board containing it is firmly fixed to a low bench, and the machine is ready for use.

The potatoes to be granulated are thus prepared. Into a large cauldron, or boiler of iron or copper, place a rather open-worked wicker hurdle, so constructed that it shall stand four inches above the bottom of the boiler. Pour in as much water as will reach within half an inch of the lower surface of the hurdle; then nearly fill the vessel with well-washed and dried potatoes, which being supported by the hurdle will not touch the water. Cover the potatoes with a triple fold of linen, first wetted in hot water and then wrung. Put a moderate fire beneath the boiler, and let the water gently reach the boiling temperature. The steam will ascend, penetrate through the potatoes, and be absorbed by the linen. The moment the potatoes are sufficiently softened to allow of the peel being stripped off, they are done enough; for they should remain firm and crisp, and not be acted upon by the heat until any part of their flavour is lost, or the smallest portion of their mucilaginous or their farinaceous parts destroyed; in short, they should not be much more than half done if they were intended for eating, and must remain very crisp. A very little experience will indicate to what point they ought to suffer the action of the steam. The moment they are taken from the boiler they must be peeled, taking care that no iron fork be run into them, as it might discolour them. When peeled they must be laid on dishes, or in a basket, until they are quite cold.

The machine being ready, the tin tube is filled with the cold peeled potatoes, and the piston immediately pressed down upon them. By this movement the potato pulp is forced out through the holes in the tube in long filaments very much resembling vermicelli. These filaments, after attaining a certain length, fall into the tin dish beneath the tube, and in their fall break into little bits about the size of grains of rice. When the whole of the potato pulp in the tube is pressed out, the grains of broken paste are carefully and gently thrown from the tin plate, by inverting the machine, into a sieve, or rather a tin basin, full of holes large enough for the grains to pass, and in which the bits of filament which remain undivided will, by shaking them gently, be broken into the proper size. The grains must be thus sifted over linen cloths, covered with unsized paper, and then taken to a room heated by means of a stove to a temperature of 85° to 90°

Fahrenheit. The experienced manipulator will soon discover whether this, or a lower, or a higher temperature is to be preferred; but the temperature mentioned is that indicated by the inventor. The paper containing the granulated paste is to be placed upon a flat surface—either a table or the floor will do—and very gently and carefully stirred from time to time with a small rake made of box-wood. In about twelve hours' exposure to this heat, the whole of the moisture in the paste will have gradually evaporated, leaving a compact, hard, brittle, semi-transparent grain, somewhat resembling rice, and yielding a very fragrant odour. This grain may now be put into sacks or boxes, and carried into the storeroom or granary, and to any other secure place, without the least danger of its absorbing moisture; and provided the apartment in which it is kept has a free circulation of air, it will remain good during twenty years.

The grain is cooked with a very little boiling, a few minutes rendering it soft and pulpy as boiled rice, whilst by the process of granulation the potato is much improved in richness and delicacy of savour. To the epicure it forms a delicious treat, to the invalid a most useful, nutritious, and digestible aliment. When the stomach can retain nothing else, the potato boiled in either milk or broth will generally be found to remain. In soup for either those in health, or those in sickness it is superior to pearl barley, or rice; and plain boiled in water it is excellent with butter, or, like rice or macaroni, with butter and grated cheese. In another part of this paper we have stated the various other uses to which this new and cheap grain may be advantageously put; therefore we need dwell on the subject no longer; we conclude with expressing a hope that some public spirited tradesman will make an attempt to prepare this grain, and bring it into general use; by so doing he will not only enrich himself, but confer a considerable benefit upon his countrymen.

THE PERIODICAL PRESS AT THE SANDWICH ISLANDS. A file of papers from the Sandwich Islands has lately arrived. In the paper of the 5th of December, the direction to which the vessels of the American exploring expedition had sailed are given. The Porpoise had departed for the Southern groups, to return to Oahu in four months. The Peacock and Flying Fish to Ascension, Kings Mill Group, and the Caroline Archipelago, thence to the Columbia River. The Vincennes had gone to Owhyhee, for the purpose of making a thorough survey of the volcano and Mouno Roa, and all the interesting points in that vicinity. She will also go to the Columbia. The salt lake at Ewa, which has heretofore been supposed to be connected with the sea, and affected by tides, and the salt the product of evaporation, has been ascertained to be of mineral formation, and disconnected from the ocean. Salt is found 180 feet above the surface of the lake. Its depth, which was considered fathomless, proved to be 16 inches. The harbour at Ewa, or Pearl River, was surveyed, and found commodious for shipping, with a good entrance between the reefs, with 23 feet of water upon the bar. Honolulu harbour and adjacent reefs were thoroughly surveyed. The editor of the *Polynesian* says of his paper:—"Typographical errors cannot altogether be avoided, as much of the type-setting is done by natives, who are unacquainted with the English language."—*Times*.

Note on M. Poisson's Theory* *of the deviation produced in the direction of the compass by the iron of a ship.—By Sir John Lubbock, Bart.*

Let Gx be the axis of the ship, x lying towards the ship's head.
G the centre of gravity of the compass.
GN the meridian, N the north.

Let A be the *south pole* of the dipping needle, that is, the extremity of the needle which dips *beneath* the horizontal plane in our hemisphere, let C be the projection of the point A upon a horizontal plane, so that GC is the magnetic meridian. Let the angle $AGC = \theta$, θ varying from $-90°$ to $+90°$, being positive when the south pole A is *beneath* the horizontal plane, and negative in the contrary case.

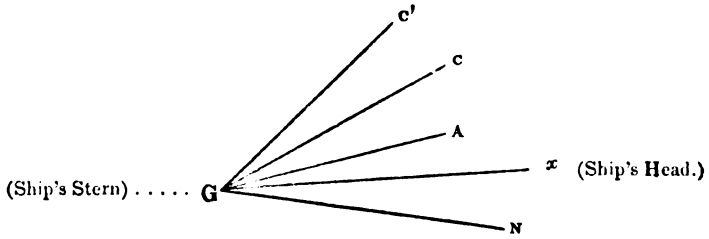
Let $CGN = \psi$, this angle (*variation*) which is the azimuth of the vertical plane CGA may extend from $-180°$ to $+180°$, and is to be considered *positive* or *negative* according as the line GC falls to the *west* or to the *east* of the line GN, or this angle may be considered to vary from 0 to 360°, going from north to south through *west* and returning from south to north by *east*.

Let GC′ be the direction of a horizontal needle, so that C′GC is the *local attraction*.

Let $xGC' = \zeta$ $\quad C'GC = \delta$ $\quad xGC = \zeta - \delta$.
$NGC' = \psi'$ $\quad \delta = \psi' - \psi$.

Let ω be the azimuth of the principal section of the ship reckoned from GN towards the *west*.

$xGN = \omega$ $\quad \psi' - \omega = \zeta$ $\quad \psi - \omega = \zeta - \delta$



M. Poisson arrives at the following equation, *Conn. de Temps*, 1841, p. 146, and *Mem. de l'Institut*, tom. xvi. p. 529.

$$\left.\begin{aligned}&[A' \cos\theta \cos(\psi - \omega) + B \cos\theta \sin(\psi - \omega) + C \sin\theta] \sin\zeta \\ &= [D \cos\theta \cos(\psi - \omega) + E' \cos\theta \sin(\psi - \omega) + F \sin\theta] \cos\zeta\end{aligned}\right\} \quad . \quad (1.)$$

A′, B, C, D, E′, F are constants, if therefore

$$\frac{B}{A'} = c, \frac{C}{A'} = a, \frac{D}{A'} = d, \frac{E'}{A'} = b, \text{ and } \frac{F}{A'} = e$$

$$\cos(\zeta - \delta) \sin\zeta + c \sin(\zeta - \delta) \sin\zeta + a \tan\theta \cos\zeta,$$
$$= d \cos(\zeta - \delta) \cos\zeta + b \sin(\zeta - \delta) \cos\zeta + e \tan\theta \cos\zeta.$$

in which equation a, b, c, d, e are constants, which must be determined from observations at some one place, and which continue invariable as long as the position of the iron in the ship remains unaltered. In order to do this the local attractions corresponding to every azimuth of the ship's head must be obtained and may be inserted in a table, or at least they must be found in sufficient number to afford any others by interpolation. The manner of obtaining such data from observation is described in the small code of instructions which accompanies Mr. Barlow's plate, and is also given in the Nautical Magazine.

* Mémoire sur les Déviations de la Boussole, produites par le fer des vaisseaux ; par M. Poisson.

$\psi =$			$\theta =$
Direction of ship's head ω. x G N.	Local attraction. δ. C′ G C.	Observed. ζ. x G C′.	$\zeta - \delta$. x G C.

N.B. *This Table to be filled up from observation.*

If $\zeta = 0$,

$$-\sin\delta_1 = \frac{d\cos\delta_1 + e\tan\theta}{b}$$

if $\zeta = 180°$

$$-\sin\delta_2 = \frac{-d\cos\delta_2 + e\tan\theta}{b}$$

if $\zeta = 90°$

$$-\sin\delta_3 = c\cos\delta_3 + a\tan\delta$$

if $\zeta = 270°$

$$\sin\delta_4 = -c\cos\delta_4 + a\tan\theta$$

from these four equations, if $d = m\,b$, $e = n\,b$, a, c, m and n may easily be found, and b may be then obtained from any other known deviation.

By solving equation (1.) with respect to tan ζ, the angle ζ may be found corresponding to the angle $\zeta - \delta$,

$$\tan\zeta = \frac{d\cos(\zeta-\delta) + b\sin(\zeta-\delta) + e\tan\theta}{\cos(\zeta-\delta) + c\sin(\zeta-\delta) + a\tan\theta}.$$

Afterwards, by interpolation or reversion, the angle $\zeta - \delta$ may be obtained corresponding to the *observed angle* ζ, and a table of double entry formed, giving the *local attraction* for every value of ζ, the *arguments* of the table being the *observed angle* ζ and the *dip*. This table according to the theory of M. Poisson, ought to continue available in all quarters of the globe so long as the disposition of the masses of iron in the ship remains unaltered.

If, when the ship's head is on the magnetic north and south, no effects arise from local attraction, as was the case in the experiments of Captain Flinders, $\delta_1 = 0$, $\delta_2 = 0$, and hence $d = 0$, $e = 0$.

If the iron is symmetrically situate about the axis of the ship, then according to M. Poisson $c = 0$, $d = 0$, $e = 0$.

$$\cos(\zeta-\delta)\sin\zeta + a\tan\theta\sin\zeta = b\sin(\zeta-\delta)\cos\zeta. \quad . \quad . \quad . \quad . \quad . \quad (2.)$$

Conn. de Temps, p. 150.

$$\tan\zeta = \frac{b\sin(\zeta-\delta)}{\cos(\zeta-\delta) + a\tan\theta}.$$

$$\sin\delta = \frac{\sin\zeta\left\{(b-1)\cos\zeta - a\tan\theta\right\}}{1 + (b-1)\cos^2\zeta} \text{nearly.}$$

If δ' is the *local attraction*, ζ', the magnetic bearing of any compass in any other distant part of the ship, or of the same compass after the disposition of the iron has been changed,

$$\cos(\zeta'-\delta')\sin\zeta' + a'\tan\theta\sin\zeta' = b'\sin(\zeta'-\delta')\cos\zeta'$$

but $\zeta' - \delta' = \zeta - \delta$

hence $\cos(\zeta-\delta)\sin\zeta + a'\tan\theta\sin\zeta' = b'\sin(\zeta-\delta)\cos\zeta'$

eliminating tan θ

$$\tan(\zeta-\delta) = \frac{(a'-a)\sin\zeta'\sin\zeta}{a'\,b\sin\zeta'\cos\zeta - a\,b'\sin\zeta\cos\zeta'}.$$

From this equation it may be possible to compute a table of double entry, giving the local attraction without knowing the dip, the arguments of the table being the *observed angles* ζ of two compasses situate in different parts of the vessel. This table ought to continue available so long as the disposition of the masses of iron remains unaltered. The two compasses must of course be so distant as to have no sensible effect upon each other.

The theory of Mr. Barlow's plate, according to M. Poisson, depends upon the practicability of so disposing the iron in the vessel as to give to the constants a and b in equation (2.) the particular values $a = 0, b = 1$.

According to M. Poisson, the components X, Y, Z of the magnetic action of every system of bodies magnetised by the action of the earth, are linear functions of the components of the earth's magnetic force *(force directrice du globe)*, so that

$$\begin{aligned} X &= A\alpha + B\beta + C\gamma \\ Y &= D\alpha + E\beta + F\gamma \\ Z &= G\alpha + HC + K\gamma \end{aligned}$$

α, β, γ being the components in question, which are respectively equal to $\phi \cos\theta \cos(\psi - \omega)$, $\phi \cos\theta \sin(\psi - \omega)$, $\phi \sin\theta$. M. Poisson shows, by considerations founded upon the symmetrical disposition of the iron in the ship about its axis, that B, D, E may each be taken equal to zero. By resolving the forces $X + \alpha$, $Y + C$, which act upon the needle in the directions of the axes x and y in the directions towards the magnetic north, and towards the magnetic east, estimated by their action on the north or marked end of the needle, we have for the former—

$$\begin{aligned} &(X + \alpha)\cos(\psi - \omega) + (Y + \beta)\sin(\psi - \omega) \\ &= \{(A + 1)\alpha + C\gamma\}\cos(\psi - \omega) + (E + 1)\beta \sin(\psi - \omega) \\ &= \phi \Big[\{(A + 1)\cos\theta \cos(\psi - \omega) + C \sin\theta\} \cos(\psi - \omega) \\ &\qquad + \{E + 1\}\cos\theta \sin^2(\psi - \omega) \Big] ; \end{aligned}$$

and for the force in the direction of the magnetic east,

$$\begin{aligned} &(X + \alpha)\sin(\psi - \omega) - (Y + \beta)\cos(\psi - \omega) \\ &= \{(A + 1)\alpha + C\gamma\}\sin(\psi - \omega) - \{(E + 1)\beta\}\cos(\psi - \omega) \\ &= \phi \{(A + 1)\cos\theta \cos(\psi - \omega) + C \sin\theta\} \sin(\psi - \omega) \\ &\qquad - \{E + 1\}\cos\theta \sin(\psi - \omega)\cos(\psi - \omega); \end{aligned}$$

if $C = \alpha(A + 1)$ $\qquad E + 1 = b(A + 1)$,

the former force

$$= \phi(A + 1)\{\cos\theta \cos^2(\psi - \omega) + \alpha \sin\theta \cos(\psi - \omega) + b \cos\theta \sin^2(\psi - \omega)\};$$

the latter force

$$= \phi(A + 1)\left\{ \frac{1}{2}\cos\theta \sin 2(\psi - \omega) + \alpha \sin\theta \sin(\psi - \omega) - \frac{b}{2}\cos\theta \sin 2(\psi - \omega) \right\};$$

if $\frac{\phi(A+1)}{2}(1 - b) = IP$ $\qquad \frac{\phi(A + 1)}{2}(1 + b) = -IM$

$$\phi(A + 1)\alpha = IN$$

$$\psi - \omega = A, \theta = \delta;$$

the former force

$$= -I \cos\delta \cos M + I \cos\delta P \cos 2A + I \sin\delta N \cos A;$$

the latter force

$$= I \cos\delta P \sin 2A + I \sin\delta N \sin A;$$

which are M. Airy's expressions in his Paper on the correction of the compass in iron-built ships, p. 181.

Sir Robert Stopford's Farewell from the Mediterranean Command.

Malta, May 15th.:—A farewell entertainment upon a grand scale was given on the 11th inst. to Admiral, the Hon. Sir Robert Stopford, by the officers of the Mediterranean fleet, at the Union Club House, Valetta. The Strada Reale was partially illuminated in the neighbourhood of the auberge, on either side the portals of which appeared a large anchor, wrought in amber-coloured lamps. The hall of the spacious building was lined with flags and emblematical paintings on canvass, and Turkey carpets covered the winding stairs ascending to the refreshment room—a marquee tastefully formed of flags; here the music from an excellent band invited us into the noble ball-room before us, the *coup d'œil* of which was highly effective. It might have contained, at the time we entered, about six hundred guests, and the bright eyes, animated smiles, glossy ringlets, and gossamer robes of the fair forms that flitted around us, the gay uniforms of naval and military officers, and the frequency of oriental costume—there being many Turks, both male and female, in the room belonging to the suite of the Prince of Lebanon, altogether struck us, as sober travellers, with no little admiration. Sir Robert Stopford and Lady Stopford, occasionally joined by their son and daughters, formed a very interesting group in one corner of the ball-room. The admiral, at half-past nine o'clock, had been received at the entrance of the auberge by the stewards, and we may say by the whole company assembled, on his arrival in the rooms, with strong manifestations of attention and respect; and he continued looking on at the mazy dance until he was conducted to the seat of honour at the supper-table. This was laid in a long and lofty hall, which was thrown open about twelve o'clock. At the lower end was a pyramidical transparency, in the centre of which appeared Greenwich Hospital, the government whereof the noble admiral returns to England to enjoy; and around this painting were medallions bearing the names of the ships in which he had served. On the outer line of the illumination was a picked crew of boys belonging to the fleet, dressed in blue jackets and white trowsers, mounted one above the other, the boy upon the topmast step whimsically "rigged" as a Greenwich pensioner, and at the sound of his "pipe" the steps were manned and unmanned. On either side the transparency were little marine drummers, the rattle of whose drums joined in with the acclamations of the guests as they hailed the toasts of the night. Round the cornice of the supper room were shields with the names of ships the officers of which were the "founders of the feast," spread upon one long and well-covered board below, and consisting of everything that could pamper appetite in the form of a cold collation.

The decorations of the table were highly emblematical of the cause of the entertainment; and a fine frigate, launched from the confectioner's hands, rode gallantly on a jellied sea in the midst. Champagne was literally more easy to be obtained than water, and many hundred corks must have started from the bottles' necks 'ere the supper-table, crowded by constant relays of guests, saw the last reveller depart.

Sir Watkin O. Pell, in a neat and emphatic address, proposed the health of the commander-in-chief, in whose honour the entertainment was given; upon which

Sir R. Stopford rose amid much cheering. With a voice, strong as though age had taken little from the worthy admiral's powers, he thanked the chairman and the company assembled for the compliment paid to him. He spoke of the length of his present stay on the station, and the satisfaction it had been to him that during his command the most perfect understanding had existed between the fleet and the good people of Malta. The sailors had been much on shore, but their conduct had been orderly, and the authorities of the island had brought but few charges against them. It might be expected of him that he would refer to the successes of the British arms in Syria; he should do so

but slightly; those successes, he need not say, had been the source of proud satisfaction to him. He had reason to thank all the officers under his command, many of whom he now saw around him, for their steady and gallant conduct in the late operations. He had to thank his second in command, too, Sir Charles Napier; but had Sir Charles Napier never been in the fleet, he felt assured that there was not a captain commanding a ship forming part of that fleet but, placed in Commodore Napier's situation, would as ably and as gallantly have carried out a commander-in chief's orders. Much had been said as to whom the credit of the successes in Syria belonged; he (Sir R. Stopford,) thought that there would have been little difficulty in discovering who would have borne the blame had the British arms met with reverses; all that was done leading to the late favourable results had been done by his (Sir Robert Stopford's) orders as commander-in-chief; and he again said, that had not Sir Charles Napier been present, others would have been found to perform the part Sir Charles had performed; where all had done their duty, captains and lieutenants, and mates, and midshipmen, and seamen. The gallant admiral, after again thanking those around him for the honour they had done him, sat down amidst thunders of applause.

Sir Robert Stopford's speech was followed by many others. Captain Sir Samuel Roberts proposed the health of Sir Charles Napier; and then came that toast on which all parties are agreed, "The Ladies." Again the bands in the ball-room struck up, and the dancing was renewed, which terminated not till the sun looked in upon the dancers and bade them good-morrow.

Marine Insurance.

In page 46 of this volume, we stated the case of the Wallaces for which they have been transported.

The following confessions which we were unable to find room for before, form too important a feature in the history of our mercantile marine, to be unnoticed in this Journal, and we therefore, preserve them as undeniable proofs of the working of the system on which that branch of our affairs is conducted.

Confessions of Patrick Maxwell Stewart Wallace and Michael Shaw Stewart Wallace as to the destruction of the ship Dryad.

The following are copies of the confessions made by the two brothers who were concerned with Capt. Loose in destroying the ship Dryad and other vessels for the purpose of defrauding the insurance companies. We omit the names of some parties for obvious reasons, and we also omit certain heavy accusations against persons in this and other countries. The confessions are in the hand-writing of the brothers respectively.

"*Statement made by Patrick Maxwell Stewart Wallace to Mr. John Pirie, Alderman, shewing what part he took in defrauding the several insurance companies through the casting away of the Dryad, Capt. Loose.*

"I, Patrick Wallace, carried on business in the ale and bristle trade at the residence of my father, No. 18, Cooper's-row, Crutchedfriars, from whom I rented my counting-house. About the month of August, 1839, the Dryad was lying in Liverpool, chartered by Zulueta and Co., to proceed on a voyage to Santa Cruz, in Cuba. My brother Michael, who held three-fourths of that vessel, came up to London from Liverpool, and one day, while walking with me in America-square, in the Minories, said to me, 'Patrick, if you promise to tell

nobody, I will let you know a secret of much importance.' I said that I would not mention it, when he told me that he and Capt. Loose had agreed together that the Dryad should be cast away on her voyage out to Cuba, and that if I would insure a lot of goods in London I should have £500 for my share after all the money was paid. I agreed to this proposal, in consequence of which my brother Michael again went down to Liverpool. He shortly afterwards returned to London, came into my counting-house, and presented to me six blank bills of lading, all signed in the genuine hand-writing of Capt. Loose, and I then filled up two of them (stamped) with goods, one to the amount of £715, the other to the amount of £698.

"I then employed Stott, the clerk to Nicholl and Co., to effect insurance on the £715 bill of lading in the Alliance Marine Insurance Company; also Lyndall and Hall, brokers, Leadenhall-street, to effect insurance on the £698 bill of lading in the Neptune Marine Company, which was done by them at a premium of 10 per cent.

"After the above-mentioned two bills of lading were filled up by me, my brother Michael still left the remaining four unstamped ones in my counting-house, and, believing the Dryad was to be lost on her outward voyage, I thought it a good opportunity to make myself some money. Accordingly I filled up one of the bills of lading, with goods to the amount of £1,265, and got Stott to effect insurance on the same in the General Maritime Insurance Company, without my brother's knowledge, for I had a strong desire to put money in my purse independently of him.

"The Dryad sailed from Liverpool on her outward passage on the 7th of September, 1839, and nothing of consequence occurred (except in Lloyd's book that the Dryad had been on the Silver Keys, but got off,) until the 25th of December, 1839, when a letter from Capt. Loose to my brother arrived, along with the protest of the loss of the Dryad. Next day I took the protest to two of the parties interested, by my brother's desire, and requested them to recover the insurance done by them. I then began to think how I could get my protest to recover my £1,265 without their or my brother's knowledge, and it occurred to me that a bribe to a clerk who had access to it would be the most effective way, and I accordingly used the temptation of two sovereigns for the loan of it for a few days. I then handed it over to Stott, who got £80. per cent., or £1,012., from the General Maritime Company, but that company refused to settle in total loss until they should hear whether any of the cargo might be saved. Scott gave me the check for £1,012, which I paid in to my account in the London and Westminster Bank. Stott also recovered the £715 from the Alliance Marine Company, which I also paid in to the London and Westminster Bank to my account, giving my brother Michael £215, retaining the £500 for myself, being the sum I was promised for insuring these goods.

"I likewise received from Lyndall and Hall the £698 for goods done in the Neptune Marine Company; also £600 on freight insured by those gentlemen, which sum I paid my brother Michael, who paid them in to his account with the London and Westminster Bank.

"Finding that the General Maritime Company would not settle the balance on my policy before they had a specification of what goods were saved (a report having appeared in a London newspaper that part of the cargo had been saved) I desired Stott to write to the Consul-General at St. Jago de Cuba for a specification, which he did, and received for answer that the Consul had done everything he could to procure one, but did not succeed, and stated that Captain Loose had left for England two months previously with all the papers relating to the shipwreck. Stott afterwards recovered the balance from the General Maritime Company, amounting to £253, for me.

"One day Mr. Frost, sailmaker in Wapping, Captain Loose's executor, came into my office with a bundle of papers, saying that Captain Loose had died on his passage home, and these were the papers found in his possession. I looked over them, and my brother Michael and I agreed not to show them

to the underwriters, because there was an account of all the cargo that was saved, and which, if they had seen, would have at once opened their eyes to the genuine and overwhelming fact that the goods were never put on board which I had insured. Accordingly the papers were taken away by my brother to a counting-house, and thence to his house in Tredegar-Square, Mile-end-road, which was subsequently found deserted and in confusion by the metropolitan police.

"The £915, seized by the prosecutors, in the funds in my name, formed part of the insurances I received; the remainder I paid my debts with, and in the manner in which such money is usually expended by those who obtain it unconscientiously.

"The above is the part I acted in the transaction of the casting away of the Dryad, which is all truth, as I shall answer to God.

"P. M. WALLACE.

"*Newgate, March* 23, 1841."

"*Statement made to Mr. John Pirie, alderman, respecting my knowledge of other vessels which were and are about to be cast away.*

"One day last year, either in the latter end of the month of May or the beginning of June,——came into my counting-house, and after come conversation said to me,' Wallace, why dont you ship some ale by the——to St. Domingo?' I said it would not pay at that market. He said it would pay if I insured it, as he did not think it would ever arrive at that pretended destination. I declined at that time having anything to do with the business. About six weeks or a couple of months afterwards, he and I were looking over the book of shipping at Lloyd's Captains'-room, 80 Bishopgate-street, when the loss of the—— was written down, and he said to me, 'Are you not vexed now for not doing what I desired you?' and then he told me that he heard the scheme concocted previously to the sailing of the vessel from London, and that——went in her to see the job properly performed.

"With respect to the other vessel, the——, she was a large St. John's-built vessel, which was loaded, I think in the St. Katharine's Dock, my informant being at that time clerk to——. The vessel from London to new South Wales, about the month of August or September last year; so that if she has been cast away the accounts will arrive shortly. About the time of the vessel's sailing——told me he was sure she was intended to be wilfully wrecked, as the owners had mortgaged her to a ship-builder, and had insured her in different offices for three times her value. He offered to go halves with me in €1,000. on goods by that vessel, but I declined the proposition, and it is my firm and positive belief that he has insurances done on that vessel without interest. A young man of the name of——, who lives with his sister, and who was a prisoner in the Compter along with Stott and me, when we were taken up on the Dryad charge, corroborated——'s information respecting the vessel, he having received the information from another party.

"The above is the exact truth, to the best of my knowledge and recollection, as I shall answer to God.

"*Newgate, March* 23." "P. M. WALLACE."

In another addition to his communication to Alderman Pirie, Patrick M. Wallace details the conversation which he had with the young man who was confined in the Compter on another charge relating to the vessel alluded to in the last paragraph. That young man, who had been apprehended on a charge of robbing his master, was afterwards taken up for smuggling by the solicitor of the Customs, and placed in a cell at some distance from the place in which P. M. Wallace was confined; but they, notwithstanding, kept up conversations, although heard by other persons in the prison, on the subject

of the Dryad and the Lucy, in which fraudulent insurances were also said to have been effected. One of the turnkeys subsequently confirmed this account, and Alderman Pirie saw no ground for discrediting any part of the statement of the delinquent.

"Statement by Michael Shaw Stewart Wallace to Mr. John Pirie, alderman, setting forth the part he took in the casting away of the Dryad, for the purpose of defrauding the Underwriters.

"I purchased three-fourths of the Dryad about December, 1837, for £1,200, £1,060 of which was paid in cash, and the remainder by a bill. I went as master of the Dryad to Rio Janerio, and returned in her to London. Loose was the master at that time. Next voyage Loose went as master, with my instructions to proceed to Rio, and take the berth for London. The vessel was consigned to a person at Rio, who had similar instructions from me, but he deviated from those instructions, and sent the vessel to the Cape de Verd Islands for salt, and drew upon me for £315. When I received this intelligence my friends advised me to go out to Rio and look after my property. I went out to Rio in the bark Blair, from Liverpool, and upon my arrival found the vessel a complete wreck, and was angry with the master for his conduct but he threw the blame upon others.

"I was on board the Dryad, dining with Loose, the master, one day at Rio. After dinner he asked me to go forward, and he would show me that I had made a blind bargain, which he did, and at the same time he said that if he had known that the vessel was unsound she should never have seen the Cape de Verd Islands. I said to him that I did not believe that he had the spirit to do such a thing, to which he replied that he wished I would give him the chance. Some other conversation relating to the manner in which he would manage such a business took place at that time, and I began to feel much interested indeed in his way of treating the subject.

"When the Dryad discharged the cargo of salt she took the berth for Liverpool, and I took my passage on board. During the passage Loose and I agreed that if he would cast away the vessel I would give him £200 in cash, and advance him sufficient to purchase a quarter of a new vessel, which he was to have the command of on his return. This was regularly agreed to between us, upon the most perfect understanding.

"On my arrival at Liverpool I proceeded to London, and chartered the Dryad out and home. I informed my brother Patrick at this period that Loose and myself had agreed to destroy the vessel, on purpose to defraud the underwriters. He consented to become a party in the affair, and filled up bills of lading for goods to the amount of £715, done in the Alliance Insurance Office, and £698 done in the Neptune.

"The bills of lading signed by Loose were procured in the following manner. I bought two sets at Liverpool, and Loose signed them in blank. I then brought them to my brother Patrick. Before the Dryad sailed from Liverpool I proceeded to insure as follows:—£2,000 on the ship with Messrs. Howden and Ainsley, and £300 on the freight with the same; £700 with Seldon and Johnson on the ship and outfit, and £700 on the freight out and home; with Lyndall and Hall £600 on the chartered freight; and with Behr, Behren, and Co, £500 on the ship at Liverpool. Loose also, to my knowledge, effected £150 at Liverpool on his effects, and £100 in London.

"The Dryad sailed from Liverpool September 7th, and I had no letter from Loose till the 25th of December, when I received the protest from Falmouth, in Jamaica." (Here Michael Wallace enters into details implicating other parties in the transactions with regard to the destruction of the Dryad, which details we, of course altogether exclude, and which may have been fabricated, with a view to diminish the atrociousness of the plot by dragging others into

participation.) "Nothing of consequence occurred till July, 1840. One forenoon I came into my brother's office, when he showed me a large bundle of papers which Mr. Frost, Loose's executer, had left for me. We examined them, and found that all the cargo had been saved but the salt, and had been sold by the Vice-Consul. It appeared to us that the net proceedings from the cargo saved amounted to about £1,500, which I know nothing about. The wreck of the vessel, with all the stores and cables, were sold, and the bill that was found in Loose's possession appeared to us to be the salvage of the vessel. The bill was drawn on a house in Liverpool by a foreign name, which I forget, and was endorsed by the Vice-Consul, and handed over to Loose by him.

"The papers were taken by me to my house in Tredegar-square, and were destroyed on the night my brother was taken into custody. The papers set forth that Loose had been accused by his crew before the Spanish authorities for casting away the vessel, but was released from custody. This is all that I can think of relative to this most unfortunate affair, and is all truth, as I shall answer God.

"*Newgate, March 23rd*, 1841. "MICHAEL S. S. WALLACE."

"Addition to my former statement made to Mr. John Pirie, alderman, respecting the money I defrauded the underwriters of:—

From British Indemnity Company . . .	£414
From Howden and Ainsley . . .	1,590
From Seldon and Johnson . . .	1,284
From Liverpool Ocean Company . . .	458
Goods, Lyndall and Hall . . .	667
Cash from my brother, being a balance from Alliance Company	215
	£4,628
Paid my sisters' mortgages on the Lucy and Dryad .	£1,100
Cash seized in the Funds . . .	2,200
——by Roe, the officer	116
Left with my wife when I left my home, and given to Mr. Humphries	100
Expended during my concealment, &c. . .	50
Furnishing my house, and various expenses at the time of my marriage	600
	£4,166
"Brought down .	4,628
	£462

"By referring to my books and other accounts, it will be seen how this balance has been expended.

"About May last my brother told me that —— told him that —— and —— had made it up to cast away the Falcon, and that —— was going out to see it was properly managed. He also told me, about the latter end of September, that, —— wanted him to make some insurances on the ship ——, as he knew that she was going to be cast away. At the same time he said that a vessel called the —— was lost, and the insurance companies were not willing to settle the loss upon her.

"I now consider it proper that I set forth a part of my life. Up to the latter end of the year 1836 I was a steady hard-working fellow. At that time I commanded the Delta, and unfortunately went into Liverpool with a cargo from Brazil, and was there introduced into the family of Mr. ——, whose foundation is well known to have been buying old ships and casting them away. I was encouraged by him and Mrs. —— to seek their daughter, and I must confess that ambition tempted me to forget my old playmate and my present unfortunate wife, so far, that I did so, and I believe that I would have done anything to gain Miss ——'s affections. My mother was sorely grieved, and told me that our friend Mr. —— warned me that —— was a bad man. All this I did not

heed, but would go forward, led by Satan. —— encouraged me to get m oney and advised me, saying, 'Get it, never mind how, so as you have it.' I was too willing to follow this bad advice, and have not only ruined myself, but my beloved wife also. This I know, if I had never forgotten her I should not have been in this situation to-day. Although I cannot give any proof respecting the person at Liverpool to whom I have alluded, and his black deeds, watch him narrowly, and I think you will find him out. His ships —— and —— will be cast away, should I not warn him by my fate. He has often informed me that he would do so.

"MICHAEL S. S. WALLACE."

"*Newgate, March 28th*, 1841."

"I forgot to state that at the time I went into Liverpool I was master of the Delta, and had about £200 of my own. —— thought my father had money, and therefore encouraged me, I believe.

"M. S. S. WALLACE.

"*March 29th*, 1841. "W. W. COPE."

The two Wallaces, who were recently convicted at the Old Bailey Sessions, and Alfred Baldock, of Chatham, for a post-office robbery, have embarked on board the Westmoreland (transport,) together with 122 convicts from the hulks, at Chatham. The Westmoreland sailed immediately from Sheerness.

TABLE AND SIMONS BAYS.

Bodmin, June 22, 1841.

SIR.—Believing that no ship will follow the example of the unfortunate "General Palmer," in going to Simons Bay for repairs and supplies, I shall not tresspass on your valuable space by prolonging an unprofitable discussion; but shall be perfectly satisfied in submitting to those of your readers who have had an opportunity of judging of the subject at issue between Lieut. Barrow and myself to decide on whom the charge of "misleading your readers," justly rests.

I request, however, the favour of your inserting a few remarks on that portion of Lieut. Barrow's letter, which appeared in this month's *Nautical*, relative to Capt. Bance, against whom unjust insinuations are thrown out, which might be prejudicial to him in the eyes of those unacquainted with the high character of that most zealous and excellent officer, to whose invaluable services, while port-captain of Table Bay, during the last fifteen years, so many, and especially all our governors and admirals on that station, have borne the most flattering testimony.

Lieut. Barrow states, that ships choosing Simons Bay would "escape the anxiety and probable contingency of having to pay Mr. Bance on the very common occurrences 70*l*. to 120*l*. for the transport of an extra anchor and cable, and 80*l*. or 100*l*. for the materials." There is some difficulty in discovering the meaning of the sentence just quoted, as it can hardly be imagined that the "materials" for any thing larger than a barge can cost so little as "80*l*. to 100*l*.;" but it is quite clear that the writer intends to tax Capt. Bance with very exorbitant charges in the transport of them. Now, Sir, I have it in my power, from long experience, to declare that Capt. Bance's charges have invariably been

characterized by extreme and *unprecedented* moderation. Permit me to give one instance, and, if necessary, I could produce many similar ones.

In the year 1836, while drifting out of Table Bay in the Wellington, in the heaviest south-easter I ever witnessed, I was supplied by Capt. Bance's launch with an anchor and cable (having none on board) in an incredibly short space of time after the signal was made, the whole cost of which for "materials and transport" did not amount to *two-thirds* we had paid some years previously for a similar anchor and cable in the Downs, though in the latter case the weather was fine, and we were lying quietly at anchor. Capt. Bance's charge for the transport of the anchor and cable was 25*l.*, and in the Downs the Lord Warden's court *awarded* 75*l.*!

The following passage "proper circumspection consists in the rejection of expensive boards of surveys from rival ships, headed by Mr. Bance, and travelling in coaches and six *en prince*," I shall make no comment on, for the simple reason that it is beyond my comprehension; and, in conclusion, I would, with all deference, recommend to Mr. Barrow, when he next favors us with a communication to suit his style to the capacity of such humble individuals as myself, and to deal more sparingly in those hints and inundoes, which, I am quite sure, would "puzzle a Philidelphia lawyer to understand."

I am, &c.

JAMES LIDDELL.

NOTICES TO MARINERS.

FLORIDA LIGHT-VESSEL.—A doubt has long prevailed respecting the real position of this light-vessel, which, on the authority of Lieut. T. Smith, commanding her Majesty's ship Lark, under the orders of Com. E. Barnett, of her Majesty's ship Thunder, we are now enabled fully to clear up. It appears, that this vessel carrying two masts is moored inside or near the western edge of the Carysfort reef, which shews dry patches of sand and coral heads in many parts above water. The vessel by Lieut. Smith's observations is in latitude 25° 12′ north, and longitude 80° 16′ 30″ west, the variation of the compass being 4° easterly. The northern edge of the Carysfort reef is six miles to the northward of her, and she lies about three miles and a half from the shore.

LIGHT ON GALVESTON ISLAND.—Collector's Office, port of Galveston, May 17th, 1841.—Two lights have been placed on the east end of Galveston Island, elevated forty-five feet above the level of the sea, distance 600 yards apart, bearing east and west of each other. A buoy has also been placed on the bar about four miles distance from the lights, and in range with them. Vessels should not attempt to come in at night without a pilot, nor approach nearer than five fathoms, when they should bring the lights to range, and come to. Latitude of the bar 29° 15′ north, and longitude 94° 49′ west.

A. A. M. JACKSON, *Collector*.

We give the foregoing as it appears in the *Shipping Gazette*, but we recommend the collector at Galveston to get a nautical friend to assist him, in putting his information into Nautical phraseology, when he has any to communicate. A buoy in range of two lights may possibly mean within sight of them, range generally signifying distance; whereas, we suppose, he means that from the

buoy the two lights are on with each other. By the way our plan of Galveston is in a most unfinished condition. Will the collector, or any of our readers, obligingly furnish us with a scale for it?

East Tongue Buoy.—*Queens Channel.*—It appears, by a notice recently issued from the Trinity House, that the buoy at the eastern end of the Tongue Sand is now a beacon buoy, carrying three distinct beacons to distinguish it from all other buoys in that vicinity.

Christiania.—Near the light of Fuglehuk, at the entrance of Christiania Fjords, from the 1st of June, a bell will be suspended, with which in foggy weather, when the light cannot be seen at the distance of a quarter to half a league, ten or twelve strokes will be given; at night every quarter, and during the day every half hour.

Grahams Shoal.—This dangerous shoal lies in latitude 37° 9′ 5″ north, and longitude 12° 43′ 15″ east of Greenwich, which was obtained by a series of angles from known fixed stations on the coast of Sicily and Pantelleria, the atmosphere not being favourable for astronomical observations, although those obtained differed very triflingly from above.

The summit or shoal part of the rock is of an oblong form, it lies north-west and south-east, it is forty fathoms in length, consisting of hard dark coloured pointed rocks with sea weed, the edge (which was clearly perceptible,) is jagged, pointed, and steep. The least depth of water found on it was ten feet, but no doubt much less may be found with a calm sea.

The average depth at the distance of eighty fathoms from its centre twenty-five fathoms cinders, and one quarter of a mile, sixty-five fathoms fine black sand. Fine scollops and other shell-fish with young coral was dredged up.

This shoal is extremely dangerous, from the great depth of water around it, and from the various and strong currents that prevail in its neighbourhood, as well as the difficulty of seeing it, for it is visible only at a very short distance.

South-west Peak Pantelleria, south 54° west; Peak Campo Bello, north 5° 50′ west; town of Sciacca, north 40° east; Cape Rosello, north 78° 50′ east, from bearings found independent of the compass, variation 17° 0′ west.

The current set over the lock to east and north, one mile and three-quarters per hour. (Signed) T. Elson.

Copenhagen.—*Buoyage of the Sound and Grounds.*

The following translation of a Royal Ordinance, 23rd July last, states that the alterations and changes of the marks in the Grounds, and in the Outer Roads of Copenhagen, specified therein, will be made at the time of placing these marks in the year 1841.

1. The Dragobuoy will keep its former place, but the mark formerly near this buoy will be removed, and in future be moored on the western edge of the Holmetongue in three fathoms water; and the mark near Southern Russe will also be moored in three fathoms water due east, (true bearing) from this shoal; both these marks are intended to remain out all the year round.

2. Large beacons formed of brooms on poles from nine to ten feet long will be placed on the south-east end of the Northern Russe Ground

in three fathoms water. On the north-west edge of the Little Ground in four or five fathoms water. On the north-west edge of the Bredegrund (Broad Ground) in four to five fathoms water. On the east side of the Ravneunger in three to four fathoms water near the stone called Rasmus Moller. The mark on the wreck upon the Middle Ground will exchange place with the buoy now moored on the Old Provesteen, and this buoy will in future be moored near the wreck upon the Middle Ground, and will be provided with a broom on a pole.

3. The marks on the Old Provesteen, the Northern Russe, the Ravneunger, the Southern Russe, and the Drago Sandrevs Tongue will be provided with brooms tied upwards upon black poles. On the contrary the marks on the wreck of the frigate Kronborg, the Middle Ground, the Holme Tongue, and the Little Ground will be provided with brooms tied downwards on white poles.

The mark upon the Broad Ground will be provided with two brooms, the uppermost tied upwards, and the lower downwards upon a pole painted alternately white and black, in order to distinguish this mark from the one on the Little Ground.

4. The northern buoy of the Middle Ground will be removed from the wreck of the line-of-battle ship, the Indfodsretten, back to the northern flat of this ground in twenty-three feet water, and a new mark consisting of a small barrel or buoy painted green will be placed upon the wreck of the Indfodsretten.

The buoy on the Stubb, will be painted red instead of white as heretofore.

The different buoys will have numbers painted upon them as follows:—The Drago Buoy I., Kastrup Buoy II., South Buoy III,, Middle Buoy IV., North Buoy V., Stubbe Buoy 6, and the buoy on the Krone (Crown) 7.

The mark on the Nordhoi (Northill) will be provided with a wooden square one fathom in diameter, painted white, which will be fixed immediately below the Top Beacon, and facing the Hollanderdyb (Dutchman's Deep.)

5. All these marks will be moored or removed generally at the same time with the Light Ship in the grounds, but will not be placed earlier than this can be done with safety, and without fear of being lost or displaced by the ice.

The marks upon the Sandrevstonge, Southern Russe, and the Holme Tongue will remain out the whole year. When the Drago Sandrevs Buoy is removed, in the fall of a mark similar to the others on the west ledge will be moored in its place.

(Signed) WULFF,
Commodore and Upper-pilot
For the district of Sealand.

Copenhagen, 3d November, 1840.

BAY IN ISLE ROTTEE,—*Timor.*

ACCOMPANYING our present number is a plan of a bay on the south-east side of isle Rottee, (west of Timor) which is said to be much frequented by whalers for refreshment. Notwithstanding we have been unable to

meet with any printed account of it report assigns to it; the character of a secure anchorage, and it is said also that a Dutch missionary resides there. It is about 250 miles from Cape Bougainville, the nearest part of the Australian coast. Whalers it is said are resorting to the neighbouring seas in great numbers and the stock will no doubt be thinned by them.

SUNKEN ROCK IN BASS STRAITS.—There are many unexplored parts in Bass Straits, and the approaches to Kings island are among them. The following danger has not yet appeared in the charts, and mariners must carefully attend to the account given of it by the Port Philip harbour-master:—

"Capt. Lewis, the harbour-master, on his late expedition to Kings island, in Bass Straits, in aid of the shipwrecked passengers and crew of the Isabella, discovered a very dangerous rock, nearly level with the sea at low water, and the tide breaking over it at times at high water. The rock is situated in lat. 40° 9′ S., seven or eight miles off the western side of Kings island. In shore, three cables' length, Capt. Lewis found thirteen fathoms' water; next cast no soundings.—*Port Phillip Patriot.*

QUARANTINE AT ELSINORE.—The following has been received at Lloyd's:—"*London*, May 4, 1841.—Sir.—I beg to acquaint you, for the information of the committee for managing the affairs at Lloyd's that the Danish Chancery at Copenhagen has issued the following notice respecting the quarantine of vessels arriving at Elsinore and bound for the ports of the Baltic, in so far as the yellow fever is concerned. 1. Only vessels arriving from places infected with, or suspected of yellow fever, whether laden with enumerated articles or not, and on board of which suspicious cases of disease or death have occurred, either on the passage or on arrival, will hereafter be ordered to the quarantine stations, there to discharge, and their cargoes to undergo the process of expurgation. 2. Vessels arriving with enumerated articles from places out of Europe, where the yellow fever has appeared, are subject to an observatory quarantine of fourteen days, provided no suspicious case of disease has manifested itself on board. 3. Vessels with non-enumerated goods, whether such articles be embaled in packages susceptible of infection or not, but otherwise arriving under circumstances similar to those mentioned in 2, are subject to four days' observatory quarantine. 4. Vessels arriving from unsuspected places in Europe, with enumerated articles on board, shipped at such places, are exempt from quarantine, although such articles be the produce of places where the yellow fever actually prevails."

"FRANCIS C. M. MACGREGOR."

[Some remarks will be found on this subject in p. 219.—ED.]

THE BONETTA ROCK AGAIN.

Extract from a letter from the American Consul at the Cape de Verds, dated Port Praia, St. Jago, 4th May, 1841.—"On Sunday evening,

April 8, 1841, the British ship Charlotte, of Alloa, Scotland, Captain Forrester, struck on a rock in latitude 60° 17′ N., longitude 22° 21′ W., beat over in about ten minutes, filled and sunk. At 3 A.M. on Monday, the officers, passengers, and crew took to their boats, and arrived here on Tuesday noon. The rock is about 300 feet in length, under water, in the shape of a crescent, open to the northward, and the sea breaks only at particular times of the tide. There were two chronometers on board, and were both correct seven days previously, at Madeira. The British ship Madeline, Capt. Hamilton, was lost on the same rock in April, 1835. Both vessels were bound to Sydney. The rock bears from the outer end of Hartwells Reef, off the island of Bonavista, N.E. by E., distant twenty-three miles per compass by Vidal and Mudge's chart, Leven's Survey. It is in the direct route of all vessels bound to New Holland or India. I would advise all vessels to sight the Isle of Sal, run down close to it either on the east or west side, and pass to the westward of Bonavista and Leton's rock, by doing which they clear this rock—which I shall call Madeline and Charlotte Rock—and the reefs on the eastern side of Isle Bonavista;—I allude to vessels bound to Port Praia. I saw Lieut. Wilkes' track, who looked after this rock with the exploring squadron, on their passage out, but were too far to the southward, or it might have broken."—*Shipping Gazette.*

We thought sufficient had been done and said to show the non-existence of the Bonetta rock. First however we would direct the attention of the owners of the British ship Charlotte, to the distinct contradiction in the above letter. The American Consul says; "On *Sunday evening* * * the British ship Charlotte struck on a rock * * * beat over in about ten minutes, filled, and sunk;" and he then says that, " at 3 A.M. on Monday, the officers, passengers, and crew took to their boats, and arrived here Tuesday afternoon," meaning Port Praia. Will he inform us what they did with themselves between Sunday evening when the ship had sunk (after 10 minutes warning) and 3 A M. on Monday? Really this is one way of accounting for the loss of a British Ship and the safety of her crew; but there is something in addition about the " reefs on the eastern side of Bonavista," and the Consul recommends vessels " to sight the isle of Sal, and run down close to it either on the east or west side;" which confirms our opinion that this vessel really was lost on Bonavista. The sea coast of Sal they will find low flat sandy beaches, extending considerably from the high land inside, and on which beaches, vessels will find themselves high and dry, when from the distant appearance of the land in the interior of the island, they will imagine themselves far enough from it. These flat sandy beaches are as dangerous as the rocky north-east coast of Bonavista.

We would next recommend the owners of the Charlotte to turn to the volume of the *Nautical Magazine* for 1839, where at p. 809 they will find a chart, shewing the tracks of Capt. Vidal in the Etna, in search of the Madeline or Bonetta rock. They may then lay down the *supposed* position of the rock on which the Charlotte was lost in latitude 16° 17′ (not 60° 17′ as stated above), and they will find that position not very remote from no bottom with 100 fathoms, on the chart.

We say the supposed position, because enough has been said in the paper accompanying the above chart to shew that no rock exists in any of the positions assigned to it. We also recommend the owners of the Charlotte to send for the captain's log, and ascertain how her position at noon agreed with the reckoning on the day she struck. But we forgot, perhaps the log may not be forthcoming, and it will save all further trouble about the matter, as no doubt the Charlotte was insured, to settle the business with the underwriters! And so it is, insurance makes rocks in places where none can be found afterwards. It is somewhat remarkable that in our last number we have shewn the extraordinary effects of a current, near the equator, on H.M.S. Pearl, by which she was set at least seventy miles in the twenty-four hours. Such current must have its commencement, and where? but about the Canary and Cape Verd Islands, and in the months of *May*, *June*, and *July* it is stated by the master of the Pearl to be found setting *strongest*.

It is this same current to which the loss of the Charlotte, and all the ships that have preceded her may be attributed, and as "Sunday evening" allows of its being dark when she struck, we can only believe that the Charlotte was set upon the north-east rocks of Bonavista by the prevalence of a current;—that a sufficient *look-out* was not kept to guard her from her danger, and we are strengthened in this opinion by the allusion to these rocks in the American Consul's letter, followed by his advice to pass to the westward of the island.

Since the above was written we have met with the following in the *Shipping Gazette* which is another version of the affair, and which confirms our opinion respecting the *latitude* of this supposed rock, and indeed on the whole subject. It was but a few months ago that the Lucy was lost on the isle of Sal by one of the Wallace breed, and we printed the advertisement of the reward which was offered for him, in our April number p. 281. Verily, if these losses continue to take place among the Cape Verds we shall set them down as suspicious, for it is high time that the current which runs among them, and which is not of yesterday, nor of the last hundred years, should be at least known.

Lisbon, *June* 21.—The Portuguese brig Joven Africana, arrived here to-day from St. Jago (Cape de Verd), having on board, as passengers, Mr. Forrester, master of the British barque Charlotte, of Alloa, and several of her crew.

The Charlotte sailed from London for New South Wales, with a general cargo. On the 18th of April last, lat. 16° 17′ N., long. 22° 21′ W., about twenty-three miles from Bonavista, she struck on a sunken rock not marked in any chart, and the more dangerous as it is covered with twelve feet of water, so that the sea seldom can break over it. In four hours after, notwithstanding all that could be done to keep her afloat long enough to reach the nearest island, she went down. Fortunately, the weather being fine, all on board escaped in the boats and got to St. Jago, whence some of the crew proceeded in a Portuguese vessel to Senegal.

The Pelorus, 18, stranded in a gale of wind, at Port Essington, has been got off and rendered fit for service. Lieut. W. W. Chambers, has been appointed acting Commander of her.

Night and Fog Signals for Steam Vessels.—*Suggested by Lieut. J. H. Bellairs, R.N.*

All proposals for supplying distinguishing signals for steam vessels in the absence of any generally established law regarding them are entitled to mature consideration, and accordingly we insert the following of Lieut. Bellairs, which appeared some time ago in the *United Service Journal*. It is much to be regretted that vessels are still left to follow the law of custom only, or that of their own choice, and the case of the Phœnix and Britannia the other day, is an instance of the ill effect of this deficiency. The Phœnix had one kind of light, and the Britannia another; but that of the latter at her masthead, we are informed, was taken for a fisherman's light.

Mr. Editor.—The accompanying attempt at what I trust may be adopted, and prove of effect in obviating the danger of collision, I humbly submit to you. It is by many Naval friends that I am advised and urged to address you. This plan has by many nautical men been highly spoken of, and I received a complimentary letter last February from Monsieur de Rosamel, "Ministre de la Marine et des Colonies," from Paris. The frequent and serious accidents by collision occupied my attention, and I drew up the plan, which, from its simplicity of combinations, makes it more acceptable than any which possess great scientific merits.

Allow me to remain, Sir,
Your very obedient and faithful servant,
J. H. Bellairs,
Lieut. R.N. (1813.)

Coast Guard Station, Craster, Northumberland,
21st November, 1837.

It is immaterial by what means the lights are produced, so long as there is a sufficiency, my attention being directed only to the brilliancy of light to be obtained, and to see it universally employed.

This experiment (one hitherto not even attempted) is of the greatest importance to life and property afloat, as the moment the lights of the steamer are seen, the course she is steering is at once ascertained; this, to all nautical men, is obvious, and they are the most capable of appreciating its true value.

Arrangement of the Lights.

1. A circular white light at the foremast-head, to be seen from every part of the horizon.

2. Before each paddle-box a light to be fitted, which shall be seen a-head, on the bow or on the beam, forming, with the masthead light, a combination of three lights, when the steamer is taken end-on or right a-head, and of only two lights, when seen in a bow view or on the beam.

3. A light on each quarter, or after-part of the paddle-boxes, which shall be seen right astern and on each quarter; forming, with the masthead light, a combination of three lights, when the steamer is taken

end-on or right astern, and of only two lights, when taken in a quarter view.

4. The starboard lights to be invariably of a bright red—thus the course the steamer is running will be clearly shown.

Fog Signals to be made by Steam Vessels.

1. A plate of shrill-sounding bell-metal to be fitted on the fore part of the starboad paddle-box.

2. A gong on the larboard; to be struck by fly-hammers, which may be put in motion by the steam-engine.

3. In going down a river, the starboard bells to be kept ringing.

4. In going up a river, the larboard gong to be kept going.

5. Steam vessels compelled by fog to anchor, to keep both bells and gongs going.

6. In coasting, or in the Channel, if the ship's course deviates from the east of north, or south of east, the starboard bells to be kept ringing.

7. If the course is west of north, or south of west, the larboard gong to be kept going.

These will be sufficiently distinct to warn vessels from approaching too near in foggy weather.

I would strongly recommend the above system to the attention of owners and captains of steamers. Common panes of glass will not answer. I have tried thick hollow convex lenses, filled with coloured liquid. The forelights are each composed of two glasses, one to throw the light a-head, and the other a-beam; the two after lights have each one glass only. The form of the masthead light depends on the rig of the fore-mast; but the most simple is, to have two lights; each lamp to be semicircular, to be triced up on a double jack-stay; when up, the effect would be as if one lamp only were employed.

All steamers ought to be steered amid-ships. The plank, at present styled the bridge, is where the captain should be: it is in a steamer as much his station as on the quarter-deck of a man-of-war. A platform or gangway should be strongly constructed; it would tend to strengthen the paddle-boxes. The tiller-chains to lead forward through copper rollers and brought to the wheel. A tiller to be always ready abaft. The comfort of the passengers would, by the absence of the wheel from the quarter deck, be promoted, the helmsman's attention uninterrupted, and the captain so close as to render his orders of immediate avail.

[We understand that Admiral Rosamel has referred this proposal to a committee, the report of which we have not yet seen. But, we believe, the French are equally anxious as ourselves for a system of general adoption.]

Trial of the Styx.

The Styx, a steam-frigate of the second class, another of the vessels fitted with Messrs. Seawards' Gorgon engines, proceeded down the river

a short time since for the purpose of trial, and to test the disconnecting and reconnecting process, the invention of those gentlemen so celebrated for their improvements on the marine steam engine. A large company of upwards of 150 persons, including many distinguished naval officers, and some of the most scientific men of the day, attended the invitation of Messrs. Seaward, to witness this interesting experiment, the success of which is of such vast importance to steamers making long voyages, but particularly to armed vessels destined for cruizing or attending fleets, and taking every advantage of their sails to save fuel.

The motion of the vessel appeared to offer not the least impediment to the process, which was performed off Gravesend, to the satisfaction of the company, the engine being detached from the starboard paddle-wheel in the short space of two minutes and a half, and connected again in the same time, after the interim of a quarter of an hour, during which the power of the two engines was applied to the larboard wheel.

Amongst the naval officers present, we noticed Admiral Sir Philip Durham, Sir William Symonds, surveyor of the navy, Captains Phipps Hornby, Lord Prudhoe, Jones, Smith, Evans, &c. At three o'clock the guests were invited by Messrs. Seaward to partake of an elegant *déjeuner;* after which several loyal and patriotic toasts were received with enthusiasm, the prelude and responses to which gave opportunity to the speakers to do justice to the Board of Admiralty, for the high state of efficiency which the navy has at present attained, and also to Sir William Symonds for the great improvements he has effected in naval construction, not only as regards steam-vessels, but every class, from the first-rate to the packet-boat. Sir Philip Durham declared, in the course of his speech, that in the long experience of sixty-five years, he did not recollect a time when the fleet could be considered in such an efficient condition as at the present moment, and confessed his astonishment at what had been accomplished with respect to the increase of our force within these two years.

We were gratified to perceive the estimation in which the many important improvements connected with steam navigation accomplished by Messrs. Seaward were held, by members of the naval profession, as well as the gentlemen present interested in shipping. As these improvements are much greater than is generally supposed, and independent of the disconnecting process, (itself a matter of no small consequence under certain circumstances,) we are but doing justice to the talent and indefatigable industry of Messrs. Seaward, in attempting a hasty description, the data of which our readers may receive as correct, and draw their deductions accordingly.

The following is a comparative scale of the capability of engines by different makers; and while they show the great superiority of Messrs. Seaward's productions, it is but justice to the other eminent engineers to state, that they are also engaged in effecting improvements on this very important point.

The three essentials in a steam-vessel of war are, 1st, capacity; 2d, power of locomotion for the greatest distance; 3d, security of the boilers and vital part of the machinery from destruction by an enemy's missiles.

	Cyclops.	*Stromboli.*	*Styx.*	*Medea.*
Length	190 ft.	180 ft.	180 ft.	179 ft.
Tons	1195	966	1057	835
Armament	2 10-in., 4 68-in.	2 10-in., 4 32-prs.	2 10-in., 4 32-prs.	2 10-in., 4 32-prs.
Men	160	128	128	128
Power of engines	320	280	280	220
Maker	Seaward	Napier	Seaward	Maudsley
Length of engine-room	65 ft.	58 ft.	50 ft.	62 ft.
Coals carried	450 tons	210 tons	300 tons	190 tons
Expended per day	25 tons	24 tons	19 tons	21 tons
Equal to number of days consumption at full steaming	18	8¾	15	8
Total distance at eight miles per hour	3500 miles	1680 miles	2880 miles	1536 miles

These items have never before been calculated and published, and they prove the great superiority of Messrs. Seaward's engines, principally owing to their compactness in occupying less space, as appears by the length of engine-room, the importance of which the reader will appreciate, when he is informed that every foot in length so gained affords stowage for fourteen tons of coals in vessels of the above class. The other advantages are, that the boilers and cylinders are *below* water, protected on each side by the coal, impenetrable to shot; and that the portion of the machinery above is of wrought iron, and therefore not so liable to damage either from shot, or from concussion, striking the ground or a vessel, as would be the case with cast metal.

We give these hasty data, the importance of which our naval readers will readily appreciate; and we cannot conclude without congratulating the service in possessing the devoted ability of such talented engineers as Messrs. Seaward, who we are glad to perceive are engaged in completing two other vessels of the same class as the Styx. We may sum up their improvements as follows:—engines of 25 per cent. less weight, but of equal rated power to any other; engine-room 20 per cent. less length, affording this additional room for fuel; and last, but not least, 20 per cent. less cost; while the vessels can steam nearly double the distance of those fitted with other engines.—*Naval and Military Gazette.*

LAW DECISIONS.

The Ardwell.—A suit for salvage, instituted by Lieutenant Percival, the commander, officers, and crew, consisting of 33 men of her Majesty's revenue-cutter Badger, against the Ardwell, found derelict in the north seas on the 26th of February last. The vessel had been sold, and the net proceeds amounted to 2971*l.* 4*s.* 3*d.* Dr. Lushington, would not give a moiety. The services were not long, nor the labour very severe, 125*l.* given as a fair distribution.

The Panda.*—A motion to decree to Captain Trotter, and the officers and crew of H. M. S. Curlew, certain bounties alleged to have accrued to them for the seizure of a number of pirates in the year 1833. The case to stand over, in order that the crown officers might have an opportunity of inspecting the papers.

* See Nautical Magazine for 1837, p. 1.

The Eliza Francis.—In this case a bottomry bond had been given to Messrs. Montefiore and Co., of Port Jackson, for the sum of 1,055*l.* 7*s.* 2*d.* A *primum decretum* was prayed for, which the court granted.

The Harmony.—A commission of sale having been taken out against this vessel, a sail-maker, who had possession of the sails, and on which he had a lien of 181*l.* 17*s.* 8½*d.*, returned them to the vessel under a monition from the court, and now moved that the amount should be paid out of the proceeds of the ship. The court decreed payment, and also the costs.

The Choice.—This was an action entered by Messrs. Bell and Co., the prior mortgagers of a quarter of this vessel, against Messrs Smith and Co., the subsequent mortgagers of the other three-fourths, to recover the amount of their claim. The court dismissed the suit, and condemned Messrs. Bell and Co., in the costs. *For judgment see Shipping Gazette, 7th July.*

The Scotland.—A suit for salvage by the steam-vessels President, Albert, and Hero, for services rendered on the 16th or 17th of November last, to the Scotland, when on the Jordan Flats, near Liverpool. A tender had been made of 250*l.* and rejected. The court awarded 400*l.* *See Shipping Gazette, 7th July.*

Westminster.—This was a case of alleged salvage services rendered to this vessel, off Margate, from the 23d of November to the 1st of December last. The court awarded 1,500*l.*

Marie.—This was a case of salvage effected on the 6th of February last by three smacks—the Tiger, Rosabella, and Abeona; and the yawl Whim, off Harwich. A tender had been made of 50*l.* The court considered that sum insufficient, and awarded 80*l.* with costs.

The Castor.—*Salvage*—A claim for remuneration for salvage services rendered by two fishing luggers, the Agenora and the Black Joke, to the brig Castor, which, on a voyage from Cuba to Swansea, with copper, having met with boisterous weather at the commencement, in January, reached the English coast in March, and was assisted by the two luggers (her own crew being in a state of exhaustion) into Plymouth. The value of the property was 5,300*l.* Dr. Lushington, was of opinion, that although the service which lasted 11 hours, was not attended with any danger, and did not require severe labour or extraordinary skill, the vessel stood in need of the assistance afforded her. If the salvors asked 1,000*l.*, it was an exorbitant demand, and he thought if he gave 200*l.* it was as much as they were entitled to.

The Helen Maria.—*Salvage*—An appeal from the award of the magistrates of Yarmouth, who had alloted a reward of 80*l.* to a steam-tug for towing the vessel (which had, through carelessness, run foul of the Newark light vessel, and thereby lost her mainmast) into Yarmouth-harbour. The salvors contended that, considering the value of the property (3,050*l.*), and that the magistrates had awarded the same sum to some boatmen from Winterton, who could render no effectual service, the sum of 80*l.* was inadequate.

Dr. Lushington was of opinion, that the magistrates had come to a just conclusion, and that there was no reason for the appeal. He affirmed the award with costs.

The Mary Ann.—*salvage.*— A claim on behalf of the Elizabeth, a small vessel of 28 tons, for remuneration for assistance rendered to the smack Mary Ann, from Shoreham, with a cargo of flints, which, in severe weather, she attempted to bring into Teignmouth, but the smack ran upon the Sprat-sand at the entrance, and sustained damages that reduced the value of the property to 121*l.* A tender of 5*l.* had been made, but the owners contended

that the salvors had no claim at all, though they had attempted to extort 100*l.* Dr. Lushington allotted 20*l.*, with costs.

ARMADILLO.—In this case, Dr. Lushington pronounced against the bottomry bond, and condemned the party proceeding in costs.

CATO.—A suit for salvage services rendered to this vessel by the Tiger and a number of pilots, on the 17th of January last, near the port of Sunderland. The court awarded 240*l.*, one moiety to each set of salvors, the parties to pay their own costs.

THE FLORIDA.—*Prize.*—A Portuguese schooner was captured on the 13th of May, 1837, by her Majesty's brig Harpy, having on board 283 slaves. She was despatched to the island of Grenada, and, being found unseaworthy, was there sold under the superintendence of Peter Guthrie, the agent appointed to act on behalf of the salvors. The proceeds amounted to 318*l.* 8*s.* 1*d.* The Florida had since been condemned by the Mixed Commission court; but Mr. Guthrie, notwithstanding repeated applications to remit the proceeds to this court, still retained possession thereof. The Queen's advocate prayed for a monition calling on Mr. Guthrie to transmit the amount to the Registry of the High Court of Admiralty. The court ordered the monition to issue, directing the sum to be paid to the Mixed Commission Court by whom the condemnation had taken place.

THE GAMMA.—*Salvage.*—A suit for salvage services rendered to this vessel on the 18th of January last, by six pilots, off the port of Sunderland. A tender had been made of 60*l.*, which the court increased to 120*l.*—*See Shipping Gazette, 10th July.*

THE HOPE.—*Salvage.*—In this case 250*l.* had been awarded by the magistrates of Hull for salvage services rendered by the Speedwell, and paid to the owner of that vessel. An action was now brought, on the 3d and 4th Victoria, to compel its distribution by this court. The owner appeared under protest, and contended against the jurisdiction. The court upheld the protest.—*See Shipping Gazette, 10th July.*

THE TYNE.—*Salvage.*—This was a suit instituted by three steam-tugs, the Majestic, the Mary Ann, and the Ovington, for salvage services rendered to the Tyne, when grounded on a sand beach in Tynemouth harbour, on the 14th of February. A tender had been made of 150 guineas, which the court overruled, and gave 250, with costs. *See Shipping Gazette, 10th July.*

THE HEART OF OAK.—*Bottomry.*—In this case, the brig Heart of Oak, in October, 1839, sailed from this country to Shippigan, in New Brunswick, where she arrived on the 14th of November. The master being without a letter of credit, in endeavouring to get a cargo of timber in time for the season, borrowed on personal security two sums amounting to 255*l.*, for which he gave two sets of bills of exchange. The vessel being unable to get out before the ice set in, on the 22d of April, 1840, advices where received at Shippigan that the first set of bills was dishonoured, the property of the vessel having been, in the mean time, transferred to a new owner. The master was hereupon arrested, and whilst under restraint, though not in actual confinement, being unable to obtain his personal liberty, and the liberation of the vessel on any other terms, consented to give the party who had arrested him, a bottomry bond for the 255*l.* which had been secured by the bills, and also for a further sum of 413*l.* on account of the ship, the bond bearing a premium of 20 per cent. The validity of this bond was now in question.

Dr. Lushington pronounced for so much of the bond as covered money advanced subsequently to the 22nd of April; but he wished to mark his disapprobation of the conduct of the parties at New Brunswick, in taking a bond from the master under such circumstances, which justified the owners at home in investigating the matter, and he should, therefore, in pronouncing for the bond to the extent he had mentioned, give no costs.

NEW CHARTS.

(Published by the Admiralty.)

THE GALAPAGOS ISLANDS; *surveyed by Capt. R. Fitz Roy, R.N., and the officers of the Beagle.*

PLANS IN WOLLASTON ISLAND, SOUTH AMERICA; *Gretton Bay and North Road, Scourfield and Hately Bay, Middle Cove.*

The foregoing complete the long list of charts and plans resulting from the surveying voyage of H.M.S. Beagle, under Capt. R. Fitz Roy, and the *Quarterly Review*, in allusion to that voyage speaks thus:—

"Self-immolation is a term which we have more than once heard applied to the course pursued by those officers of the British navy who have given themselves up to Nautical Surveying and discovery. If it is meant to convey the idea, that they thereby take a line, which under existing circumstances, leads them from the more substantial rewards of their noble profession, there is far too much of truth in the expression; but if it be intended as an insinuation that such men are not employing themselves in the very best course of even mere professional training, we strenuously deny its applicability. If the perfect discipline and health of the crew, and their entire reliance on him who commands them; if the constant habit of manœuvering the ship in all weathers, and in all situations; if a watchful preparation against surprise, whether from the elements or the wild races of men to whose shores she comes like some being of another world; if a steadiness of purpose and unconquerable spirit under circumstances however adverse; if these be principles and qualities to insure victory in war, we know not where the country can look for them with more certainty than among this devoted class of seamen. Of the vast, the innumerable value of the services which able officers thus employed are in the meantime rendering to science, to commerce, to their country, and to the whole civilized world, we must say nothing—nothing we could say would be too much." Such were the men by whom the Beagle's work was done.

The chart of the Galapagos is on the scale of eight miles to the inch and includes the whole of the islands, and with it we take our leave of the Beagle's Surveys.

OTAHEITE AND EMEO; *by Captain Cook, R.N.*

A chart containing also plans of Papiete, Toa-noa, Papawa harbours, and Matavia Bay, by Capt. F. W. Beechey, RN., FRS. A most useful addition to Capt. Cook's work are these plans of Capt. Beechey.

JUAN FERNANDEZ; *by Don Fernando Amador de Amaya*, 1795.

MARAK HARBOUR, SUNDA STRAIT; *by C. Bailey, commanding H.M. ship Barraconte*, 1812.

AURICH, June 14.—*Information to Captains.*—Pursuant to a proclamation of the principal authorities, dated the 12th instant, there will be placed on the North Sea Island Juist, Norderner, Baltrum, Langeoog, and Spiekeroog, on the coast of East Friesland, several temporary black trigonometric signals of 12 feet high:—1—On the large white downs at the western extremity of Spiekroog. 2—On the large black downs at the western extremity, north of the houses on Langeoog. 3—On the large churchyard downs of Baltrum. 4—On the large downs of Norderner, and 5—On the large white downs of the eastern extremity of Juist, serving as signals for the resurveying of the coast.

The Swedish administration of marine affairs has made known, that in the Bothnic Gulf a mark will be placed on the Rock of Skepparkollen, westerly of Holmo, and northerly of Quarken at 60° 47′ 7″ N. lat., and 38° 53′ 28″ E. long. of Ferro; consisting of a high spire of 30 feet, with supporters round the same; the whole having the appearance of a heap of wood put in an erect position, and to be seen at a distance of about one and a half German mile.

PROMOTIONS AND APPOINTMENTS.

(From the Naval and Military Gazette.)

Downing-street, June 29th, 1841.

The Queen has been pleased to appoint Vice-Admiral John Chambers White, Rear-Admirals Charles Richardson, CB., and Sir Arthur Farquhar, Knt., CB., and Commodore Sir James John Gordon Bremer, Knt., CB., to be Knights Commanders of the most Honourable Military Order of the Bath.

Her Majesty has further been pleased to appoint Captain Sir H. F. Senhouse, Knt., RN.; Captain T. Herbert, RN.; Captain the Hon. R. S. Dundas, RN.; Captain T. Bourchier, RN.; Captain J. Scott, RN.; Captain C. R. Drinkwater Bethune, RN.; Captain J. Nias, RN.; and Captain T. Maitland, RN.; to be Companions of the most Honourable Military Order of the Bath.

PROMOTIONS.

LIEUTENANT—A. P. Ryder.

APPOINTMENTS.

CAPTAIN—D. Pring (1815) to *Powerful*.

COMMANDERS—F. H. H. Glasse (1838) to *Nimrod*.—P. Gostling (1828) to *Electra*.—E. Barnett (1838) re-appointed to command *Thunder* surveying-vessel.

LIEUTENANTS—J. H. Bowker (1815) re-appointed to command *Savage*.—C. Autridge (1815) to *Royal George* yacht, for service of *Pigmy* steam-packet.—H. G. Morris (1837) to *Champion*.—H. Crocker (1812) to command *Ranger* packet.—J. Douglas (1826) to command *Swift* packet.—T. Creser (1826) to command *Star* packet.—J. R. Rodd (1840) to *Scout*.—P. Somerville (1841,) J. Daly (1841,) G. B. Jeffreys (1841,) R. Edwards (1841,) A. Vyner (1841,) and G. C. Fowler (1841) additional to *Wellesley*.—E. Heathcote (1840) to *Electra*.

MASTERS—J. Killock to *Electra*.—R. Mowl (1841) to *Scout*.—W. Jeffrey (1841) to command *Tortoise*.

MATES—W. Ponsonby to *Blenheim*.—J. Wilson (1837) to *Excellent*.—W. R. Surridge (1838) to *Magnificent*.—W. D. Carroll (1838) to *Royal George* yacht, v. E. Voules, to *Fair Rosamond*.—R. Hopkins (1835) to *Savage*.

SECOND-MASTERS—H. Hill (additional) to *Victory*.—W. H. Williams to *Savage*.—B. Simpson to *Skylark*.—T. Bowen to *Tortoise*.

SURGEONS—H. W. Mahon, MD., (1835) to be superintendent of *Mexborough* convict-ship.—R. R. B. Hopley (1841) to *Electra*.—D. King, MD., (1829) to *Cornwallis* from *Monarch*.—J. Gannon (1827) to *Monarch*.—A. B. Cutfield (1840) to *Champion*.—W. T. Rogers (acting) to *Fantome* from *Southampton*.—M. Corry (1841) to *Scout*.

MASTER'S-ASSISTANT—G. T. Wise to *Indus*.

MIDSHIPMAN—E. W. Gough to *Dublin*.

VOL. 1ST CLASS—W. J. B. Elphinstone to *Queen*.

ASSISTANT-SURGEONS—J. King (1840) to *Revenge*—J. Philips to *Savage*.—J. Ternon to *Scout*.—A. Anderson (1830) to *Winchester*.—J. W. Graham, A. W. Babington, and J. Rae, to *Queen*.—H. Johnson to *Champion*.—H. S. Wilmot, J. Simpson, J. F. Henry, MD., — Richardson, MD., (additional) to *Cornwallis*.

PURSERS—R. Mason (1832) to *Champion*, v. Freeman, warrant cancelled.—J. Pinhorn (1831) to be secretary to Rear-Admiral Thomas.—J. Milner to *Electra*.

CLERKS—E. J. Forest to *Jaseur* from *San Josef*.—W. P. O'Brian (in charge) to *Savage*.—J. M. Jefferson to *Queen*.—H. J. Pinhorn (in charge) to *Skylark*.—H. A. F. Lusignam to *Electra*.—H. C. Pool (additional) to *Dublin*.

CHAPLAINS—N. Proctor (1840) from *Monarch* to *Niagara*.—W. D. Hall to *Monarch*, v. Procter.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ATHOL, 28, (tr. s.) Mas. Com. C. P. Bellamy, 6th July arrived at Portsmouth from Quebec with the 73rd reg.

CASTOR, 36, Capt. E. Collier, July 15, arrived at Portsmouth.

CHAMPION, 16, commissioned at Plymouth 16th June.

CONFIANCE, (st. v.) Lieut. Com. E. Stopford, 20th June, arrived at Plymouth from Malta, proceeded to Woolwich.

CORNWALLIS, 72, Capt. P. Richards, 4th July sailed for China.

EDINBURGH, 72, Capt. W. Henderson, 14th July paid off at Portsmouth. (See p. 573.)

ELECTRA, 18, Capt. E. R P. Mainwaring, 18th June moved into harbour, 22nd paid off and recommissioned by Commander Gostling.

GRIFFON, 3, Lieut. Com. J. G. D'Urban, 27th June arrived at Sheerness from West Indies.

IMPLACABLE, 74, Capt. E. Harvey, 4th July left Plymouth for Mediterranean.

LYNX, 3, Lieut. Com. H. Broadhead, 20th June arrived at Portsmouth from Africa, 21st sailed for Chatham.

PRINCESS CHARLOTTE, 104, Capt. A. Fanshawe, 17th July arrived at St. Helens from Mediterranean, 19th moved into Portsmouth.

SAPPHIRE, (tr. s.) G. H. Cole, 6th July arrived at Portsmouth with the 73rd regt. from Quebec.

SARACEN, 10, Lieut. Com. H. W. Hill, 12th July arrived at Plymouth from Africa.

THUNDER, (sur. v.) Com. E. Barnett, 3rd July arrived at Spithead, and sailed for Chatham. Paid off and recommissioned.

VERNON, 50, Capt. W. Walpole, 9th July left Portsmouth for Mediterranean.

PORTSMOUTH, 15th July.—Bittern is nearly ready to go to Spithead; Electra is in the dock; and the Driver steamer in the basin. Pantaloon will be ready for commission next week. Illustrious being the intended flag-ship of Vice-Admiral Sir Charles Adam, has been taken into a dock to have her copper looked at, and she will then fit in the basin; her masts have been brought down to the shears. Edinburgh was paid off yesterday in very good order; they are a most orderly, well-disciplined crew, and it is a great pity that so many good men should be lost to the service. It is said that Sir Charles Adam will hoist his flag in a day or two. The Sapphire and Athol troop-ships are refitting in the harbour. Cracker cutter is here for the same purpose. Dublin will be ready for sea early next month. Monarch and Indus are the guard-ships at Spithead. Rapid has gone on a cruize. *Ships in Port*—Monarch and Indus at Spithead.—*In Harbour*—Queen, Royal George yacht, Victory, Dublin, Excellent Bittern, Electra, Athol, Sapphire, and Cracker.

PLYMOUTH, July 14th.—The Spartan, 26, building in this dockyard, will be launched the 26th of the ensuing month. The Hastings, 72, Capt. J. Lawrence, C.B., is hourly expected at this port from Gibraltar, and orders have been received to make her defects good with all possible expedition, and when completed she will return to Malta. The Savage, 10, Lieut.-Com. T. H. Bowker, it is said, will proceed to South America, and daily expects her orders.—*In Harbour*—San Josef, Caledonia, Champion, Saracen, and Avon and Carron steamers.—*In the Sound*.—Impregnable, Belleisle, and Savage.

ABROAD.

ARROW, 10, Lieut. Com. W. Robinson, 22nd of April arrived at Rio from Falkland Island.

Port Louis, Falkland Islands.—H.M. surveying vessel Arrow, Lieut. Com. Robinson, was all well the 10th April, Mr. Mearns, master of the Arab, begs to acknowledge the attention shown towards him, on coming into the above anchorage by Lieut. Robinson and his officers, and especially the kindness of Mr. Bodie, master of the Arrow, who piloted the Arab to the anchoring ground.

BEAGLE, (sur. v.) Act.-Com. J. L. Stokes, 24th March at Sydney.

CALCUTTA, 84, Capt. Sir J. Roberts, C.B., 4th July left Malta for Syria.

CAMBRIDGE, 78, Capt. E. Barnard, 4th July left Malta for Syria.

CAMELION, 10, Lieut. Com. G. M. Hunter, 12th April left Cape for Rio.

CHARYBDIS, 3, Lieut. De Courcy, 26, 26th April at Port Royal.

CLIO, 16, Com. J. G. Freemantle, 4th May arrived at Rio from Buenos Ayres.

COCKATRICE, Lieut. J. Oxenham, 21st May arrived at Madeira.

CROCODILE, Capt. Johnson, 14th Ap. left Halifax for Quebec, 26th at Pictou.

CYGNET, 10, Lieut. E. Wilson, 30th June spoken on equator in long. 8° E.

ENDYMION, Capt. Hon. F. W. Grey, 6th May left Simons Bay for Persian Gulf.

ESPOIR, 10, Lieut. Com. J. T. Paulson, 3rd July in the Tagus.

FAWN, Lieut. Com. J. Foote, 5th May arrived at Rio from a cruise. *See p.* 574.

FIREFLY, (st v.) Lieut. Com. W. Winniett, 26th May arrived at Jamaica from Barbados.

GANGES, 84, Capt. B. Reynolds, 4th July left Malta for Mahon.

HASTINGS, 72, Capt. J. Lawrence, 7th June arrived at Gibraltar.

HORNET, 6, Lieut. Com. R. B. Miller, 14th June arrived at Jamaica from Chagres, 15th sailed for Chagres.

LARK, (st. v.) Mr. J. Lawrance, 14th June arrived at Jamaica.

LIZARD, (st. v.) Lieut. W. G. Estcourt, 1st July at Gibraltar.

PELICAN, 16, Com. C. G. E. Napier, 8th June arrived at Lisbon, 27th left Gibraltar for East Indies.

PERSIAN, 18, Com. T. R. Eden, 27th April at Ascension.

PICKLE, 5, Lieut. Montresor, 22nd May arrived at Port Royal, 29th sailed for Santa Martha.

PILOT, 16, Com. G. Ramsay, 18th Mar. arrived at Jamaica from Nassau.

RACER, 16, Com. G. Byng, 24th May St. Johns. *See p.* 575.

RODNEY, 92, Capt. R. Maunsell, 4th July left Malta for Syria.

ROVER, 18, Com. T. W. C. Symonds, 10th June left Jamaica for Havana.

SERINGAPATAM, 42, Capt. J. Leith, 19th May at Barbados.

SKIPJACK, 5, Lieut. Com. H. Wright, 24th May arrived at Jamaica, 30th sailed for Nassau.

SOUTHAMPTON, Capt. Hillyar, 6th of May left Simons Bay for Rio.

THUNDERER, 84, Captain M. F. F. Berkeley, 7th June left Gibraltar for Tangier, 1st July at Gibraltar.

TWEED, 20, Com. H. D. C. Douglas, 27th April arrived at Bermuda.

VANGUARD, 80, Capt. Sir D. Dunn, 4th July left Malta for Syria, after visiting Goza.

VICTOR, Com. W. Dawson, (a), 26th April at Jamaica.

WATERWITCH, 10, Lieut. Com. H. J. Matson, 19th March in Simons Bay.

WIZARD, 10, Lieut. Com. T. F. Birch, 9th April at the Cape.

AT MALTA—*In Port*—The Ceylon, 6, bearing the flag of Rear-admiral Sir J. Louis, Bart.; Britannia, 120, bearing the flag of Sir J. Ommaney, KCB.; Howe, 120. —Cyclops, Acheron, Prometheus, and Alecto. French steam-packets Eurota, Leonidas, and Tancrede. Roman gunboats La Fedelta, San Pietro, and San Paolo.

IN SIMONS BAY, 14th May—Wizard, Lily, and Andromache.

H.M.S EDINBURGH.—The Edinburgh, 72, Capt. W. Wilmot Henderson, CB., was paid off into ordinary on Wednesday last, after having been nearly four years in commission; during the greater part of which time she was actively and usefully employed in the West Indies, North America, and the Mediterranean stations. We feel pleasure in noticing the creditable and orderly manner in which her crew conducted themselves whilst in port—conduct we cannot but attribute to the efficient state of discipline attained on board that ship. On her being inspected at Spithead by the Commander-in-chief, the very first shot from the main deck sunk the target, and subsequently two other targets were as quickly destroyed. The precision of their fire, and the celerity with which the ship's company performed the various duties, were such as to induce Sir Edward Codrington to make a very favourable report to the Admiralty; and it became a pleasing part of Capt. Henderson's duty, before parting with so fine a set of men, to read to them the expression of the approbation of the Board at the efficiency in every respect of the Edinburgh.

Whilst at Spithead liberal leave was allowed. When she came into harbour to be stripped, all further leave was stopped until she was cleared. The consequence of these judicious measures was, that the same order and regularity was observed up to the moment the men were paid off and went over the ship's side, as if she had only come to refit. The commander-in-chief, in a public letter, expressed his high approbation of the excellent arrangements adopted for paying off the ship.

The following medals, pensions, and gratuities were awarded;—A. Thompson, quarter-master, a medal, gratuity of 15*l.*, and a pension of 27*l.* 16*s.*; Thomas Fleetwood, ship's corporal, a medal, gratuity of 7*l.*, and pension of 22*l.*; William Tye, gunner's mate, a medal, gratuity of 7*l.*, and pension of 25*l.* 16*s.*; Sergeant Trescott, a medal, and a gratuity of 7*l.*; James Drudge, ship's cook, is not entitled to the medal and gratuity, having only served twenty years. The Humane Society have awarded a medal to Benjamin Young, second captain of mizenmast, for saving the life of a woman who fell overboard.

On Monday the officers of the ward-room gave a parting dinner to Capt. Henderson and the gun-room and warrant officers; thirty sat down. They also presented a silver snuff-box to Captain Joliffe, RM., in testimony of their esteem and regard for him as an officer and gentleman, but more particularly for the very agreeable, urbane, and satisfactory manner in which he had conducted the mess affairs.

On paying off, the ship's company disposed of, in charitable purposes, the proceeds of the savings generally of liberty liquor, during the commission, in the following

manner;—To the widows of two petty officers who had lost their lives in the ship, 5*l.* each (we are desired by the widows and orphans in this case to express their grateful thanks for this generous bounty); to the Seamen's Hospital, 5*l.*; to the Seamen and Marines' School, Bath square, 5*l.*; to the Orphan Seamen and Marines' School 5*l.*; to defray the funeral expenses of J. Callard, a shipmate, who died the day the Edinburgh arrived at Spithead, and was buried by desire of the crew at Kingston, underneath the tablet they had erected to the memory of those who fell at Acre, 7*l.* Total 32*l.*—*See page* 503 *of our last number.*

NEW AMSTERDAM—Berbice, May 13.—Some sensation has been created by the arrival into this port of a slaver, with about 160 captives. As near as we can ascertain, the following are the facts concerning her:—She is a Portuguese-built brig, called the Denas Fevereira, captured off the Brazilian coast, on the 19th February last, by H.M. brigantine Fawn, Capt. Jones, after a chase of eight hours. Upon inquiry, it was ascertained that she had sailed from Benguela, with a cargo of 510 slaves; that during a passage of thirty days she had lost 130 of her number, from the scurvy and small-pox. When she was captured she was taken to Rio Janeiro, whence she was despatched under the command of Mr. Johnson (mate) RN., to this colony with 180 of the captives for adjudication. During a passage of fifty-three days, from Rio Janeiro to this place, 20 more of the unfortunates perished from the same causes, and the remaining 160 were landed in a most debilitated and sickly state. Since being landed four more have died, 29 are confined to the hospital, and 137 have been conveyed to Pl. Onderneeming, under the superintendance of the assistant agent-general for emigration, G. G. Lowenfeld Esq., by whom they have been furnished with blankets, provisions, and other necessaries, until the case can be adjudicated by the Court of Vice-Admiralty at Georgetown. The remaining 200, or such of them as are still living, are at Rio Janeiro, waiting for a vessel to be sent by the governor of this colony, to bring them hither. It is supposed that the Venezuela will be despatched as soon as possible, and that within 36 days from the time she starts, she will return with them to this colony. The condition of these poor unfortunates is truly lamentable, many of them dying from inanition. We cannot too highly commend the prompt and active exertions of the assistant agent-general in this business, and the benevolent anxiety which he has evinced to render them as comfortable as possible. Since writing the above we have been favoured with the following extract from the log of her Majesty's schooner Fawn.

"Latitude 22° 30′, longitude 40° west, Lieut.-Com. J. Foote, her Majesty's schooner Fawn—On the 19th February, 1841, Cacupos, on the coast of Brazil about eighteen miles, observed a large brig standing in for the land;—altered our course so as to cut her off if possible, on approaching. She appeared not to have the least idea of our being a man-of-war—allowed her to close within range of our long 32-pounders—fired a gun over her, and another as quick as possible ahead—she then up with her helm, attempted to run, but appeared in great confusion. We continued to throw the shot over, ahead and astern of her, without intention of striking, as we were positive of slaves being on board. After a short time she was increasing her distance; Lieut. Foote then determined to put a shot into the hull, but with great regret, on account of the unfortunate beings on board. Shots were then thrown close under her stern twice—a third was about to be fired, when we observed her round to. In about 20 minutes we came up and boarded her. The slaves were all below, with the hatches on, on turning them up, a scene presented itself enough to sicken the heart even of a Portuguese:—the living, the dying, and the dead huddled together in one mass. Some unfortunates in the most disgusting state of small-pox in the confluent state, covered from head to foot, some distressingly ill with ophthalmia, a few perfectly blind, others, living skeletons, with difficulty crawled from below, unable to bear the weight of their miserable bodies. Mothers with young infants hanging at their breasts, unable to give them a drop of nourishment. How they had brought them thus far appeared astonishing—all were perfectly naked, and their limbs much excoriated from lying on the hard plank for so long a period. On going below, the stench was insupportable. How beings could breathe such an atmosphere and live, appeared incredible. Several were under the loose planks, which was called the deck, dying, one dead. We proceeded to Rio Janeiro with the prize. On the passage we lost 13: in harbour 12, from small pox and debility. A number also died on board the recovery ship Crescent. After clearing the hold and fumigating the brig, it was determined by Mr. Guseley, the British minister, to send her, with part of her cargo for adjudication, to the nearest colony, under the

command of Mr. G. Johnstone, mate of the Fawn. We sailed March 19th, with 180 slaves, well provided with medicines, and directions in what manner to use them. Tapioca and lime juice were also provided. Notwithstanding all the care that a small crew could bestow on them, we unfortunately lost 20, chiefly from scurvy and general debility. This unfortunate brig left Bahia Fort, on the coast of Benguela, with 510 negroes, and 13 days after, on her capture, she had but 375."—*Berbice Gazette.*

H.M.B. RACER.—Extract of a letter from H.M.B. Racer, dated Newfoundland, May 24th:—Yesterday, came from sea, bad weather, with a thick fog; while the officers were at dinner, an alarm was given of a man overboard; a rope was thrown to the poor fellow, but from the tide running so strong (full six miles an hour) he soon became exhausted; he cried out that he could not hold any longer, when, at this moment, the master, Mr. C. T. A. Noddall came on deck, instantly seized a rope, made a bowline knot, jumped overboard with it, and they were pulled up together; when on the top of the hammocks, Mr. Noddall caught hold of one of the halyards to steady himself, when it unfortunately broke, and he fell on the deck; his left arm coming in contact with the sharp iron on the gun slides, a severe contusion was the consequence, but whether accompanied with a fracture of the bones or not we cannot yet ascertain. The poor fellow is, however suffering severely for his noble action.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At the Royal Naval Hospital, at Haslar, on the 31st of May, the wife of Dr. Richardson, of a daughter.

At Douglas, Isle of Man, the lady of Capt. Sir T. S. Pasley, Bart., RN., of a son.

Marriages.

At Walpole St. Andrews, near Lynn, June 29th, Capt. Sir W. E. Parry, RN., to Catherine Edwards, relict of S. Hoare, Jun., Esq., and daughter of the Rev. R. Hankinson.

On July the 5th, at St. Mary's Church, Bryanstone Square, Capt. Lushington, RN., second son of Sir H. Lushington, Bart., to Henrietta, eldest daughter of Capt. Prescott, CB., RN.

At Aberdeen, J. Michell, Esq., of Forcett Hall, and Glassell, to Jane, only daughter of Rear-Admiral Sir A. Farquhar.

On the 15th of July, at Hamble Rice, the Rev. J. Barney, MA., Vicar of Charlton Adam, Somerset, to Mary Ann Bradby Lumley, only daughter of the late Capt. J. R. Lumley, RN., of Charlton, Kent, and grand-daughter of the late Admiral B. Douglas.

On the 13th of July, at St. Nicholas, Harwich, Capt. M. W. Heath, RE., Civil Engineer to the Admiralty, in the Royal Dockyard, Pembroke, to Jane, the third daughter of J. Sansum, Esq., of Harwich.

At Marylebone, P. Gostling, Esq., commander of H.M.S. Electra, to Ann, daughter of the late W. Bishop, Esq.

At St. George's Hanover-square, Capt. Blanckley, RN., late of H.M.S. Pylades, to Sarah, eldest daughter of the late Sir G. Nayler, Garter King at Arms.

On the 6th of July, at Southampton, by the Rev. J. Jones, AM., Capt. E. Jones, of Wymistay Place, Wexham, to Caroline, eldest daughter of the late Capt. P. Rainier, RN., CB., of Hamilton-place, Southampton.

At Clapham Church, C. W. N. Fowell, RN., to Theana, daughter of J. Holland, Esq., of Clapham Common.

On the 13th of July, by the Rev. W. B. Pole, Munday Pole, Esq., Capt. 89th Regiment, son of C. Pole, Esq., of Wyck Hill, Gloucestershire, to Mrs. A. Salwey, only daughter of the late Admiral Manley.

At Marylebone, Capt. Morier, RN., to Fanny, daughter of D. Bevan, Esq., of Belmont, Herts.

Deaths.

Recently in France, Admiral J. Aylmer; second in seniority of the flag officers of the fleet.

At Gatcombe House, on the 30th of May, Lady Curtis, the wife of Rear-Admiral Sir L. Curtis, Bart., CB., aged 51.

Lately, at St Petersburgh, Admiral Sir R. Crown, aged 89. He was a native of North Britain, and entered the Russian service at the close of the American war. He was always highly respected by the Imperial Family, and his funeral (which was a public one,) was honoured by the personal attendance of the Emperor.

In Baker-street, London, in his 60th year, John, youngest son of Rear-Admiral Sir C. Malcolm.

METEOROLOGICAL REGISTER.

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

From the 21st of June to the 20th of July, 1841.

Month Day	Week Day	Barometer, In inches and Decimals		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM	PM	A. M.	P. M.
		In Dec.	In. Dec	o	o	o	o						
21	M.	29·81	29·92	61	68	53	70	SW	SW	4	8	od (2)	qbcp (3)
22	Tu.	30·07	30·06	58	64	51	66	SW	SW	3	3	bc	bcp (3)
23	W.	29·98	29·90	58	60	46	64	SW	SW	3	4	bcp 2)	bcp (3
24	Th.	29·77	29·71	58	59	44	64	SE	SW	2	4	bctlr 2)	bcp(3) (4)
25	F.	29·53	29·55	56	64	54	66	SE	SW	2	4	or (1) (2)	b
26	S.	29·65	29·74	62	62	53	64	SW	SW	8	7	qbcp(1(2)	bcp (3)
27	Su	29·97	30·10	63	65	52	66	SW	SW	6	6	qbcpt-(2)	qbc
28	M.	29·97	29·91	55	58	50	60	SW	SW	6	4	qor (2)	or 4)
29	Tu.	29·78	29·79	56	61	49	64	SW	SW	4	6	bcp (1)(2)	qbcp (3 4)
30	W.	30·00	30·04	56	64	47	66	NW	NW	5	3	bc	bc
1	Th.	30·12	30·07	57	62	51	63	NW	W	3	4	od (2)	o
2	F.	30·10	30·13	61	64	58	65	W	W	2	1	o	od 4)
3	S.	30·16	30·12	64	68	58	69	NW	NW	1	2	o	bc
4	Su.	30·00	30·02	63	67	55	68	SW	SW	3	2	bcr 1)	bcp (3)
5	M.	30·10	30·08	59	67	53	69	NW	NW	2	2	o	bcm
6	Tu.	29·66	29·76	60	65	56	67	W	W	7	6	bcr 1)	bc
7	W.	29·89	29·81	59	63	51	65	SW	SW	4	5	bc	or (4)
8	Th.	29·78	29·87	57	63	54	65	NW	W	4	4	bc	bcp 3)
9	F.	29·95	29·97	55	64	45	65	NW	NW	3	3	bcm	bctlp (4
10	S.	29·93	29·84	54	65	45	67	NW	SW	2	8	b	qbcr 4)
11	Su.	29·23	29·34	54	56	49	57	NW	NW	8	9	qbcr 1)	qor(3) (4)
12	M	29·57	29·63	58	58	47	61	NW	W	5	2	bc	bcp 3)
13	Tu	29·62	29·69	55	63	43	65	W	W	3	7	bcm	qbc
14	W.	29·73	29·67	57	57	45	59	SW	E	2	2	o	or (4)
15	Th	29·66	29·73	56	54	46	58	NW	SW	3	3	bctlhr 2)	otlr (4)
16	F.	29·88	29·94	52	59	50	61	NW	NE	2	3	or (1)	bc
17	S.	30·01	29·99	58	64	45	66	SE	E	3	2	b	bc
18	Su	29·65	29·69	58	58	50	59	NE	NE	2	2	o	op (3)
19	M.	29·80	29·85	60	67	48	68	SW	SW	2	3	bc	bcp (3
20	Tu.	29·68	29·57	57	60	53	61	SW	SW	5	5	od (2)	or (3

June.—Mean height of barometer = 29·948 inches; mean temperature=55·8 degrees; depth of rain fallen = 2·12.

TO OUR FRIENDS AND CORRESPONDENTS.

Our correspondent in King Street, Hull, shall be heard in his turn.

Our former Hull correspondent will see that we have made use of his useful translation.

We refer a Voyager to the plan of Saldanha Bay in our last number for the position of the *springs*.

Our publishing friends must bear with us till our next, when we will do them ample justice. We understand that an entire new edition of the *first* volume of Horsburgh's Directory is now ready for delivery. In our next we will overhaul it, and report accordingly.

The letter of M. X. M. most certainly in our next.

Erratum.—*Portsmouth.*—Page 194, line 19, *for* "white" *read* "black,"—line 21, *for* "black" *read* "white."

Gjœsboen with three or four fathoms water on it, lies as observed fourteen miles N.N.E. of Fugloë.

CHART
OF THE
SOUTH POLAR
SEA.

0°
40°
50°
60°
70°
80°
90°
100°
110°
120°
130°
140°
150°
160°
170°
180°
170° W
160° W
150° W
140° W
130° E
120° E
110° E
100° E
90° E
80° E
70° E
60° E
50° E
40° E
30° E
20° E
10° E
0°

Cook 1773 Dec.
Perpendicular Barrier of Ice
Ross June 1841
Ice Isld
Lofty Mts
Mt Terror
Mt Erebus Active Volcano 12,400 feet high
SOUTH
VICTORIA
Ballenys Is
Beach Apl 1839
Moorings
Anchorage
Adelie Land
Clarie
Supposed Land
Numerous Icebergs and Indications of Land March 1839
Ross March 1841
Cook 1773
Balleny Is
Ross Apl 1841
Emerald Id
Macquarie Id
Campbell Is
Antipodes I.
Bounty Id
Auckland Is
Cook 1773 Nov
Stewart Id
Snares
Dusky Bay
NEW ZEALAND
Cook May 1793
Ross Apl 1841
Cook Strait
Storm Bay
Macquarie Harb.
VAN DIEMEN
Port Dalrymple
Bass Str.
Kings I.
Albion Id
Three Kings
Ballenys Coast May 1839
C. Howe
P. Philip
Kangaroo I.
Coffin Bay
L. Alexandrina
St Vincent G.
Spencer Gulf
Nuyi Archipelago
Jervis Bay
Jackson
P. Stephens
Admiralty Is
Howe I.
Ballenys Coast Sept 1839
P. Macquarie
AUSTRALIA
170° East
160°
150° East
140°
130° E

Approaches to Hammerfest—Shoals lying outside of Fugloe on the North Coast of Norway.

There are few portions of sea coast that abound more plentifully in dangers formidable to navigators than the coast of Norway, and there are fewer portions of the coasts of civilized Europe that are less known. Even the approaches to Hammerfest, the principal port of Northern Norway not less exempt from outlying reefs and intricate channels, than the most unfrequented part of that iron-bound coast are no less involved in obscurity.

In the *Annales Maritimes* for November 1839, Lieut.-Com. M. Fabvre who visited that port in command of the Recherche on her way to Spitzbergen, complains justly of the deficiency of our charts. He says, they extend well out to sea, and that he fixed the northern extreme of one of the reefs, lying two leagues out, in 70° 18′, and long. 19° 48′ E. This reef is in the way of vessels going to Hammerfest by the south-west passage, and is the more dangerous (a feature, which by the way applies to nearly all alike) from the sea not breaking over it with *off shore winds;* and Lieut. Fabvre recommends vessels adopting the northern channel to Hammerfest, which is "much larger and shorter, and quite free from danger."

In the midst of this state of affairs it is satisfactory to be assured that the wants of the seaman are to be endured but a short time longer, that the surveyor is "abroad" on the coast of Norway, as well as elsewhere, and that we shall soon have some charts on which dependance may be placed. If they are similar to four sheets already published by the Norwegian government, seamen, we pronounce, will be well satisfied with them. A short time ago a vessel from Christiania ran on one of these reefs, and was with difficulty got into Hammerfest. In consequence a notification of the danger was published at Hammerfest, and appeared in that valuable paper the *Shipping and Mercantile Gazette*, which notice would be sufficient to caution our shipping; and a representation of the same danger has been made by her Majesty's Consul to Government, a copy of which we lay before our readers. We shall look with much anxiety for the charts alluded to.

"From Fladroer outside of Hoaloë in the course to the north of Fugloë in the district of Tromsoe, are a series of shoals, of which some are of a dangerous character, the farthest out to sea: Nordstoe, Bredgrund, Gaasegtarren, East Gaassene, Hordboën, and Gjœsboen. On all these the sea constantly breaks; some of them, namely East Gaassene are dry at ebb tide. The most westerly, namely Nordstoe, lie about six miles N.b.W. of *Vaudoë;* the most easterly the inner Gjœsboen, fourteen miles N.N.E. of Fugloë; and the distance between each is about eighteen miles. When a right line is drawn from the inner Gjœsboen, or from W.S.W. to E.N.E., all the remaining shoals will be to the south of this direction. Nordboen, which merely has one fathom water on it lies nearly due north of Fugloë, at a distance of eight miles, the inner Gjœsboen with three or four fathoms water on it, lies as observed fourteen miles N.N.E. of Fugloë.

"In 1842, the charts, comprising the whole of this range of coast with special directions will be published: until then, it may serve as a guide to know, that the outermost of these shoals, Nordstoe, is situated in north latitude 70° 30′ 40″, and longitude 19° 30′ 55″ E. of Greenwich.

"The inner Gjœsboen north latitude 70° 30′, and longitude 20° 27′ 50″ east of Greenwich. The shoals Nordstoe, Bredgrund, Gaasegtarren, East Grassene, Nordboen, and Gjœsboen, are not laid down in our charts.

"The islands of Hvaloe, Vaudoë, and Fugloë, are to be found in our present English charts. The miles are English geographical miles."

(Signed) "J. R. CROWE, *Consul.*"

Alton Hammerfest, 12th July, 1841.

A VOYAGE FROM THE HAVANA TO VERA CRUZ, TAMPICO, AND SAVANA.

By Mr. W. Mooney, mate of H.M.S. Thunder.

THE loss of her Majesty's packet Spey having rendered it necessary that another vessel should be employed to carry the mails, &c., to their different destinations, as also to collect the return mails, one of the Bahama mail boats, called the "Sarah Anne," a very fast vessel, was selected by the British Consul at Havana for these services. Although only registering 17 tons, she is still a very fine boat for her size; she is built on the Baltimore plan and considered "a clipper." One of the Spey's chronometers was supplied to her, and the charge of her given to Mr. Mooney, mate of her Majesty's vessel Thunder. It being the month of December, the very acme of the northers, a few hard knocks and uncomfortable hours were anticipated, before the accomplishment of the voyage.

On the 14th of December, 1840, at daylight, the mail boat was put in motion, in obedience to a light land wind, and although we were very scrupulous in displaying a blue ensign and long pendant, the guardship's boat would not recognize our right to a free passage; accordingly, a boat under the joint or simultaneous command of a coxswain, soldier, and bowman, made her appearance alongside to demand a pass, but we took good care not to understand a word they said, and merely answered by a significant nod to the pendant now floating aloft; the true cause of the tenacity shewn, was the non-appearance of about 9d. sterling, their customary fee from merchantmen. In time they decided not to be towed out to sea, and left us to ourselves.

On the following day, we sounded on the small portion of bank westward of the Colorados reef, still shewing many a wreck of noble vessels; —touched at Cape St. Antonio to obtain a temporary rate, as the chronometer had been set going only the day before our departure; here a norther commenced. To the southward of the cape, the current runs at the rate of one and a half knots per hour, decreasing gradually as we proceeded to the southward. On the 20th we arrived at Belize;

the town is very mean in its appearance; there is a rather picturesque bridge over the river, a novel sight in these climes. The mahogany cutters were coming in from all quarters, to partake in the Christmas gambols and debaucheries; the mustering and arming of the militia, both by sea and land, forming the most attractive scene; the splendour of the officers' uniforms, and self-satisfaction of the subordinates, whilst receiving, burnishing, and donning their accoutrements. The flotilla consists of all pleasure craft and coasters belonging to the place, the greater number of these are constructed of the immense canoe of the country, made from one trunk, risen upon, hove out and decked; and, indeed, if it were not for a slight clumsiness about the after part, they would be very light vessels; some of them measure as high as ten tons. The market is badly supplied with flesh, but fish and turtle abound. The logwood is floated down the river on rafts of cabbage wood, almost as buoyant as cork. The mahogany finds its own way down, and sometimes finds its way out to sea, if there are not proper persons stationed at the different branches of the river to turn it down the main stream. The superintendant, Colonel M'Donald, to whose hospitality we are indebted, has the second son of the Musquito king at his residence; he seems a sprightly forward boy, about eleven or twelve years of age, and perfectly Indian in make and color. The "dory," a light species of canoe, is the only boat in use, and the agility and tact displayed in its management, coupled with its graceful form and extreme swiftness, render it one of the most remarkable objects. The garrison consists of a detachment of the 2d. West India regiment, and a few artillery. There is another settlement to the southward called Isabel, at which there is a steamer; it is some distance up the Gulf of Dulce.

On the 21st, having re-shipped our pilot and his dory, we departed, not without some regrets that we could not partake in their Christmas rejoicings. If the pilot we had was a specimen of his brethren, they must be a precious herd. He certainly was not sufficiently acquainted with several main points of his duty, such as the weather, nature and different colours of the bottom, bearings, distances, &c.; in fact, he altogether went by the eye, by which means we were obliged to lose a whole night.

Although there was a strong norther against us, and the navigation inside the Chinchorro and Cozumel very dangerous, on account of the violent current, we were off Cape Contoy on the morning of the 4th day, a distance of about 360 miles. On the north extreme of the Chinchorro reef we saw a large barque ashore, apparently English, but it was impossible for us, on account of the boisterous state of the weather, to render her any assistance. On the north point of the island of Contoy we observed a Spanish brig ashore, bound from St. Jean de Nicaragua to Havana; her cargo, aguadiente, indigo, and hides, he had been beating up against the norther also. It must be observed, that outside the edge of the Yucatan bank the current runs with great rapidity, at the rate of about four knots per hour, but not so on the bank; the current never runs more than one and a half knots, and even then is subject to variation by the force of the ebb and flood tides. I ascertained that he had steered the same course on the bank

as off it, and consequently, whilst thinking himself to the northward, he was very much surprised to find himself ashore: he had sent to Sisal for assistance, so we continued on our route. The soundings between the parallels of 20° 40′, and 22° 00′ north, run very regular, although the nature of the bottom alters frequently. A set to the south-east was perceptible, and on the western edge of the bank the tide or current, (nearly full moon,) sets on from south-west to west, at the rate of 2·5 per hour.

Abundance of exquisite ground fish may be caught throughout the whole extent of the bank, the catching of which affords a very agreeable and profitable recreation in a calm. We endeavoured to hit on a shoal, discovered by her Majesty's packet Spey, on one of her former voyages to Mexico, situated ten or twelve miles to the northward of the Triangles, but as the current increases so suddenly near the edge of soundings, we were swept so much to the northward between observations that we missed it. After leaving the Campeche bank, the current set strong to the north-eastward, across the whole track to Vera Cruz. When about forty miles north-east of the said port, our forebodings were realized, we had one of the most severe gales, with the exception of a hurricane, that the West Indies produce. The sea was awful, caused by the strong current running against the wind, but our little vessel rode it out nobly, being benefitted in no small degree by the size of the wave, which no doubt would have damaged a larger vessel. As the gale continues and increases, so does the current and sea, as all the waters blown to the bottom of the gulf are turned back again, while the north part of the gulf decreases considerably in depth.

We arrived at Vera Cruz after three days hard battering, twelve hours before a large Danish brig, which had passed us off the Triangles; he confessed that he had had quite enough to do, and had no idea that it ever blew so hard in these seas. Although a fair wind for the port, he was like us obliged to heave to. We approached the town to the southward of the inner Anegada, beating up against the remains of the gale, much to the surprise of many, as the current runs very strong;—the pilot came on board after we had anchored under St. Juan castle, and had the assurance to demand pilotage.

Vera Cruz, since the French expedition, has become too well known to require the cursory description that three or four broken days could rummage out. The castle was not in half the disorder to be expected, nor could we see on what quarter the irresistible Gallic power had heaviest fallen. It is certainly no great wonder, that the explosion of one magazine should have scared such a sugar-cane-eating military as we saw, nor is it one leaf of laurel to the French navy. Two line-of-battle ships moored between the castle and town, would knock them both to atoms in two hours.

The road to Mexico, "par diligence," seems to be much frequented by Ladrones, who have a great affection for fat English merchants and travellers, these last being generally so incautious as to take long purses with them. The natural consequence is, that they are generally eased of their contents. They had latterly adopted the plan of taking no money with them, but they fared worse for it, for they were literally stripped naked,—the best plan is to take enough to satisfy these Ladrones. How-

ever strange it may appear, any amount of property can be sent by the muleteers or waggoners, and they are never molested. Perhaps, the robbers consider it a point of honour not to hurt men of their own standing in society. Fresh fish can never be obtained for the grand meal of the day at Vera Cruz; the fishermen never troubling themselves to go out till nine or ten o'clock, and generally return about six or seven, when in this hot country everybody has dined. The only remaining method, is to salt them for next day's use. So much has it become a custom, that except a casual stranger, most of the inhabitants prefer them so prepared, and aver that it improves the flavour.

The churches and cathedral are very splendid in their style, and expensively adorned inside,—silver and gold are not spared. I examined some of them, and was not a little surprised to see the different ways in which the Saviour was represented in the chapels of the cathedral. He was painted to suit all colours and shapes, from the Circassian to the Carib and Negro, white, brown, Indian colour, and black; however, the black image was nearest the exit, and the chapel most meanly in ornament.

Our longitude of the castle differed two miles to the westward of that in Sir J. Phillimore's plan. The feature of the coast from Vera Cruz to Tampico is rather erroneous in his plan; even the compass bearings of the islands between Tuopan and Cape Roxo do not agree. It is difficult to tell which is which,—Mount St. Juan is the best guide; when approaching Tampico from the southward, if clear, there are two sugar-loaf mountains in the interior also very remarkable. The land immediately to the southward of the bar, is the highest part of the coast from Cape Roxo, northward, and is remarkable by having a small button-shaped knot on its southern slope, and a little to the northward of this, an opening which appears as if the mouth of a river, at the end of the northernmost slope of this land is the river. The land immediately to the northward of the river* is a continuation of sand hills, studded with brushwood, and makes rather high six or seven miles from its mouth; it can be easily distinguished in any weather from the land to the southward of the bar, by its whitish appearance and inferior height; there ought to be some built land mark. The place has always been considered one of the most difficult to make; without a latitude impossible; and as vessels are blown off, and obliged to stand off and on sometimes for twenty and thirty days, before the bar admits them, a small light would be of infinite service. We had just sighted the vessels in the river, when it came on a gale from N.N.E., giving us time to shorten sail and no more; by the help of the river current we made sufficient offing. In the morning we stood in, and continued standing off and on all day, but no pilot ventured out; next morning his majesty made his appearance, and as the landing of the mail is contracted for, in the large boat which brings the pilot out, it was accompanied up to town by the officer in charge.

A difficulty having arisen, as to the propriety and safety of allowing so powerful a vessel as ours to enter the river, without a permit from the governor. The pilot did not return on board, it being no very com-

* In our January number for 1834, will be found an excellent plan of the harbour of Tampico, and the river up to Panico.—Ed.

fortable situation with a norther brewing: the bar having been sounded we found our own way in, and as the battery on the river point only rated two dismounted 9-pounders, our passage was effected without much damage. The river is a very fine one and abounds with fish, it is at least three-fourths of a mile broad in most places. There is a species of river porpoise very numerous here, said never to be found beyond the mouth of the river. The principal difference between it and the common sea porpoise, appears to be in the form of the snout and dorsal fin. As we pulled up the river we started numbers of duck, trail, several beautiful species of cranes, fish, hawks, plover, &c.

On turning the angle of the bank that conceals the town the view is rather pleasing. The placid river, studded with large vessels, the verdure of the trees, and surrounding country, evidently denoting its distance from the sea, give a picturesque appearance to the town as it looks down on the busy scene from the elevation on which it stands. British merchants were doing very little, some said nothing, although the fair had just closed, and they were only then removing the booths from the square. We took the schooner up to the town, to the no small merriment of the inhabitants, who had no idea that so small a vessel could with safety navigate so far up the river. It is certainly a splendid country and deserves to be in better hands,—the market was well supplied with everything. I here learned that we had been mistaken for a Texian privateer the day before; and if the guns had been *ready* should certainly have been saluted. The soldiers are here in much better order than at Vera Cruz, and administer the "quantum suff" of annoyance to the inhabitants, by their constant bugling, drumming, and fifing. It is asserted as a fact here, that there is an officer to every soldier in the Mexican army; these are paid very high wages; the officers are white, the soldiers Indian. I heard several stories as to the lightness of heel displayed by the former, when the latter shewing a hard front, despised the pusillanimity of their superiors, and in Peru and Chili I have always heard the Indians extolled for their bravery and endurance of fatigue and privation. The officers are well paid, to prevent them it is said from paying themselves. Another creation of twelve generals, at an expence of 1,000*l.* each per annum was about to take place, but with regard to the respectability, the following wicked story is current here. An English merchant, at Mexico, was waited upon by his quondam boot-polisher, in captain's uniform, for the balance of his wages; his blushing honours and commission had suddenly been obtained in some three days *boulevard* business, in which he had taken a prominent cut-throat position!

The best, and I may say, only good institution at Tampico, is that for public education. The house is neatly built, cleanly, and everything seems to be done in superior style. The scholars on Sundays form themselves into a band, and acquit themselves exceedingly well, although their music embraces no more than marches, waltzes, &c.

There has been an attempt made to build by subscription a church, of which the steeple and bells, (the indispensables in a Spanish town,) are all as yet accomplished; the funds as fast as they accumulate, having been seized by the different governors for the necessities of the state, their own pockets and the state being no doubt synonymous.

There being plenty of wild ducks, and also a great quantity exposed for sale, I was surprised to find no marks of shot upon them, On inquiry, I found that the Mexicans do not eat them when they have been shot, but adopt the following extraordinary mode of catching them for their table. A person provides himself with a tarpaulin or leathern dress, and enveloped in this, seats himself at the bottom of the lake or marsh which they frequent; a tube leading to the surface gives him air, and his hands and arms are free. Thus prepared, he watches his opportunity as a duck approaches, and catching him by the legs he gently hauls the astonished biped under water, without disturbing his companions, and quietly despatches him. They say it is a far less expensive and more expeditious method of obtaining them than the gun, but it certainly requires as plentiful a supply of the bird as is found in the winter season at Tampico.

PORT ESSINGTON AND THE PASSAGE TO TIMOR AND SWAN RIVER.—*From the Remarks of Com. Owen Stanley, H.M.S. Britomart.**

WE sailed from Port Essington for Coepang on the 22nd of October, 1839, and arrived on the 31st. During the passage the wind was very light and variable from south-east and north-east. A current setting to the westward, from 0·4 to 0·7 of a mile per hour was experienced during the whole passage. The bark Maria bound also to Coepang from Port Essington, passed to the northward of Timor, and was set upwards of three miles an hour to the westward after rounding the east end of the island, but had very light winds indeed.

After passing through the Straits of Semao we anchored with the flag-staff in Port Concordia bearing S.S.E. half-a-mile, in seventeen fathoms, and found the holding ground very good, though it is said to be better a little more to the eastward, abreast of the Chinese temple, which may be easily known by its being situated on a low cliff at the end of the sandy beach which fronts the town, and has two large trees before it. The landing place situated close under Port Concordia at the mouth of a small fresh water stream, is bad at low water when there is any breeze, as the surf rolls in heavily.

The whalers many of whom frequent the neighbourhood of Timor, sometimes anchor in the bay during the westerly monsoon; but must always be in readiness to weigh, if the wind comes in strong from north or north-west. On the opposite side of the Straits of Semao, there is a very good anchorage during the westerly monsoon close to the island; the distance from Coepang is about five miles, but in consequence of the difficulty of landing, the communication must be uncertain. At the period of our visit supplies were not easily obtained, with the exception of vegetables: owing to the want of rain during the last wet seasons even the rice crops had failed. The water is good and easily procured. The bay abounds with fish, which the people are too lazy to procure;

* Mr. Jackson's directions for Port Essington will be found in our volume for 1840.

and from all appearances the settlement has not improved since Captains Flinders and King visited it.

In returning to Port Essington we had to beat through the Straits of Semao, which appear to be quite free from dangers, except the long spit which runs out from the south-west point of Timor; upon which the sea was breaking heavily. The water is very clear so that a look-out from the masthead would always show any shoal in time.

On our passage back to Port Essington we experienced the same set to the westward, while to the northward of latitude 10° 45′. After which the current seemed to be entirely influenced by the southerly winds which prevailed near the coasts of Australia.

Near Victoria Trepang Bay upon examination proves to be very shoal, and on that account a good place for procuring the slug from which it derives its name. From Trepang Bay to Cape Don the coast is fronted by a coral reef, extending from one to two and a half miles from the shore.

At Raffles Bay considerable remains of the old settlement are still standing. Barkers Bay can hardly be called a bay, having only three feet water at half tide: there is a low sandy point about a mile north of it, which is nearly steep to.

All around the Coburg Peninsula and Crokers Island, the water is very muddy, so that no reliance whatever can be placed upon a look-out from aloft. Off Point Smith the sea is constantly breaking on the end of the reef, which may be rounded in five fathoms, but the fronter shoal, and also the shoal off Vashon Head, cannot be seen at all even when actually on them. In Sunday Straits the tides run very strong, and in several places there are considerable overfalls and ripplings.

Sunday, December 24th.—A little after sunset, a most tremendous thunder storm came on without any previous warning and lasted till near midnight, The lightning and thunder was not confined to any particular part of the heavens; rain came down in torrents, but little wind was felt.

Monday 25th.—A strong breeze set in from the south-east with drizzling rain, but as the barometer remained at 29·90, its usual point, and similar weather had been experienced at the change of the monsoon in 1838, nothing was apprehended, more particularly as the wind moderated (as had been expected) at sunset. Between seven and eight o'clock the wind drew round to the southward, and the barometer began to fall rapidly: at ten it blew furiously from the same quarter, and the barometer was as low as 29·10; many of the the trees were blown down at this time. At midnight the wind drew round to the eastward, and blew a perfect hurricane, before which nearly everything gave way; the trees came down in every part of the settlement, the marines' houses were all blown down, the church only finished a week shared the same fate:—the barometer fell to 28·52.

About two A.M. the wind shifted suddenly to the northward, from which point, for about half-an-hour, its fury was tremendous, the government-house, built on stone piers was blown away from them to a distance of nine feet; the sea rose ten feet and a half, by measurement afterwards, above the usual high-water mark; the pier was washed away, as were also the boat-houses, all the stores saved from the Orontes, and

a considerable quantity of salt pork from underneath the store-houses. H.M.S. Pelorus having parted her cables, was driven on shore, and thrown over on her beam ends, on the north-east point of the settlement, where heeling over 82° her starboard side was buried nine feet in the mud, leaving the keel three feet clear of the ground.

At daylight the barometer rose slowly to 29·90, the gale moderated, and the sea went down so fast, that between seven and eight we were able to send a boat to the assistance of the Pelorus: after eight the breeze continued to blow strong from the northward for two days, with heavy rain.

The occurrence of such a hurricane must be very rare, as the natives were as much astonished as ourselves, and came to beg for shelter: they have no name for it, and no tradition of anything of the sort having happened before: the state in which the very extensive fences at Raffles Bay were in shortly before, must prove that the trees had never been blown down in the way they were on the 25th of November, since that settlement was abandoned in 1829.

I was not able to detect any change in the formation or extent of the shoals in the harbour afterwards, except where the Pelorus was left; there the shoal certainly extended farther than before, as she was quite dry at low-water. The bay, however, from its being so shoal had not been sounded with the same care and attention as the other parts of the harbour.

I am at a loss to account for the manner in which the Pelorus was so bedded in the mud, unless by supposing it to have been deposited upon her after she upset; as there were no symptoms of her having been forced down; the starboard side bore no marks of friction, and the mud showed neither mound nor hollow near her; on the contrary all round her was a dead level.

The extent of the hurricane must have been very limited: at Coepang a strong gale from the south-west was experienced, and also between Java and Timor on the 26th, but the wind did not change: at Swan River nothing of the kind was felt, nor could I learn that the Beagle had met with any very bad weather, though she must have been nearer to Victoria at the time. Even eighteen miles north at Vashon Head the change of wind must have been greater though equal in force. There the first trees fell with the wind from W.S.W.; a few fell when the wind was east, and most when the wind was north-west. The Malays have an idea that every fifth year the monsoon is stronger than usual, but can give no reason for thinking so. According to them this monsoon ought to have been a strong one.

Sailed from Port Essington Feb. 12th, 1840, for Sydney, and had to contend alternately with light variable airs, and heavy squalls accompanied by rain from W.N.W. to W.S.W.; the current was also entirely influenced by the wind, but having been informed that it set constantly to the west in both monsoons near Timor, we stood to the northward, and made the east end of the island which is 2,000 feet high, and the mountains are intersected by very deep ravines. No westerly current was found, and the wind was so very light that we were glad to get to the southward again; in one month the distance made good gave an average of a mile an hour.

March 10th.—We passed a reef; the north point of which is in lat. 13° 39′, and long. 121° 53′ east, considering Port Essington to be in 132° 9′ Its extent from east to west is about five miles, from our masthead we could not see the end of it: in the south-east upon the outer edges the sea was breaking heavily within the breakers; the shoal was not dry any where, but did not appear to have more than two or three feet water. Tried for soundings with sixty fathoms within three cables' length without success. Scotts reef was seen some hours afterwards from the masthead apparently quite distinct from the other: Scotts reef extends more to the westward than is laid down in the chart, but I had not daylight enough to ascertain how far exactly, but I should think five miles.

The south-east trade commenced in lat. 19° S., long. 120° E., and carried us into lat. 21° S., long. 104° E.; its general direction was S.S.E., and was very light and variable. A westerly breeze succeeded, but when off Swan river, having been eight weeks from Port Essington, and only fourteen days' provision left, we were obliged to put in for supplies; we passed H.M.S. Beagle off Rottenest, but did not communicate. During her stay the channel between the south end of Rottenest* and the Stragglers was examined, and a good passage with not less than four fathoms and a half, but I had no opportunity of seeing their plan of it.

Geographical Positions.

	°	′	″
Victoria, Port Essington, latitude of Government-house deduced from 52 observations with circle . .	11	22	02·5
from 41 " azim. alt. . .	11	22	01·4
Mean . .	11	22	02·0

Longitude from 10 sets of moon culminating stars . 8h. 48m. 37·7s.

Variation near the pier. . .	1°	0′
Dip by my needle . . .	35	28
Ditto by Capt. Wickham . .	35	18

Port Concordia, Coepang, Timor, difference of longitude from Victoria.

Going to Coepang . .	34m.	19·2s.	0h. 34m. 20·2s
Returning from Coepang .	34	21·3	
Variation	1°	53′ W.	
Dip	33	46	

Custom-house Delli, Timor, difference of longitude from Victoria.

Going	26m.	31·4s.	0h. 26m. 27·2s.
Returning . . .	26	23·0	

Reef near Scotts reef, north end, latitude . . . . 13° 39′ S.

Difference of longitude from Victoria 41m. 06s.

Long. in space (considering Victoria in 139° 9′ 25″ E.) 121° 52′ 55″ E.

Climate of Port Essington.

A correspondent who signs himself "Chisholm," sends us the following further particulars of Port Essington.

The climate of Port Essington is extremely healthy, as we had not a

* Directions for the navigation about Rottenest Island appeared in our last number p. 400.

single case of sickness brought on by it during our stay there, although nearly all the people slept on deck. The natives are apparently a finer set of men than those of the southern coast; their arms are spears of different sorts, some stone-headed, but most of them are headed with wood, barbed, and about two feet in length, which is fitted into a bamboo handle of about eight or ten feet in length, with gum and small cord made from the bark of a tree. They also have large clubs made of the same sort of wood as the spear heads, and are used with both hands. They have no idea of the bow and arrow, as they could not use them when shewn how, nor could they use the bomerang of the southern coast. The only defensive weapon is a small shield, about two and a half feet in length, by one in breadth, on which they receive the spears thrown at them with wonderful dexterity. The larger sort of spear is thrown with a wamara or throwing stick, which is about three feet in length, and three or four inches in breadth, with a small hook at the end, into which the end of a spear is fixed, which gives a great lever power, and enables them to throw it to a distance of more than forty yards with beautiful precision. The small sort of spear is thrown without the wamara, and is only used for birds. I have seen them hit a bird on the wing with one.

They have no dress whatever for either sex, except a belt round the waist, armlets, bracelets, and anclets, be called dress. It has been said that they have no religion, but to judge from circumstances, one would think differently. They raise mounds over their dead, and in describing a man as having been killed; they laid down as if dead, and then pointed upwards, as much as to say, that the deceased is gone there. Their only musical instrument is a piece of bamboo scraped very thin from the inside, with which they make a noise something between a base horn and a tromboon, but much softer than either; it is about four feet long in general. Their digara-wamba or dances are several; in some they imitate fighting, but others are rather indecent. The different dances have different tunes, and the men and women do not dance together.

When I left in the Alligator, there was a wharf run out for a considerable distance, built of stone. Each marine had a house and garden, for himself; besides which, there was a government-house, barracks, hospital, storehouse, and a mess-house for the officers living on shore; there were also several private houses belonging to the officers. A good number of pigs, which were increasing fast; some guinea-fowls, and common cocks and hens also on the increase.

The party which traversed the Peninsula, a short time before we left, saw numerous traces of buffaloes quite fresh; but only saw a few of the animals themselves, which ran away on their approach.

Stranding of H.M.S. Pelorus at Port Essington.

The following extract from the *Sydney Herald*, *12th June*, gives an account of the stranding of the Pelorus which vessel has since been got afloat.

"The Pelorus went on shore during the hurricane at Minto Head, Port Essington. She was driven on shore about midnight, nearly drifting

foul of H.M.S. Britomart, firing guns of distress, which, from the violence of the wind were not heard. She struck very heavily, gave two or three lurches to starboard and port, and fell over on her starboard broadside; the crew held on by the weather rigging, the sea making a clear breach over her. All her boats were smashed, and her yards were sticking in the mud. At daylight a raft was constructed of some of their spars, and by means of a rope previously taken on shore by one of the seamen, they were enabled to transport the sick to the shore. One man was drowned in attempting to gain the shore. The Britomart sent a whale boat to the assistance of the crew. This was the only boat, besides a gig, left out of twenty belonging to the vessels-of-war and the colony. By means of this boat and the raft, the ship's company were safely landed. After erecting huts for the comfort of the men, and providing for the sick in hospital, the attention of the officers and crew was directed to the clearing the vessel preparatory to trying to heave her off. At low water spring tide, the Pelorus was high and dry for upwards of twenty yards beyond her. The sea had risen during the hurricane to about ten or twelve feet above the common level of the highest springs, and consequently she was thrown up as far as her draft of water (fifteen feet,) would allow.

"She was found, at low water, some few days after the hurricane, to have imbedded herself ten feet in the sand, part of her main and false keel gone, and the forefoot merely held on by a couple of copper bolts. It was found advisable to divest her of her false keel altogether, to lessen the draft of water, in hopes of floating her off at a high spring tide. The men were employed in digging for the guns, but it was found impracticable to continue the work. Captain Kuper then ordered a dam to be built to enclose the guns, and by dint of great exertion on his part, and that of the officers and men, in conjunction with the crew of the Britomart, and Capt. McArthur's party at the colony, the guns were dug out, and the mud entirely cleared. Six pumps were continually at work to keep the dam dry; until about half-tide it was found safer to clear away for the water, to prevent it sweeping the dam in altogether; during each neap tide, nothing could be done to lighten her. The guns having been got out with all the stores, and a great number of casks and tanks lashed to her by means of spars, &c., by bearing on purchases, on January the 18th she rose a little; and from this time probably she came up every tide.

"Latterly, one pump kept her free. The shores under her side having given way on one night at the falling tide, the vessel fell over and sprung her mainmast, February the 3rd.—The Britomart hauled to within a cable's length of her, and for two or three tides, at high water, hove in on heavy purchases, without being able to do more than turn her a little round, and, it was supposed had carried her ahead a few feet. The purchases were all carried away. Captain Kuper, it was understood, when the Britomart left, intended to dig her way out, by building dams, but it would be a work of considerable time. The highest water under her stern was ten feet, and it was supposed she drew twelve feet when supported by casks. A raft weighing upwards of twelve tons, was lashed to her mast heads, at low water, to keep her on her broadside, to float her out in that position, but as the tide rose,

so rose the vessel, raft, and all nearly upright. This weight appeared to have little or no effect upon her. Captain Kuper was so sanguine of getting her afloat, by the next new moon, that he needed no longer the assistance of the Britomart, and she was, consequently, despatched to Sydney for provisions. Great doubts, however, are entertained whether she will ever get afloat again."*

SANTA CHRISTINA, RESOLUTION BAY, MARQUESAS ISLANDS.—*From the Remarks of H.M.S. Samarang, Capt. J. Scott.*

IN hauling up to the southward, after passing through the channel between Dominica and Santa Christina, Resolution Bay† is easily recognized by the extraordinary high land over its southern extremity, running up into two points, the western sharp, but well defined, the eastern of an irregular form higher, and appears as if rock were piled upon rock, in every fantastic form. On opening the Bay, the houses of the inhabitants are distinguished among the cocoa-nut and bread fruit trees; a point of land juts into the sea, at the bottom of the Bay dividing them so as to give the appearance of two villages. As the wind generally blows down in strong eddies from the high land that surrounds it, it is necessary to be on your guard in working into the anchorage, the shore is steep close to on both sides. It is not above 1,200 yards deep, and about 13 or 1400 yards wide at the entrance.

Good water is procured in abundance close to the sea, from a small stream at the southern part of the northern beach, we rafted it off, but with a Hearle's pump and a hose, the boat might be filled by lying close to the rocks that form a break in the sandy beach between the two villages before mentioned.

Latitude of Resolution Bay	9°	56′	0″ S.
Longitude of ditto by chronometer	139	13	5 W.
Meridian distance from fort St. Augustin, Conception Bay, and Chili	66	0	5 W.
Longitude by lunars, thirteen sights	139	16	2 W.

CHRISTMAS ISLAND.

IS a low island covered with stunted bushes, and a few cocoa-nut and palm trees here and there, large lagoons were seen from the masthead in the centre of the island, like other islands of the same coral formation. From the south-east to the south-west point of the island the line of coast runs N.W.b.W. $\frac{3}{4}$ W. 25·8 miles. A deep bay, however, runs to the northward from a point of land about thirteen miles and a half from the south-east point, near which are two conspicuous

* The Pelorus has since been floated, and stated to have sailed from Port Essington.—ED.

† In our February number for 1838, will be found some remarks by the Actæon on Resolution Bay, but a considerable difference appears in the longitude. See p. 74.—ED.

cocoa-nut trees, bearing about N.E.b.E. true, when in one with the point. The south-west point bears from the latter N.W.b.W. $\frac{3}{4}$ W. Close to the south-west point are two or three groves of cocoa-nut trees, (which from the sea appear as one,) planted by Capt. Cook on its discovery. From the south-west point the land trends north-east true, four miles and a quarter, forming a small bay, in the north-east part of which is the anchorage half or three-quarters of a mile from the shore, sand and coral, nine, eight, seven, and six fathoms. No turtle were seen, although Capt. Cook on his visit found a superabundance. From the north-east point of this bay the land appears to run away east into a deep bight, and then trends away again to the W.N.W. in a narrow slip, terminating in the north-west point, which bears nearly north seven miles from the south-west point. Its situation is as follows:—

South-east point meridian distance from Resolution Bay, Marquesas	18°	2′	28″ W.
Making the longitude	157	15	33 W.
Latitude of south-east point	1	40	34 N.
South-west point, longitude	157	38	57 W.
Ditto latitude	1	51	54 N.
North-west point, longitude	157	30	03 W.
Ditto latitude	1	59	30 N.

UNKNOWN ISLANDS AND REEFS, *named by Capt. Scott,* SAMARANG ISLETS.

September 15th, 1840.—Discovered several islets and a reef of breakers, the position of which are as follows:—

Meridian distance from north-west point of Christmas Island to eastern breakers	4°	38′	32″ W.
Making the longitude	162	17	35 W.
Latitude of ditto	4	56	15 N.
Eastern islet, longitude	162	19	40 "
Ditto latitude	4	56	10 "
Western islet, longitude	162	22	20 "
Ditto latitude	4	55	9 "
North-west breakers, longitude	162	30	12 W.
Ditto latitude	5	0	25 N.

These islets are a group of about a fourteen or sixteen, forming a belt round an apparently shallow lagoon; are covered with flourishing cocoa-nut and palm trees to the waters' edge. In the centre of the eastern reef is a small dry sand bank, the reef itself extends from the eastern islet nearly east, about two miles, over which the sea breaks heavily; another reef runs out from the western islet about a mile to the westward, what distance they run in that direction I did not ascertain; but at three miles from the breakers on the western reef, I sounded in nine, eight, and seven fathoms, at which time the north-west breakers were discovered from the fore-yard. By the angles that were taken, they stretch out full nine or ten miles to the north-west from the western islet: the northern edge of the north-west reef appeared from the masthead to run away about S.E.b.E. till it joined the eastern one;

broken water was observed every here and there along the whole line, with evident shoal water between it and the coral reef before mentioned.

With the strong currents we experienced in this neighbourhood a more dangerous spot to those navigating these seas, unacquainted with its existence, can scarcely exist than this group of coralline islets, with their extensive reefs. Had it not providentially fallen calm during the night, the Samarang must inevitably have been lost, with the probability of every soul on board perishing, as our course would have taken us directly on to the reef.

Currents experienced by H.M.S. Samarang, before and after discovering Samarang Islets and Reef.

Sept.	11th,	off Christmas Island,				current	S.	84° W.	37 miles.
"	12th,	latitude 2° 28′ N.,	longitude	158°	48′ W.,	do.	S.	80 W.	11¼ "
"	13th,	latitude 3 21 N.,	longitude	160	22 W.,	do.	W.		25 "
"	14th,	latitude 4 16 N.,	longitude	161	39 W.,	do.	S.	45 W.	10 "
"	15th,	Off Unknown Island				do.	none		
"	16th,	latitude 6° 47′ N.,	longitude	163°	13′ W.,	do.	N.	33 E.	50 "
"	17th,	latitude 7 42 N.,	longitude	163	52 W.,	do.	S.	72 W.	25 "

The French Whale Fishery.

[Substance of the report of Captain Cecille, of the corvette Heroine.]

The French whale fishery is carried on in two principal divisions, the most numerous of which is that on the coast of South America, in the Pacific; the other, composed of fifteen to eighteen vessels, is off the Cape of Good Hope, in the Indian Ocean, on the southern coasts of New Holland, in the bays of New Zeeland, in the Pacific Ocean. Some single ships go to the north-west coast of America and the Japan seas. The Heroine, provided with harpoons, lances, lines, sail cloth, &c., for the wants of the whalers, sailed from Brest in July, 1837, and proceeded to Rio Janeiro, and afterwards to St. Catherines on the coast of Brazil, complaining of the impositions of the harbour dues at the former place, which amount to fifty francs per day for a vessel of 500 tons.

In the bay of St. Catherine the whale fishery is denied to foreigners, the right being exclusively held by a Portuguese. The establishment consists of several large buildings, the principal of which are the foundry in which are twenty-eight furnaces, three immense sheds, under which are thirty reservoirs each, capable of containing the oil of about seventeen whales,—an immense lodging for five or six hundred slaves employed in the establishment,—then the cooperage,—the sheds for the boats and their gear,—magazines for oil,—the superintendant's house with a large garden,—a chapel and separate lodgings for the conductors of the fishery, which received about 500 whales in the year. Some opinion may be formed of the immense profit of the fishery on this coast alone, by eight establishments of this kind in the province of St. Catherine at the period of their prosperity. At present, the whales

having abandoned these parts where they underwent such prodigious destruction, everything is in ruin, and in a few years the traces of the whole establishment will be only known by its rubbish.

Many of these establishments do not pay the expense of their construction;—five or six whales are taken at this fishery in the year.

From St. Catherine the Heroine proceeded to the river Plata, and anchored at Maldonado on the 6th of September, 1837. The Elizabeth, of Nantes, had obtained for a tenth part of the produce the exclusive right of fishing in the river.

Another French whaler had lost four men by desertion, and her cooper by death, and having replaced the latter from his own vessel, Captain Cecille leaves Maldonado and Monte Video with the following caution to masters of vessels. He says, these places "should be carefully avoided by vessels commencing their fishery, unless they want to lose their men; Monte Video above all is the resort of deserters. They are only fit for those vessels which want nothing and have nothing to fear from desertion," and he gives the preference to St. Catherine on account of the facility and security of its anchorage.

Disappointed of seeing the establishment of Tristan d'Acunha, the Heroine proceeds to the Cape, where those civilities were exchanged between her officers and those of her Majesty's ship Thalia, which are always found when officers of the two services meet, and it is gratifying to find Captain Cecille acknowledging in the memoir before us, the services which were rendered to him by Rear-Admiral Campbell.

On the 7th of November, 1837, the Heroine left Simons Bay for Prince Edwards Island, and on the 28th, Captain Cecille says, "we made the land, and lying to a short distance from the north point of the westernmost island, waited for the noon observation to obtain the position of this point." Captain Cecille obtained an observation which gives the north point of the western isle in 46° 45′ south, and 37° 17′ 55″ east. These results differ from those of Cook, he says, who made it 8′ more south, and 10′ more east, and he enquires afterwards whether it was the north or the south point, considering that Cook did not stop to make observations. Captain Cecille in support of this quotes Cook, who says, "I *judged* that its latitude (western isle,) is, &c." which made him think that the positions of these islands are deduced from estimation.

On this subject, we may just observe that Captain Cook gives the north-east and north-west coast of the southern isle, and the north-west and south-west coast of the northern one, having passed between them according to the chart in the atlas accompanying his voyages, and he lays down the north-east point of the southern isle in 46° 44′ south, agreeing tolerably well with Captain Cecille's latitude, and which, under such circumstances, is rather more than might be expected.—We shall now follow Captain Cecille.

"Two miles E.S.E. of the north Cape is a very elevated and remarkable rock, which I have named "the Prince." It is much darker than that on the coast off which it stands, and is visible at a great distance. From the northward its summit appears larger than its base; from the north-east it appears like a tower, and from the east it also resembles a large tower, but with the summit cut off by an inclined plane. It is at

a short distance from the coast, which appeared fit for landing on in this part. In order to examine the western shore of the island, we continued along at the distance of one or two miles from the north to the south cape. Seven miles east 27° south from "the Prince," we found before us a bank of kelp, extending at right angles from the shore about three miles. The Heroine was put about, and after working round the bank, we approached the coast again to resume our operations. In all probability there is sufficient water under this kelp. I should think so, for it appears to be of the same nature as that which surrounds the island of "Tristan d'Acunha," and the "Falkland Islands," some pieces of which are forty fathoms in length. It is not rare to find it at the depth of twenty-five to thirty fathoms, however, that may be, it is also on rocks at less depth, and I therefore did not think fit to cross this marine forest,* and time would not permit of our sending a boat to sound. We met with another bank of the same extending a mile to seaward from the eastern point. The coast which from the north cape to this point trends in a direct line, east 40° south, and west 40° north, suddenly bends to the S.S.W. We found a considerable cascade about two miles in this direction, tumbling from a steep height on to the flat shore beneath. We kept continually sounding with twelve to fifteen fathoms along our track without finding any bottom.

"The coast we passed rises abruptly towards the mountains, presenting no sandy beach, no bay, nor place for anchorage whatever, neither could we form any correct opinion of the height of this mountainous island, the summit of which was concealed by the clouds. The heights were covered with snow, and we observed much more on the southern part of the island, which is less exposed to the sun. Not a tree or bush of any sort was seen; the soil seemed dry and arid, and there appeared a green and red moss, resembling that on the Isles of Croxet, interspersed with pyramidal shaped rocks which at a distance had the appearance of trees. It was probably this deceptive appearance which induced Cook to say, "By the aid of our best glasses we were able to discern not only trees, but even the bushes on these two islands." We were I confess, for some time ourselves under the same delusion, notwithstanding we could approach sufficiently near the shore to distinguish with the naked eye the innumerable quantity of penguins which covered it. It is not surprising that Cook, who had only approached within two leagues and a half, should have been led away by the deception.

"'At half-past 3 we arrived at the southern Cape. The wind which had been north-east freshened a good deal; it came from the mountains, and was icy cold; still the thermometer did not fall below 46 degrees, the barometer stood at 29·67. The weather was threatening, and we could not possibly return along the western coast before night; besides this, there was little probability of my finding ships on this coast exposed to the westerly winds, and a sea always running

* Captain Cecille was perfectly right. Captain King in his directions for the coast of Patagonia, says, with reference to this subject, "avoid kelp everywhere." He had had ample experience of the danger which at various depths was sure to be lurking beneath it.—Ed.

immensely high; these considerations determined me to shape my course without loss of time, for the Isles of Croxet. The eastern island is much smaller than the one just mentioned, it has a very remarkable rock at the northern extremity, but the entire length of the island did not appear to extend beyond five miles from north to south, although longer from north-west to south-east: neither is it so elevated as the other, and but lightly covered with snow.

"I was enabled during my stay at the Cape of Good Hope to gain correcter information respecting the situation of the Islands of Croxet, which are erroneously placed on the charts, even on Horsburgh's. I had learnt that, being exposed by their situation to violent winds they had been so often the scene of disaster, that the seal fishery established there had been abandoned some years, and not only that, the fishery had ceased, but that all the materials belonging to the establishment had been left behind, a ship not daring to go there for them. The people belonging to it had been recovered with great difficulty by a government vessel, which had made two voyages from the cape,—thus saving thirteen Frenchmen which the Harmony, of Bordeaux, had been obliged to leave there. This information, together with the knowledge that the passage-vessel 'Bordelais,' would be there in November, and the thoughts of the danger to which she would be exposed, determined me to visit them; a presentiment hinted that I might be serviceable to the cause of humanity. The sequel proved that I had not deceived myself.

"Our voyage across to these islands (Croxet,) although short, was not without difficulty. Scarcely had we quitted 'Prince Edward Island,' when we were obliged to reef; the wind increased more and more during the night, so that by the morning it blew very fresh, accompanied with squalls and heavy rain. The barometer fell rapidly about three-quarters of an inch,—towards mid-day it stood at 28·8 nearly, and within two hours it fell to 28·6." The gale was then at its height, the sea running very high, reduced the Heroine to storm sail, and after some boisterous weather, with hail and its general accompaniments, Capt. Cecille continues, "At 4 A.M. we perceived high land to the eastward, and soon afterwards more bearing S. 57° E., though considerably less than the first. The wind favoring us we steered for the former for the purpose of examining it: this duty owing to the very high sea, and the bad state of the weather was a difficult one, but we considered it indispensable that all the islands, offering either bay or harbour for anchorage should be visited. We were ignorant which of the four islands (that composed the group of Croxet Islands,) was Possession Island, and also in what part of it the bay of Navire lay, in which we expected to find the passage-vessel Bordelais.

"We began our task in the north-west with land which we have since found to be part of Hog Island; and running to the southward along the western shore of it a mile distant, we satisfied ourselves that it was inaccessible. Having reached its southern extreme the Twelve Apostles (a group of rocky islets) bore N. 25° E.; at the same time breakers were reported at a considerable distance bearing S. 50° E. We returned along the eastern coast of Isle Aux Cochons, and ascertained correctly that only the western coast of that island, and the Twelve Apostles offered no shelter for ships.

We then retraced our course to examine the dangerous breakers which had been reported, and which we had lost sight of, and at 11 they were three miles W. 28° S. of us. At mid-day we were enabled to obtain tolerably good observations, notwithstanding the horizon was not perfectly clear, and the sea was very high. We thus fixed the relative positions of the three* islands, as well as the dangerous reef which was still in sight.

"We then steered for the eastern group. At 4 P.M. we perceived an island not only more elevated, but of much larger proportions than those we had visited, and which we concluded to be Isle Possession. It was six in the evening when we neared a large perforated rock to the north-west of the island, and not far from the shore; from this rock we were enabled to see distinctly the whole of this steep coast entirely exposed to the wind, and against which the sea broke with all its fury. As I wished to avail myself of the remainder of the day to explore the eastern coast, we hauled our starboard tacks on board."

In following up this intention however, Capt. Cecille met with unexpected danger, and was glad to work up again to his old acquaintance, the perforated rock before mentioned, and before night got sight of the eastern isle. The next day land was seen at 3h. 30m. A.M., but the wind being light, it was lost sight of probably from haze until nine, when Capt. Cecille continues:—"We approached the perforated rock in order to proceed with our survey of the eastern coast.

"We had been for some time keeping a southern course along the land, when on the 23rd of November, at three o'clock, we perceived off a point ahead of us two boats coming to meet us; they were soon on board. The crews were Americans, each one being commanded by a captain of that nation, who acquainted us of the loss of their two vessels, the 'Atlas' and 'Colossus,' on Possession Island, on the 4th of Oct. preceding, they also told us that the passage boat, Bordelais, had been lying in the Bay of Navire, since the 6th of November. We proceeded thither, intending to anchor at the entrance of the bay, where we found her engaged in the fishery.

"The resources of the Heroine offered to Captains Barnum and Randall, as well as twenty-five of their crews, were accepted with gratitude. I took them onboard, in order to transfer them to any ships of their own country that I might happen to meet at the different fishing stations, or at any of the English colonies of Australia where there are Consuls. My first care on arriving at this anchorage was to cause a correct survey of the Bay of Navire to be made, so as to enable us to fix its position, hitherto so badly known; a service which was performed by M.M. Fournier and D'Ubraye, in the course of the day.

"The Isles Marion and Croxet, situated between 46° 9′ and 46° 34′

* Hog Island, Twelve Apostles Island, and Penguin Island. These islands are thus situated by Capt. Cecille:—

Hog Island . . .	Latitude	46°	9′	Longitude	50°	28′
Twelve Apostles Island	"	46	1	"	50	39
Penguin Island. . .	"	46	33	"	50	44
And the breakers in	"	46	18	"	50	40

But the parts of islands, whether east, west, north, or south to which these positions refer are not stated.—ED.

latitude south, 50° 24′ and 52° 20′ east long., are five in number, and are divided into two groups. The largest of the western groups is Hog Isle, which is mountainous and high; the coast in many places steep without any bay or anchorage for ships. The only parts which are at all accessible, and that with difficulty, are a few places on the eastern coast. It abounds with wild hogs and seals: at the distance of nine or ten miles E. 40° S., from the southern point of this isle is a dangerous reef which appeared to extend about a cable's length. It blew a gale all night, which made the danger formidable.

"About eight or nine miles to the north-east of the island are the Twelve Apostles, which, strictly speaking are connected together. Formed by two islets of moderate height separated by a narrow channel, and surrounded by ten or twelve small rocks, they appeared inaccessible on all sides. A danger is reported to lie three miles south-east of the Apostles, but we could not see it.

"The most southerly of the Marion Group is Penguin Isle, formed by two very elevated and closely situated islets. It is six miles in circumference, and has the appearance of a sugar-loaf when seen from the north-east;—it abounds with seals. The eastern group is composed of the Possession Island and the Eastern Isle. To the south-east of the former one is a small bay, about a quarter of a mile in depth, and about half that in width, called the 'Bay of Navire.' It is situated at the termination of a deep valley, from whence a stream of delicious water runs into the sea. Being open to the east and south-east winds, which seldom blow with much violence, but sufficiently so as to produce a high sea and considerable surf, it is then very dangerous; but these winds seldom blow between November and the end of February. The north-west wind which comes down the valley is very violent, and when the north-east and south-west winds, which blow along the coast are strong, the surf breaks violently, and renders the communication with the land very difficult. Vessels intending to remain here any time, should ride with strong chains secured to the rocks on the shores of the bay, with the strongest chain to starboard, on account of the sea. The Bay of Navire is the best of all the islands, and the most frequented by fishermen: water is easily found there. Its latitude is 46° 26′ 18″ south, longitude 51° 50′ east, and the variation 35° west. Two miles to the north of the Bay of Navire is the Bay of Chaloupe, which offers no shelter except for boats. Three miles further to the northward is American Bay, tolerably large; a ship anchored in eight fathoms water at two cables' length from a rock on the starboard side of the bay on entering, is tolerably protected from any wind between north and south by the west;—the bottom is sand and rock. It is not advisable to stay long at this anchorage,—good water is found in a small river at the bottom of the bay. Three miles further north is Hebe Bay, where a vessel of that name was lost in 1831. It is small, and only fit for boats, which may find shelter under the lee of a rock in the middle of it. The western coast, with the exception of a reef lying three or four miles off the western point of Possession Isle, is clear of danger, but as the sea there runs extremely high, it should be carefully avoided under a light wind or uncertain weather.

"The Eastern Isle, the most eastern of all the islands, is very high and steep, access to it being only attained by a very small bay, situated on its north-west part. It is not favourable for fishing, although seals in great numbers find more shelter on its southern side than on any of the other islands. 'All these islands are plainly visible in clear weather, at the distance of twenty and twenty-five leagues, but like Prince Edward Island they are totally destitute of trees or bushes. Being nearly always covered with snow the only vegetation is grass, and a very hard sort of hollow stemmed moss, which grows on a soil nearly everywhere marshy, as well as on the sides of the mountains. This moss is of a reddish colour, and when squeezed emits a juice of the same colour. The islands are an asylum for a prodigious number of birds of several species, and three kinds of penguins, viz. the royal, the tufted, and the common.

"During our short stay at this anchorage, the barometer remained steady between 28·8 and 28·9, and the thermometer at about 45°. With the exception of a trifling fall of snow, the sea was still and the weather very fine." We shall follow the Heroine from these islands in our next number.

ÆOLIAN RESEARCHES.—No. XI.

(Of the seventeenth century.—Continued from p. 195.)

IT might likewise be inquired into, what prognostiques the seamen have of the weather, in all parts of the world, where they have different sorts of tempests: I am inform'd, that they also commonly observe, when the wind has been long in one quarter, if it passe into a quarter of the like quality, it is seldome constant, but reverts to the former: as suppose the east, if it change to the north, it frequently returns, but if it passe by the south, and follow the sun, the weather probably changes for some continuance, and not per saltum, as if it should skip from the east, to the west, or from the north to the south, for then it's seldome holding. It is not my design to multiply instances of this nature, I only offer at some few, to compare the mutations of the weather, with those of the wind; and questionlesse in a long tract of time, they might be reduced to some more certain rules, then those in Aristotle or Pliny; at least better calculated for an island; which being invaded on all sides by the sea vapors and winds, seldome enjoys the same serene face of the heavens, for any long time together; but is generally farre more obnoxious to all changes of weather, then the continent.

Next, what certainty there is in any astrologicall predictions, as by the age, or phasis of the moon, appearance, or conjunction of the starrs, &c. The rise of the Orion is more particulariz'd in authors; but seems to be rather a concomitant of other causes, then of it selfe, the efficient of winds.

So likewise, what information we might receive from all sorts of Trades; of what concernment it might be for vintners to have their cellar windows exposed to this, or that wind; since Michael Angelus Blondus in his book of Navigation, affirms, that the easterly, and paduanus in

his treatise of winds, that the southerly, have a very sensible operation on the wines in the cask. I have heard that some of the Vertuosi who pretend to great skill in ordering of cidar, find by experience, that certain winds set it a fermenting more then others, and render it turbid and thick; so that when they perceive them coming to such a point of the compasse, they critically observe the just time for botling it, to prevent these inconveniences. Rules have been prescrib'd to drugsters, and apothecarys upon this account, for the preserving their medicines: and happily some remarks might be taken from cabinet-makers, joyners, and other mechanicall artists, in the drying and seasoning their materials, that migh conduce a fuller history of winds.

Lastly, it would be no lesse beneficiall to the advancement of natural knowledge, to detect the falsity of those assertions, which have been long receiv'd in the world, from the great reputation of their authors. As for example, those which are set down by Aristotle, in the second of his Meteors, and in the book of Problems, where he endeavours to explicate severall phenomena of the air and winds; as in the first section, Probl. 8, 9, 10, 11, 12. 19. 23; and in the twenty-sixth section, Probl. 3. 9. 13, 14, 15, 16. 18. 21, 22. 25. 37, 38. 40. 42. 48, 49. 56. 58. which I mention more particularly, because I find my Lord Bacon, in his chapter concerning the qualities of winds, follows exactly the traces of Aristotle; and the generality of peripatetique writers have made it their *non ultra*, daring to adventure no further in these enquiries then was prescrib'd to them by that great genius of nature. So likewise the sentiments of Theophrastus deliver'd in his Book of Winds, and the rest of the ancient placits ought to be more thoroughly examin'd; before we receive them for infallible: many things in Pliny that relate to this argument, might be considerable, were they not suspected to be generally false. But since the too great veneration of antiquity, has impos'd so many vulgar errors on the credulous world, it will be the most generous design, first to free our minds from those prejudices we have taken up from Tradition, and upon this foundation to superstruct a more real and experimental philosophy.

I have only mention'd some few observations of that infinite variety, with which this fruitfull argument will entertain the curious: and so from their causes and qualities, proceed to the prognostiques of winds.

First we might enquire what the radiant, sanguine, pallid, nubilous, or other appearances of the sun signify to the predictions of winds.

What the age or eclipse of the moon, the pick'd or obtuse figure; the greater resplendency of the lunar horns, or the conjunction of it with other planets: likewise halos about the sun, or moon, the shooting or twinkling of starrs, &c., whether these may be accounted prognostiques of winds? In like manner, if the sun seem bigger then ordinary, or dart more refulgent beams; or if it rise in a cloud of the same colour, &c. All these different appearances of the heavenly bodys proceed chiefly from refraction, the visual rays being distorted by the density of the medium: and the collection of those rorid and nebulous vapors in the air, that cause these unusual perceptions in our sense, may first generate halos, and afterward descend in tempests, or winds.

Some prognosticate from comets and eclipses: and it would be farther worth remarque; what connexion there is between certain species of

thunder or lightnings, and wind; what predictions may be taken from the colours, motion, and as it were several storys, and ranges of clouds, or the suddain appearance of any single one above the horizon, in an extraordinary serene and peaceful sky, as we observe in tornados.

Others have been no lesse superstitious from the suddain paleness of fires, from the roaring of the sea, from the resounding of echos, or a noise heard from the shoars, which happens many times before the levants blow in the Mediterranean; or if there be a murmur in the mountains, or clouds without thunder; or if the sea seeme to rise, or swell, in those places where there is no sensible wind to irritate it. Some have employ'd their curiosity, in making prædictions from birds, and water-fowle, from ravens, and crows, the playing of porpuses and dolphins, the spinning of spiders, the leaping of fishes above the water, &c. Innumerable of this nature may be had from Aristotle, Paduanius, Petrus de Medina, Ricciolus, Fournier; though for the most part fallible and uncertain, we might offer at the philosophicall reasons of some prognostiques; but those, which have any evident connexion between the causes and effects, may be solu'd from the former discourses.

But (as I before noted) the great inequalities in the superficies of the earth, the several obstacles and repercussions from mountains, the different situations of the places, and mediums in which they blow, the distance of those countries from the poles of the world: Their respects to the course of the sun: whether they comply with, or resist the naturall motion of the air from east to west, &c., have so many intricate, and nice speculations, that it will be hard to lay down any perfect theory of winds. Yet certain it is, that most mutations which happen in the air either as to heat, cold, or such like qualities, are chiefly occasion'd by the diversities of winds; which, for the time they blow, are the soveraign lords of the atmosphere, and influence, and dispose of it as they please: Beside this, they help to sustaine, or dissolve the clouds; they ventilate and purifie the stagnant air, preserving it from putrefaction, and by this means are the greatest benefactors to mankind.

Their number and distribution, has been very different in the time of Homer, only 4, of Strabo 6, of Andronicus Chyrrestes, 8, though in strictness, we may suppose as many several sorts of winds, as points in the whole horizontall arch. The Romans came to 12: others have very aptly multiply'd their number to 16; 4 answering to the cardinall points of the heaven, and 3 collaterall, between every cardinall wind: but the moderns, since the encrease of navigation, have divided their compass into 32 points, known in these parts, by the Dutch or German names; and by the Italian, in the Mediterranean Seas.

The following prognostic of a storm occurs in an ancient ballad, entitled "Sir Patrick Spens," of Scottish history:—

"I saw the new moon, late yestreen,
Wi' the auld moon in her arm!
And if we gang to sea master,
I fear we'll come to harm."

Notes on Trinidad in 1803.—*By Capt. G. H. Columbine, R.N.*

(Concluded from p. 593.)

The Currents.—The western tropical currents occasioned by the trade wind being confined by the trending of the coast of South America; and thus thrown in collected force upon Trinidad, runs there with great strength; which is still further increased along its shores by the obstruction which itself presents against the free course of the stream; and by the Oronoque, which flowing through plains subject to periodical inundations, and emptying itself near this island, greatly increases the currents in its neighbourhood; particularly about August and September, when that river is at its greatest height.

The vast river Amazons, sometimes called Orellana; the name of the first Spaniard who explored it, collecting its waters from almost half the southern continent, may perhaps, though at the remote distance of 280 leagues, contribute something to its force.

These currents vary much in their strength, at different times without any apparent cause. It is said that they ran strongest in the declining quarters of the moon; but I could not discover any satisfactory proof of this idea. Adapting itself to the coast the current runs to the northward along the east side of Trinidad; and takes a western direction between Tobago, and point Galere; round which it runs with such force, that it is scarcely possible, for a square-rigged vessel to beat against it, round that point, although it is sometimes effected.

Along the north coast it runs close to the shore a few leagues as far as Rio Grande, but there it often quits the shore, and takes a W.N.W. course, increasing its distance from the land, till it gets to the northward of the Bocas, where it seldom prevails within five or six leagues, being repelled by the current which runs out of those passages. There the two currents blend and run to leeward. Along the south coast they always run to the westward about one and half or two knots near point Galgota; but as the opposite shore of South America contracts this channel towards point Icaque, their strength is much increased there, and may be reckoned generally at three knots, but often more. From hence this body of water disperses itself over the Gulf; and along the shore is subject to the influence of the tides; but in the middle it always runs to the northward towards the Bocas, where its course being again contracted, its velocity is proportionably increased. Having passed these straits the body of this water preserves its northerly direction for five or six leagues before it falls into the common course of the stream of the ocean which is there W.N.W., but it is to be observed that as soon as it has passed the Bocas, a considerable part diverges to the E.N.E., and either runs with some rapidity to windward, or so thoroughly destroys the effect of the western current, that a ship will seldom fail working up to Point Chupara with ease by keeping inshore. Often this easterly current extends a considerable distance further along the north coast, as we experienced in June 1804, when we worked up to Rio Grande from Huero in twenty-five hours, by help of the currents and occasional shiftings of the wind a few points

in rainy squalls, although the ship never went more than three knots, and was frequently becalmed. That part of the stream which goes out of the Boca Grande on the west side, turns round the north-west point of Paria, and runs down that coast with such velocity, that if a ship* bound to Trinidad falls in with the land to leeward of this point, though never so little, she must immediately stand to the northward at least as far as 13° lat. out of the greatest force of the current, and work up to Grenada, before she again attempts the Bocas. Even then, if she cannot lie S.E.b.S. at least, her reaching them will be very doubtful, and her best way will be to go through the passage between Kick-'em-Jenny and Carriacou, in order to weather Grenada before she gets into the strong lee current which prevails between that island and Trinidad, and renders it very difficult for ships to fetch Point Saline from the Bocas. In general they only reach about four or five leagues to leeward of Grenada.

These difficulties of the navigation which greatly obstruct the communication between Trinidad and the islands to the northward of it, render it an improper place for a naval arsenal. A ship disabled in action or otherwise under the lee of Martinique or the neighbouring islands, the common scene of naval operations, might indeed fetch Grenada from thence, but it would be scarcely possible for her to get to the Bocas; and if she failed, and fell into the lee current thereabouts, she would be fortunate to reach even Tortola.

A good ship will require from eight to twelve days to go from Trinidad to Barbados, which would be a great loss of time, in case she should be wanted there after refitting. To this is to be added the scarcity of water, in situations from which a fleet might be supplied. At present it would be impossible to procure sufficient for that purpose in any reasonable space of time.

Nautical Remarks.

The north coast of Trinidad is quite bold, with the following exceptions. Off Point Galere a rock to the eastward three-quarters of a mile, often visible; and I suspect that some sunken ones lie still further out, and also within it. From Point Galere to Reefs Point, one mile and a half, a reef extends about one-third of a mile from the shore; go no nearer than twelve fathoms. To the eastward of Paria Bay there are several rocks along the shore: the furthest off lie about a league to leeward of it, and one-third of a mile from the land. At night do not stand into less than fifteen fathoms. A reef extends about half

* Sunday, May 27th, 1804, stood from Point Saline to the Bocas, but though the ship lay S.S.E., and went on an average three and a half knots, yet we fetched five leagues to leeward of the Bocas. Stood to the northward again, but owing to calms under the lee of Grenada, we were not able to get up to the Carriacou Passage till Thursday night, when we attempted to get through, but were driven back by the current. On Friday morning we attempted it again, but as we lay only S.S.E. we could not weather the islands close to Grenada although we had weathered the Island Aux Jantes and Islet Ronde; we ran to leeward between Grenada and London bridge (a rock midway between Grenada and Islet Ronde.) The current sets with great rapidity here to leeward, not less than three knots. On Saturday morning, having a smart breeze, we again attempted the Carriacou Passage, and though the ship lay only S.S.E. ½ E. she got through very well, weathered Grenada about three leagues. At midnight made Trinidad, and on Sunday morning entered the Bocas.

a mile to the eastward of Point Chupara; and off the western part of this point a rock lies S.E.b.S. 700 feet from the land,—the sea breaks on it. The soundings on this side lie several miles off, and are almost regular. Four miles N.b.W. from Point Galere, there are twenty-two fathoms, half a mile further forty, sand and mud.

Three miles and a half	north from Point San Souci . .	23	fathoms
"	N.b.W. from Point Rio Grande	20	"
"	N.N.W. from Point Matelot .	17	"
Five miles and a half	N.N.E. from Paria	13	"
Two miles and a half	N.b.W. from the river Macapow	21	"
Three-quarters of a mile	from Point Chupara . . .	16	"
Five leagues	N.b.W. from Escouvas	78	"
Five miles and a half	north from Maraccas Bay . . .	43	"
Six miles and a half	north from Macaripe Point . .	60	"
Seven leagues	N.b.E. from Boca Mono	93	"

These depths decrease gradually towards the shore, very close to which are six, seven, and eight fathoms: the bottom being everywhere good, sand and mud, you may choose your anchorage on any part of this coast; taking the precaution not to go into the bays to leeward of Maraccas, as the high mountains prevent the wind there from blowing home, and the swell in such a case renders it difficult to manage a ship.

To anchor at Toco Bay bring Reefs Point E.b.S., and Harris house S.S.E. ¼ E., you will be in twelve fathoms muddy bottom, nearly three quarters of a mile from the land. But it is not a good place to lie at, as a great swell sets in. Harris's house is on a little hill at the north side of the bay, and is distinguishable, being the largest in that neighbourhood.

The Ulysses anchored at the following places:—Rio Grande Bay, in nine fathoms; the east end of the sandy bay S.b.E. ¼ E., and the north rocky point E.b.S. two-fifths of a mile. In nine fathoms and a half off Point Matelot, which bore E.SE., three-fifths of a mile. In fourteen fathoms off the river Paria. The island on the east side of it bearing S.b.E. ¼ E., half a mile. In Escouvas Bay in nine fathoms; Point Chupara N.E.b.E., Fort Abecrombie E.N.E., and the large house to the north of the bay S.b.W.

This is by far the best place for anchoring on the north coast. Maraccas bay is much larger, but is more subject to calms and sudden shiftings of the breeze.

Off I. Saut d'eau, in twenty-three fathoms, the body of the island, S.b.E., three-quarters of a mile, and the north point of Chaca-chacare open about 3° to the northward of Macaripe Point.

The land immediately about Point Galere is not above fifty feet high; it increases in height towards the west, and about Boca begins to connect itself with the chain of mountains which run along the whole north coast, from Rio Grande to the Bocas. At Rio Grande it is high water at 4h. 30m., full and change, and between this and Point Chupara the last two hours of the ebb, and sometimes the whole of it sets to the eastward along the shore.

Nautical remarks on the Bocas.

The great depth of water in the largest of the Bocas prevents anchor-

ing in any part of them, except very close to the shore. A ship may anchor any where in Boca Mono, but in deep water thirty or forty fathoms in the mid-channel. The beds of these channels are much deeper than the bottom, either within or without them, as if they had been thus worn away by the constant operation of the northern current which runs through them. In autumn, its rapidity at times is so great, that ships are frequently driven out again, after having entered one of the passages with a good breeze; during the rest of the year, its rate may commonly be estimated about two or three knots, but close to the south-west point of Chaca-chacare, I have always found it much stronger;* except in autumn, the tide of flood which sets through them into the Gulf of Paria, has a considerable power towards the top of high water in checking this current, and at spring tides I have seen the water perfectly slack in Boca Mono for an hour, and very nearly so in Boca Huevo. Boca Mono (the east mouth,) is only a-third of a mile over, and should not be attempted by a ship, except in a case of necessity, as the wind seldom blows in any certain direction through it.

In May, 1803, on our return from surveying the north coast, when we came off Boca Mono, the wind appearing to blow fairly through, I determined to attempt to pass it;† we effected it, but barely did it, being two hours before we got round Taitrons Point. It was noon when we entered the passage, and I think it impossible for a ship to get through early in the day, before the sea breeze is strongly made.

There are two good bays on the east shore of this passage, Taitrona and the Carenage. At the head of the latter a line-of-battle ship might lay secured to the shore, land-locked. Off the sandy shore which forms the east side of this bay, there is a bank which shoals suddenly; it will be necessary therefore to keep on the north shore if you should have occasion to work up so far. You may anchor any where at the south of this passage, and all along the south side of Mono. Deherts Bay affords excellent anchorage, and there is deep water far into it; we anchored off the mouth of it in fifteen fathoms, the south point bearing S.E.b.S., and found the bottom there so clayey and tough, that we were an hour heaving with every exertion after the cable was up and down, before the anchor would start.

Boca Huevo, Egg Passage, (or as it is now more commonly called Parasol or Umbrella Passage,) is safe to attempt to run in at, if the wind hangs to the north-east, as it will then probably blow quite through the passage; at any rate, if you cannot stem the current, you have ample room to back and fill your ship out again. Her Majesty's ship Dromedary was cast away in this passage, but as it was in a dark night, and they were strangers, it affords no material objection to it. Keep on the lee side to avoid being becalmed by the high land of Mono. We seldom used any other passage to enter the gulf; the shore is bold, but care must be taken to avoid a rock at the south-west point of Mono. Although it is not above a ship's length from the point, the eddy of the flood tide at the springs sets directly over it, and in a calm we narrowly escaped it. Boca Navios (the third,) may be safely entered, if when

* I have seen it run there more than five knots in April.

† In the Ulysses.

you haul round the west end of Huevo, (at a quarter or one-third of a mile distance,) you can lay up high enough to bring the south point of Huevo on your starboard bow, so as to have the current under your lee, otherwise it will be improper to attempt it, as the current does not run quite fairly out, but rather inclines down on Chaca-chacare. This remark must be attended to also in going out, and it will then be found a very good outlet, far better than the Parasol Passage, though I should prefer coming in from sea by the latter.

June the 5th, 1804, at 7 P.M., weighed from Chaguaramus, but falling calm, it was ten o'clock next morning before we got to the south point of Huevo, intending to go out through Boca Navios. Here we found such a strong current setting to the E.S.E. round that point, that being unable to stem it, we let her drive out through the Parasol Passage, which took up two hours to perform, owing to a number of eddies and opposite currents formed by the tide of flood setting in, and contending with the usual stream setting outwards. It was high water in the Bocas this day at about half-past noon, being three days before the new moon.

Boca Grande is of great extent and free from danger, except a small rock on which are three fathoms water, one-third of a mile west from the south point of Chaca-chacare. It is small and difficult to hit;—you will be clear of it when the whole of the high land of the peninsula at Chaguaramus is open to the southward of the rock, at the south point of Chaca-chacare. The altitude of the south-west mountain at that point is 7° 50′, taken from its top to the sea at its foot, in a boat anchored on the rock. It flows 2h. 30m. full and change.

The bay at Chaca-chacare is very spacious, but the wind in it is so baffling that we were obliged to warp in and out, and I apprehend the same thing would happen nine times out of ten to a ship going in there. At the head of this bay is a low sandy neck, which nearly divides the island into two parts; over this, we frequently launched our small boats into Boca Grande to fish. To the southward of this low neck, there are some rocks scattered along the shore, about a cable's length distant from it.

We anchored at the head of the great bay in thirteen fathoms, the low sandy neck bearing W.b.N. four hundred yards. The ground here is as tough as at Mono Island, and the mud which the cable and hawsers brought up was extremely foul and offensive.

Chaguaramus Bay is very spacious, and affords good anchorage,—the shores are bold except off the large plantation of Mono. Dert, which is situated in the principal valley on the north side, where a shoal extends six hundred yards from the shore;—its outer edge trends to the W.N.W. It is very steep. You may anchor in this bay anywhere, but the most convenient spot for a ship wanting to water is in twelve fathoms; when the east end of Gaspar Grande bears S.b.E., and the point to the north of Gasparillo is on with Taitrona Point. We lost an anchor in this bay, it having hooked the wreck of one of the Spanish line-of-battle ships, which were burnt here at the taking of the island,—it lays in seventeen fathoms. The western Diego Island, open 1° 10′ of Escondida Point, and the north extreme of Gaspar Grande W.b.S. A ship or two may water very well here. The tide flows here at full

and change three hours by the shore, but 3h. 30m. at the anchoring place; the flood sets to the eastward and the ebb to the westward. It rises about five feet. The flood runs only five hours and a quarter.

The Carenage would be an excellent harbour for merchantmen, but it is too shoal for men-of-war.

A mile and a half from Port Spain, the round white tower on a hill over it, bearing N.E.b.E. there are three and a half fathoms very soft mud but you may anchor anywhere. Your ship will turn the soft mud up long before she gets into a good place to anchor, which should be in about three feet more water than she draws. The water is always perfectly smooth. The tide flows here at full and change 5h. 30m. The flood comes from the west and the ebb from the south-east. The water is slack one hour and a half at high and low water.

The gulf of Paria is of great extent: the water is not very deep in any part of it, and the bottom very good sand and mud,—ships may anchor all over it. The soundings are not quite regular, though nearly so, there being some small banks with six or seven fathoms on them, five or six leagues from the shore. Running down the coast to the southward of Port Spain, observe that off a point of mangroves eight miles distant there are only two and a half fathoms one mile and three-quarters from the land. Naparima hill is easily known, it stands single on the shore, and is about 600 feet high. Seven miles to the north-west of it, there are two and a half fathoms two miles off the land, and this bank is steep with ten fathoms not far without it. Do not stand into less than four and a half fathoms between Point de Brea and Point Cedro. A rock called the Barrel of Beef, lays two-thirds of a mile W.b.N. from the latter. Between Point Cedro and the Gallos the shore is flat,—you may be guided by your lead.

Nautical Remarks on the East Coast.

A ship coming from the eastward, and making the body of the island, will see the mountain of L'Ebranche ahead of her, and a flat low shore extending from thence to the northward, bounded by a considerable range of high mountains.* To the south of L'Ebranche she will see another andmore extensive low shore at the extremity of which are the hills of Guaya-guayare. The soundings lie a long distance from the land, particularly at the south point and shoal gradually. The body of the island bearing W.b.N. fourteen leagues, fifty-six fathoms, and west eight leagues, forty fathoms.

Care must be taken to avoid a sunken rock which lies six or seven leagues from the land. I was not able to bestow time enough to hit on it; but having found a bank with only sixteen fathoms on it,whilst there was much deeper water round it, not far from the place where I was told to look for the rock, I conjecture it is somewhere on this bank; which lies S.E.$\frac{1}{4}$E. seven leagues from point Galere, and E.b.N. from the mountain of L'Ebranche; Manzanilla point distant six leagues and a half. There is no doubt of its existence; vessels have been wrecked

* The north mountains hereabouts may be estimated at 2,000 feet. Mountain of L'Ebranche 1,000 feet (by conjecture) as I have not measured it. Hills of Guay-guayare measured 760 feet. This may serve as a guide to know them.

on it. And I know people who have seen it at very low spring tides. It is very small, and the water is deep close to it. There is a rock about three-quarters of a mile east of point Galere, and probably some sunken ones further out.

A reef stretches off from point Manzanilla half a mile; and two miles to the S.E. of this point are three rocks on which the sea always breaks. Half a mile W.b.S. from them, is a rock so small, that it scarcely makes the sea break, and is not to be seen till you are close to it. There is also some foul ground nearly the same distance E.b.N. from the three rocks; the sea breaks on it in bad weather, you shoal in one cast from nine fathoms to four and three-quarters. The N.E. part of Mayero point should not be approached within a mile, whilst it bears about west, there are several rocks off it, and much broken ground. We found in one spot three fathoms nearly three-quarter of a mile off.

A heavy swell often sets in upon this coast, which makes it unsafe for strangers to approach it too close; unless they are in ships that can work off the shore, or have good anchors and cables. There are no points which can afford the least shelter to ships, notwithstanding which they may lie in safety at the following places. Off Salibia in six fathoms the island bearing N.b.W. 500 yards. The bay is shoal. At Manzanilla, in five fathoms, the leewardmost of the small rocky islands at the entrance of the bay bearing north-west 600 yards, and Manzanilla point N.N.E. This is by far the best anchorage on the coast, as a ship from hence will always have plenty of room to make sail, in case of necessity. A ship may lie in five fathoms good ground, off the mouth of the Ortoire; the outer rocky point bearing S.E.$\frac{1}{4}$.S. and the last rocky bluff to the westward bearing S.37° W. The mouth of the Ortoire south-west, off shore nearly one statute mile. A ship proposing to lie here any time should have good anchors and cables, as a prodigious swell sets in at times. Off the north part of Mayero Bay a ship may anchor in any depth of water, as it shoals very gradually.

The South Coast and the Serpents Mouth.

The only bay on this coast is Guaya-guayare; very spacious, but unfortunately so shoal that nothing can be sheltered in it, but small droghers. A mile from the land there are only three fathoms. Several rocks lie off point Galgota but all above water. After passing this bay you will have five fathoms a mile and a half from the land; in which depth you may run along the coast, taking care not to go within it. Three or four leagues to the eastward of point Icaque, a reef of rocks lies upwards of a mile from the land. Some red cliffs on the shore will nearly point out its situation. None of the south coast can properly be called mountainous, although it is very hilly, but these gradually diminish towards point Icaque, which is quite low and flat; the water deepens as you approach it, and you must keep close to the point, rounding it at a cable's length off, to pass between it and a small shoal to leeward of it. The tide sets with great velocity to the north-west. Close to the south-west part of this point there are eleven and twelve fathoms; it gradually decreases as you haul round to the northward. This passage into the gulf is called the Serpents Mouth, and

is infinitely better than that of the Bocas del Drago. I would recommend it to all merchant ships bound to Trinidad.

There is no danger whatever if they keep close round the south-west part of the point, and then steer N.b.W. about two miles, and they are certain of entering the gulf through this passage, whilst there are many instances of ships being unable to stem the current in the Bocas del Drago. Add to this, the south coast is little frequented by French privateers; because, if they should capture any ship there, the current would compel them to take her into the Gulf of Paria, and she would have a great chance to be re-captured before she got through it.

The Soldier is a large high rock W.N.W., near two leagues from the south-west part of Point Icaque. A long reef stretches from it to the south-east and south. There is a good channel between it and the small shoal, but it is safest to go between the shoal and the point, to avoid any possibility of being carried by some eddy of the current upon the reefs.

Light-House for Morant Point, Jamaica.

In our February Number we noticed the decisions of the Commissioners for erecting a light-house on Morant Point. Since the date of that notice, the Commissioners have determined to extend and enlarge their operations considerably. Having adopted the report of Mr. Alexander Gordon, and appointed that gentleman their engineer, they have now in progress in London, and almost ready for shipment, the cast iron tower, together with the gun-metal and copper lantern.

At the eastern extremity of Morant Point a site has been chosen for the light, sixty-five feet inland from high-water mark. Under nine feet of sand, and ten feet six inches above the sea, there is a hard solid coral rock admirably adapted for a foundation. It is easily approachable from Holland wharf, distant from the site about seven miles to the north-west. Good fresh water is close at hand, plenty of coral for lime, and hard wood to burn it with.

The tower is formed of cast iron plates from one inch to seven-eights thick: each plate is flaunched all round inside, and no plate exceeds a ton in weight. Ninety-three of these plates bolted together on the inside, form the shaft of the column or tower. Upon this column a cast iron cap is fixed which forms the floor of the light-room, where ths revolving machinery is placed; and it also forms the footway of the gallery outside. The footway is supported by cast iron brackets, and protected by a strong wrought iron railing. Five feet in height of the light-room or lower portion of the lantern is made of cast iron plates so as to form a polygon of sixteen sides, and upon the top of it is fixed the gun-metal frame of the lantern. Five feet in height of the lantern, is glazed with strong plate glass all round; and covered with a copper roof, surmounted by a suitable hood. The light is a revolving one, produced by fifteen Argand lamps, and directed by fifteen highly polished paraboloidal reflectors. The revolving machine shows three faces, each face having five lamps, and five reflectors. Each face throws five beams of reflected light in one, upon the eye of the seaman, and one revolution of the

machine exhibits to his eye three appearances of the light in a given time.

The speed of the machine is such that the successions of light and darkness shall be regularly maintained, and a ship cannot be deceived by any other light in the neighbourhood.

The lower portion of the cast iron tower is to be let into the coral rock six or seven feet, and the interior of that portion, and also of twenty feet above it will be filled in with hot lime, sand, gravel, and broken stone to form a concrete mass, and give stability as well as prevent vibrations: above this, floors are prepared at each ten feet high, and the whole is to be lined inside, and well painted white outside. Windows are provided for the tower, and ladder stairs, water pipes, soil pipes, and every other requisite for making the column comfortable and habitable.

Both the theory of electric currents and the practice had in iron steam boats, and in other iron structures warrant the safety of such a tower in case of lightning. From the top of the lantern to the base of the column it is one large and immeasurably abundant conductor; and at the bottom, to prevent the foundation being destroyed by the passage of electricity, Mr. Gordon has prepared an artificial metal conductor for carrying the current into the sea.

We cannot help observing here the strange want of knowledge in a well established branch of Natural Philosophy, whi h induced or permitted the fixing of a glass nob upon the top of the splendid new light-house at St. Katharines, Isle of Wight, by the Trinity House of London. The said nob was actually placed there in the year 1840, as a repeller of lightning. We have been told that the appendage has since been removed.

The difficulties offered by the locality of the light at Morant Point, were numerous and great;—the passage of the materials over a lagoon, —the distance from any other habitable part of the island,—the necessity for European workmen to erect the tower and light apparatus,—the insalubrity of the climate, excepting only for the cold months of the year,—the limited funds at the disposal of the light-house commissioners of the island,—and the artificial altitude requisite for elevating the light upon so low a natural site. These and numerous others have all been well overcome. The light-house will be shipped, and the requisite workmen will be embarked from London, so as to arrive in Jamaica on or a little before the 1st of November this year, and the whole will be then erected under the direction of Captain St. John, the island engineer, and the light will be exhibited about the end of December.

In the year 1780, the sea, driven by a hurricane, laid bare the rock on which the column is based; and to anticipate such another hurricane, Mr. Gordon is to fix the tower well into the rock, and has provided a set of ladder steps for ascending to the door, in the event of the outside staircase being carried away.

PORT NICHOLSON.—*Extracts from a letter from New Zealand, May*, 1841.

THIS is your November month at home,—that is to say transversing the order of the year, and your month of April is not to be compared with it: generally a moderate gale steady from the south-east, or squally weather from the north-west with rain. This is our winter, and is attended more with wet than cold, although during the last week we have been chilled by a south-easter attended with rain; the thermometer as low as 43°, it rarely falls lower.

As a harbour, Port Nicholson stands pre-eminent,—in saying this be assured that there is no *puffing*; the land, as an *agricultural district*, far different; the forests are so dense, and the price of labour so enormous, that it cannot pay at present. We tried it on a small scale, but it would not answer,—50*l.* an acre will not clear it and put in a crop. Many farmers have arrived here, and are preparing to set to work with a good will, but unless they be men of capital, they will probably be ruined. Their ruin will eventually perhaps turn out the fortune of their successors, a consequence, we believe, usual in first settlements, where the land was to be cleared of timber.

Land at present is comparatively cheap, notwithstanding it may appear in England to bear a great premium, the price from 30*l.* to 70*l.* per section of 100 acres,—title undisputable, now that the Company is taken in hand by government.

Stores, wharfs, &c., are rising and being formed rapidly. We have one which admits a schooner of 100 tons, lying close alongside.

Every week brings forth something new; coal has been discovered not far from this place, and fortunately, it appears to be excellent, it is sold at the rate of 2*l.* 10*s.* per ton. The forests abound with first-rate timber for ship-building, joiners' and millwrights' work. Of dye-woods only two have yet been met with,—colours, *jet black* and red.

The cowdie, white pine, tortora, riva riva, remo or red pine, manonka, ratta, mogey, and others, are excellent woods; there is little doubt these will prove articles of export:—but that which will "send" New Zeeland "ahead," is the cultivated flax, a commodity so extremely valuable to a country like England, that we may anticipate a very favourable reception of it there. Attention has already been directed towards it as an article of traffic, and the house of Ridgway has invented a machine for producing it in bulk."

The *British Cyclopædia* speaks thus of the New Zeeland flax.

"Flax lily is the *phormium tenax* of Forster, an economical sedge-like plant, found in New Zeeland. It is an hexandrious herb, and belongs to the natural order *asphodeleæ*. It takes the name from being employed by the inhabitants, where it grows naturally, in the manufacturing of baskets, and it has been introduced into Europe as a fit plant to take the place of hemp; as the fibres obtained from its long leaves after maceration, are said to be more tenacious than any other vegetable fibre known. Whether it will be found hardy enough for the climate of Britain is not yet ascertained, but if it could be naturalized and cultivated, so far as to furnish material for the manufacture

of ship's cables, it would be a valuable acquisition. The imported phormium flax has been manufactured and tested with the best hemp, and found of superior strength."

A Visit to San Lorenzo.

Sir— I have been induced to send you the following notices, trusting they are not of a nature unsuited to your Chronicle. The virtues of a man and of a Christian, never shine so much in the sailor as when he pays a last tribute to the worth of a departed messmate. If his friend have died in a foreign land far from his own native country, he is loth to depart without raising some humble inscription to mark the spot. I met with several of these inscriptions, some of which I copied, on the island of San Lorenzo, which forms a natural breakwater to the noble harbour of Callao, a port of Peru. It is the most desolate place conceivable. On it the sun shines to no purpose, and refreshing dews visit it to cheer no herbage: not a weed grows on it. The island, which is about four miles in length, is very steep, its highest point about 700 feet above the level of the sea and almost too perpendicular to climb. One dreary sandy valley on it, which faces the town of Callao, has been chosen as the burial place for the seamen of different nations that happen to die in the port. In her Majesty's ship S—— we used frequently to take a trip to this island, for the purpose of exercising our men, firing great guns, small arms, &c., and to paint and refit ship. One day I went to visit the burial-ground, and thinking I might fall in with something worthy of note, I took the precaution to carry pencil and paper with me. I found about, at a rough guess, seventy or eighty graves there, and nearly half of them had records of the inhabitant. These were English and American. The inscriptions were painted on boards of the shape of tomb-stones, and at a distance would not be distinguished as otherwise,—a large cross was painted on each, for unless this is done the native fishermen carry them off for firewood. To despoil these they look upon as sacrilege, and this painted symbol besides, they look upon as shewing the erectors to have been Catholics.—The three following I copied.

Sacred
to
the Memory of
William Edwards, late Royal Marines
of H.M.S. "Harrier," Callao,
who departed this life November the 29th, 1837,
Aged 26 years.

I'm here at rest from busy scenes,
I once belonged to the Royal Marines,
I'm now confined within *those* borders,
Remaining here for further orders

This, I think, carries somewhat of originality with it! Another,

Sacred to the Memory of
three seamen, who departed this life
on board of H.M.S. "Blonde,"

May 1835.—Namely, John Froud the 9th, (aged 24 years,)
Edward Pearn on the 23rd, (aged 31 years,)
James Oldridge on the 30th, (aged 29 years,)
Also, Robert Beecroft who died May 1st, 1837, (aged 15 years.)

Tremendous God—thy sovereign power,
Cut from us like a withered flower
These seamen in their bloom;
In tribute to their memory dear,
Their shipmates have interred them here,
And raised this humble tomb.

The lines, taken as poetry, of this are not bad, but there is much nonsense in them. Their shipmates in the *interring of them*, could pay no tribute to their memory, which it would seem their lines imply by the putting *have* instead of *having*, and in the last line *and* for *have*. It should be,

In tribute to their memory dear,
Their shipmates having laid them here
Have raised this humble tomb.

Here is a third,

In Memory of
Blythe Girlye,
who departed this life
February the 28th, 1837,
aged 20 years.

Short was the summons to the dreary tomb,
Of him who sleeps beneath this lonely *sod*,
The friend he trusted crushed his early bloom,
And sent him unprepared to meet his God.
No kindred wept above his youthful bier,
And strangers' *hands* have placed this tribute here.
United States Schooner Boxer.

This poor fellow had been murdered in his sleep, by one who had been his friend, and who had stabbed him in a rage of jealousy, thinking he had made friends with another and slighted him. He was hung at the yard-arm of U.S.S. Peacock, some months after. *Sod* seems ludicrous here, as no vegetation exists, as I have before said, on the island.

Maldon, Essex. M. X. M

Biographical Notice of Admiral Sir Robert Crown.

The sovereigns of Russia have been particularly fortunate in the characters of the British officers who have from time to time attached themselves to the Russian navy, which within our own times could boast a list of English officers, not excelled in merit or in valour by their more fortunate countrymen engaged to fight the battles of their native land; and so great was their zeal to set an example to the Russians under their command, that fourteen out of thirty-six English officers were killed or wounded in the Swedish war in less than two years.

The great Catherine, from an early period of her reign, adopted the policy of forming her navy on the model of that of England, and for that purpose confided the construction of her ships to Mr. Yeames, a very scientific builder, and the command of them to the late Admiral Sir Samuel Greig, whose merit she early appreciated, and who justified her patronage by his signal victories over the Turks and Swedes;

and whose son, Admiral Alexis Gregg, is the worthy representative, in all his estimable qualities, of his excellent father.

The year 1790, when Catherine was disappointed in her aim of crushing the Turks, by the vexatious interposition of Gustavus of Sweden, rallied round her flag a bevy of as distinguished a set of young English officers* as could well be assembled; their own country being then in a state of profound repose, their ardent spirits could not submit to the inglorious routine and slow progress of promotion in time of peace, and they therefore were readily allured by the offer of one step of added rank held out by Catherine; while her fascinating condescension and profuse dispensation of honours inspired them with genuine zeal in her cause.

The effect of the Swedish war was to save Turkey, but the naval engagements in the Baltic were otherwise indecisive, although on every occasion the English officers, as far as their personal influence or example could extend, amply sustained the national character, and several fell in exertions of heroism worthy of a better cause. Capt. Treveneu, a name still remembered and regretted in the British service, fell in one engagement, while within a few days his brother-in-law, Capt. Dennison, was killed in an attack of gun-boats, while serving under the famous Prince of Nassau, against the Swedish galley-fleet, commanded by the king in person.

Capt. Marshall also lost his life on the same occasion; being mortally wounded, his ship sunk under him, and went down, colours flying: and I well remember the dread experienced at St. Petersburg, on account of the tremendous roar of cannon distinctly heard there, with all the fearful speculations it gave rise to, and sometime afterwards I witnessed a portion of the effect of it on Capt. Elphinston's ship, which was towed into Cronstadt harbour, perforated with balls, many of which were to be seen embedded in her sides. In the battle of the galley-fleet, a spirited young Irishman of the name of Macarthy was second in command of one of the Russian galley frigates (commanded by Commodore Dennison, who was killed, as before alluded to, in the same engage-

* To enumerate the list would, at this time, be no easy task; it comprised, among others, Captains Candler, Green, Hamilton, Aikin, (son of the very respectable actor of that name,) Halliday, Rider, and Thesiger, the three latter of whom afterwards returned to the British service, and were deservedly promoted to rank and active service. Captain Nicholas Tomlinson, then a lieutenant in the English navy, also went to St. Petersburg, being recommended to that court by the Russian Ambassador, and made a tender of his services, which were accepted, but owing to some demur on his part as to taking the oaths required, his engagement was not completed, although his name was immediately included in the Russian navy list, and he was therefore fortunately at liberty to return to England at the commencement of the French war; and having succeeded, in 1793, in obtaining the command of a small vessel, distinguished himself by his extraordinary activity and enterprise on many occasions, as recorded in the Gazettes of that period, particularly in the recapture of the Oporto Convoy, and other services, for which a piece of plate was voted to him by the Committee of Underwriters at Lloyd's, promotion rapidly followed, and he is now as a Post Captain, high on the list, intitled to look forward to no distant day for the honourable rank of a British admiral, as the well earned reward of his labours.

[This anticipation has been verified, and Admiral Tomlinson at a green old age is enjoying in the bosom of his amiable family, and in a circle of attached friends, the most pleasing solace for his past labors.—Ed. N.M.]

ment,) which entered so warmly into the action that she found herself surrounded by the whole of the Swedish galleys, on board of one of which, was the King of Sweden, and Sir Sydney Smith; in this situation 219 men out of her complement of about 300, were killed and wounded before she struck—a carnage so tremendous, that when Sir Sydney boarded her, he reproached Macarthy with not having sooner surrendered, upon which that gallant officer observed, that it never should be said that an Englishman was the first to strike a Russian flag, and that he would sooner, than have done so, perished with every soul on board. This gallant reply was so much admired by Sir Sydney, that he desired Macarthy to consider him for the future as his friend, and that should they ever meet in the British service, he would use his best endeavours to forward his promotion, and which he was afterwards enabled to do. By a singular concatenation of events, this same Macarthy was the means of introducing the celebrated Capt. Wright (who was originally sent out to St. Petersburg by the house of Longman and Broderip, as a vendor of music and musical instruments on commission) to Sir Sydney Smith, by whom they were both received as midshipmen on board the Diamond frigate, commanded by him, at the commencement of the revolutionary war, and both afterwards died prematurely; Wright being murdered in the temple at Paris, and Macarthy being lost while cruizing off Jersey, in a gun-vessel under his command. It may be necessary here to observe, that Wright, although on a mercantile mission at St. Petersburg, had before duly served as a midshipman in the British service, and had been an acting lieutenant at the siege of Gibraltar, where he was particularly noticed for his personal strength, and daring courage.

Admiral Tate was at this period the senior British officer in the Russian service, and was highly respected for his private worth and professional talents. He died full of years and honor, and was succeeded by Admiral Crown, whose more active service had obtained for him greater distinctions than any ever hitherto bestowed by Russia on a foreign officer, he being at that time full Admiral of the Imperial Fleet, and decorated with almost all the orders of the empire. I feel persuaded that neither yourself or your readers will consider a page or two misapplied, in giving some details of the honorable manner in which Admiral Sir Robert Crown has thus raised himself from a comparatively humble origin, to rank and honors, without exciting displeasure in his own, or jealousy in his adopted country.

Admiral Crown was originally from Scotland, and at a very early period of his life entered into his Britannic Majesty's service in India, where he served as master, first in 1778, under the command of Capt. Williamson, in the Cormorant sloop, in the Red Sea, and afterwards under command of Sir Charles Maurice Pole, on her voyage from Madras to England.

Commodore Johnstone who had opportunities of ascertaining the zeal and intelligence of the young candidate for naval honours, gave him a commission as lieutenant of the Diana frigate, in which capacity he served under Captains Home, Edwards, and Calder, nearly three years, part of that time as first lieutenant. Great interest was exerted by all who knew him, to induce the Lords Commissioners of the Admiralty

to confirm his commission, or even to permit him to serve as a midshipman, for which he himself earnestly petitioned, but these applications were peremptorily rejected by Lord Howe, the then first lord;* and Mr. Crown felt himself thus compelled, as the only alternative left to him for pursuing the profession of his choice, to make a tender of his services to the empress of Russia, who readily accepted them, and immediately gave him a commission equal to that of commander in the English navy, and appointed him to the command of the Morewry, a boat of twenty-two carronades, in which after a very close and sharp engagement, he captured the Venus, a Swedish frigate of forty-two guns, on which occasion the empress bestowed on him the rank of post captain, with the command of that frigate, and conferred on him the order of St. George. Whilst in the Venus, he distinguished himself in a particular manner in the action of the galley fleets before alluded to, and was very near taking the king of Sweden himself, prisoner, as he captured the galley in which the king had embarked, and which his majesty only left at the suggestion of Sir Sydney Smith, who said he was sure, from the gallant seaman-like style in which she bore down upon them, that the Venus was commanded by an Englishman, and that the king would do well to avoid the consequence, upon which they took boat and went on board another galley.

Soon after this, Capt. Crown took the Rhetvizan of sixty guns, also two cutters, eight row-boats, and four galleys, and burnt and sunk several others; for which he was promoted out of rotation to the rank of Post Captain of the first class. He likewise captured thirty-seven merchantmen, some of them richly laden, and brought them all safe into Elsineur: for these essential services he was rewarded with the third order of St. Vlademir, and an annual pension of 1000 silver roubles

* The unabated affection entertained by Admiral Crown for his native country, and his deep sense of the neglect experienced by him at his first outset in life, are forcibly expressed by him in a letter to a valued friend, from which the following is an extract.

"My wife is become feeble; I will not say peevish, from experiencing a decay of those natural advantages attached to youth and strength; she is less a philosopher than I am, and often calls me an iron man; well she may, for I have had many a hard stroke on the anvil of fate. A pilot who last sailed with me used to exclaim that he had never seen a man so grey endure so much fatigue. You were right in your conjecture relative to my son Plato, who was one of the boarders who carried the French schooner off the coast of Africa. I am very proud of my son having done his duty, and hope he will not be wholly like his father, though I have infinite reason to be grateful to his Imperial Majesty, when I compare his great goodness to me with the injustice done to my services by the country which gave me birth. After having most faithfully served it in the East and West Indies during the American war, in the most perilous and difficult duties, sometimes without a shoe to my foot on pointed rocks, sometimes nearly naked on the burning sands of the shore of the Red Sea, leaving deep traces of the effect of these hardships on my body and limbs, being the only vouchers remaining to me of my indefatigable endeavours to serve my country, which, when it had no farther use for me, flung me on shore naked and poor on Portsmouth beach, and told me afterwards by the voice of Howe, that I might go and seek my bread as I could. This was all the humanity, justice, and mercy, which a happy country would bestow on one who in his stations of master and lieutenant, had served it faithfully, and who still loves it dearly and forgives it freely.

"I fervently adore the kind Providence which conducted me to this land where, though a foreigner, I was esteemed worthy of confidence beyond my merits, which, feeble as they are, have ever constituted my only means of advancement."

was bestowed upon his wife, who had been his faithful companion in his various engagements and cruises; and who with a presence of mind and intrepidity uncommon in a female,—had frequently taken upon herself to fulfil the functions of a surgeon when, as was often the case, there was no such officer on board, in alleviating the distresses of the sick and wounded,—prisoners as well as those of her own ship.

On the accession of Paul, Capt. Crown was promoted to the rank of a Rear-admiral, and received the decoration of the third order of St. Anne, and the order of Malta. Under this sovereign he was placed for a time in the delicate situation of holding a commission under a power at war with England; but neither himself nor any of his countrymen hesitated for a moment in their duty to their still beloved king and country. Paul, with all his eccentricity of character and temper, attempted no violence on their feelings, and the only privation they underwent was that of command during the short period of the unnatural difference between the two countries.

On the happy accession of Alexander, Admiral Crown was fortunate enough to conciliate the particular favour of his Imperial Majesty, who has successively conferred on him the first order of St. Anne, the second of Vlademir, and the full order of Alexander Nefsky. The Admiral had the command of the fleet that transported the Russian contingent in June 1817, from Calais to St. Petersburg, in effecting which an opportunity occurred of evincing his prompt and decided character, and unshaken attachment to his native country.

On his arrival with the squadron in Calais Roads, he sent large orders for provisions, good porter in particular, to various contractors on the opposite coast, who had supplied him while lying in the Downs, in the year 1814. The contractors, not forgetting the handsome manner in which, on that occasion, they had been paid, were not tardy in executing his orders; and, accordingly, a flotilla consisting of almost every description of small craft, was soon collected to convey the provisions to the Admiral's fleet, and they arrived off the fleet the day on which the orders were given; but as the weather was squally, they could not that night venture alongside the respective ships, and consequently, as was naturally to be expected, took shelter in Calais harbour. In the morning, as soon as the tide served, they weighed anchor in order to depart, when they were immediately surrounded by a great number of custom-house boats, and notice was given them, that not one of them would be allowed to leave the port without first paying the duties on the cargoes, the same as if they had been landed. This unexpected demand created amongst the victuallers the greatest consternation; they, however, contrived to despatch a six-oared cutter to the Admiral, to whom they communicated the intelligence, and requested his interference. Admiral Crown instantaneously despatched an officer on shore, with a letter to the Governor, demanding the immediate liberation of his victuallers, threatening, in the event of a refusal, to bombard the town; and gave the Governor one-quarter of an hour to consider of it. The Governor requested an hour, in order to send a telegraph despatch to Paris, for instructions how to act on so novel an occasion; to this the Admiral would not agree, and instantly made (clapping springs on his cables) preparations for bombarding the town; the Governor perceiving this, ordered the victuallers to be released.

Admiral Crown came to London to meet his Imperial Majesty and the Duchess of Oldenburg, on whom he was in constant attendance, and was made known by them to the Prince Regent, by whom he was most graciously noticed, and his foreign titles recognized by being introduced and addressed as Sir Robert Crown.

On his return fresh honours awaited him, as appears by the following extract from a letter written by him to a brother officer in this country, and which at the same time gives some further account of his family:

"I think that I mentioned to you last year, that his Imperial Majesty had been graciously pleased to decorate me with the first order of St. Anne, and the second order of St. Vlademir, and that I had the honour of H. I. M.'s company, accompanied by his amiable consort, and the Empress Dowager, with all the Imperial family, who dined on board my ship, before I went to sea this year,--a distinction never before conferred on any naval officer.

"The Emperor has again done me that honour, accompanied by the King of Prussia, and the Prince Royal, with their suite; and I was delighted to see the Imperial and Royal visitors, on both occasions highly pleased with their reception. Soon afterwards, while I was at sea, a courier came on board with the order of Alexander Nefsky addressed to me, and I felt sensibly how inadequate was my merit for these honourable distinctions. His Imperial Majesty is all goodness to me, and his favourable opinion of my professional services far exceeds all the efforts of my poor abilities to deserve; the only return I can make for these distinguished favours, in addition to the acknowledgements of a grateful heart, is to be ready at all times to expose my hoary locks to war or tempest in his service, in the hope of being able to achieve something that may justify his Imperial Majesty's condescending partiality.

"In answer to your friendly enquiries respecting my children, I have to inform you that my eldest son George is on the half-pay list as a Lieutenant of Marines in your service. Plato Valerian, my second son, is a mate in the Cherub sloop, stationed off the coast of Africa, and I trust in the benevolence of Lord Viscount Melville, that he will soon have a commission. Edmund, my youngest son, is on board the Phæton frigate, Capt. Dillon, as Midshipman;—he, poor boy, has a very distant view for promotion, being in his nineteenth year, and having served only four years. My only daughter Anna has lately married a physician, a native of Russia, and attached to the naval service. I had one other son of very superior abilities, and the most promising and sweetest boy that ever blest a parent's care; my Camperdown fell by the blast of that cruel disorder the yellow fever, on the island of Trinidad, at seventeen years of age, while serving as a Midshipman on board the Scamander English frigate."

Nothing remains to be added to these particulars, except that the Admiral's son Plato Valerian has al o since fallen a victim to the yellow fever, on board the Cherub, on the coast of Africa; and that his lady died lately. He suffered most acutely in mind from these afflicting dispensations, but happily his own health was unimpaired, and he enjoyed until his death, what he valued still more, the undiminished favour of his munificent Patron.

On the Longitudes of the principal Maritime Points of the Globe.

By Lieut. Raper, R.N., Sec. R.A.

(Continued from p. 473.)

178. *Pt. de los Reyes.* Extremity of cliff.

Espinosa 116° 40′ Cad. or 122° 58′ Gr.
Beech. D.L. *San Francisco.* Obs. 36′ 20″ . 123° 0′
Which we adopt.

179. *C. Mendocino.*

Malasp. according to Oltmann's, 124° 29, adopted by M. Daussy; Vancouver 124° 10′. Espinosa makes the D.L. between this cape and Pt. de los Reyes, 1° 32′; this applied to the latter position gives 124° 32′, which we have adopted.

180. *C. Phipps.*

Espinosa I. p. 158, 134° 30′ 15″, Cad. or 139° 47′ 50″ Gr.
The point is 0·5′ N., and 4·5 miles W. of Pt. Turner, and thus we obtain a correction of + 1′ on Espinosa's position, which we shall apply to his other positions here for consistency.

181. *C. Scott.*

Vanc. chart, 1798, 231° 39′, or 128° 21′ W.
I have added 6′ to this, which gives 128° 27′, but the position is very uncertain.

182. *C. St. James.*

Vancouver chart, 1798, South rock 130° 51′.
I have adopted 131° 0′, the position uncertain.

183. *C. Edgecumbe.*

Vancouver chart, 1798, 224° 26′, or 135° 34′ W.

Espinosa Oltmann's II., p. 462, adopted by M. Daussy 135° 49′ 41″
This adding 1′ gives 135° 51′. Which we adopt.

184. *C. Ommaney.*

Vancouver 184° 23′.
Malasp. Oltmann's II., 464, 134° 32′ 43 ′.
Adding 1′ to this gives 134° 34′, or 11″ to add to Vancouver's long.

185. *In the Aleutian Islands,* we follow Admiral Krusenstern, and in the coasts to the northward, Capt. Beechey, having nothing to add to the determinations of these authorities.

Having now considered Europe, Africa, South America, and the west coast of North America, we propose to proceed in the next number to Madras, in consequence of the new determination of this important position.

The Variation of the Compass.

Royal Observatory, June 20th, 1841,
Magnetical and Meteorological Department.

Mean Magnetic Variation for June 1841=23° 16′ 16″.

MEAN MAGNETIC DIP.

	At 9 A.M.		At 3 P.M.	
1841—March	69°	6½′	69°	5½′
April	69	12½	69	10
May	69	12	69	21
June	69	12	69	6½

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

Rules and Regulations of the Trinity House for the admission of Brethren.

At a General Court of the Corporation of Trinity House of Deptford Strond, on Thursday, 12th February, 1835;

It was resolved, that all regulations which have been at any time established respecting the qualifications and admission of Younger Brethren and Candidates, and the qualification and election of Elder Brethren, be rescinded, and that the following Regulations be established in lieu thereof; viz.

That any person desirous of becoming a Younger Brother shall be admissible at the pleasure of the Court, upon the proposition of any one Elder Brother, and without ballot, as heretofore.

That the thirty-one Elder Brethren shall consist of not less than twenty persons, bred in the maritime service of the United Kingdom, who shall be deemed the acting Elder Brethren; and the remainder of either Ministers of State, Naval Officers of high rank, or other distinguished characters, who shall be considered Honorary Brethren, and not required to take active part in the discharge of the duties of the Corporation, although not restricted from so doing, should it be their pleasure to attend the Courts or Boards.

That any Younger Brother desirous of being admitted a candidate for the situation of a Maritime Elder Brother, shall, on notifying the same to the Deputy Master or other Member of the Court, be questioned as to his eligibility, by maritime service, to be elected an Elder Brother; which having been ascertained, the proposition for his admission to the List of Candidates may be made to the next Monthly Court, when the proposer and seconder shall declare that, to the best of their knowledge and belief, the person proposed is strictly eligible according to the regulations hereafter stated, so far as they relate to maritime service; and at the ensuing Monthly Court a ballot shall be taken upon that proposition, and no person shall be admitted a candidate against whose name there shall appear two negatives upon the ballot.

That no Younger Brother shall be eligible to be placed upon the List of Candidates to fill the office of an Elder Brother in room of any of the Maritime Members, who shall not have attained the rank of Commander in his Majesty's Navy for at least four years previously, and have served as such afloat during part of that time, or shall have served as Master in the Merchant service on foreign voyages for at least four years.

That no candidate shall be eligible to be elected an Elder Brother, on a

vacancy occasioned by the death, resignation, removal or otherwise, of either of the Maritime Members who shall at the time be in the command of a vessel in His Majesty's Navy, or who, having been admitted a candidate from the Merchant service, shall be in the command of a merchant vessel, or shall at the time hold any commission or warrant in his Majesty's Navy, or shall be in the employ of any public body, corporation, department, or individual whatsoever (except as director or member,) or in any way under the control of the same, nor if he be at the time a broker, wharfinger or shopkeeper.

That if any of the Maritime Members shall accept either of a command in His Majesty's Navy, or shall take the command of or any situation in a merchant vessel, or shall accept of any appointment under any public body, corporation, department or individual whatsoever, so as to be under the control of the same (except as a director or member,) or shall become a broker, wharfinger or shopkeeper, he shall be considered to have fallen within the terms of the charter, which provide for the displacing of Elder Brethren, and shall be displaced accordingly; and the Elder Brethren shall thereupon proceed to a new election in the manner hereinafter provided, and shall elect either the person so displaced or any other who shall be eligible, according to the foregoing regulations.

That on the death, resignation or removal of any Elder Brother, the vacancy thereby occasioned shall be notified to the next Monthly or Special Court, when it shall be determined whether the vacancy shall be filled by an Honorary or by an Acting Member, and a time appointed for a Special Court to be convened for the election of a successor, at such interval as shall allow of ten days' notice thereof being given.

That at the Court convened for the election of an Elder Brother, if it shall have been resolved to fill the vacancy by an Honorary Brother, the election shall be made by the majority of voices of the Elder Brethren present; but if it shall have been resolved that the successor shall be chosen from the maritime service, to take active part in the discharge of the duties of the Corporation, then the book containing the List of Candidates shall be handed by the Secretary to each Member present, beginning with the junior, who shall make one scratch against the name of each of three eligible candidates; and the names of the three candidates which shall have the greatest number of scratches, shall be placed on the balloting box and be ballotted for, and whoever has the greatest number of balls, provided such number be that of the majority of the Brethren present, shall be by the Master or his Deputy declared duly elected; but if the balls are so divided that such majority is not given to either of the three, then the names of those two who shall have the greatest number shall be again placed on the box and balloted for, and whoever has the greatest number of balls shall be in like manner declared by the Master or his Deputy duly elected; whereupon the Court shall be adjourned to a subsequent day, upon which the Elder Brother so elected shall attend to be sworn, and to take his seat at the Board. But if in this proceeding it be found that the balls are divided in equal numbers, either upon the first, as regards three, or upon the second ballot as regards two, the Master or his Deputy shall adjourn the Court to a future day, when the ballot shall be renewed, and the election made in the manner hereinbefore directed.

(Errors excepted.)

Trinity House, London, 9th July, 1835. J. HERBERT, *Sec.*

WESTERN AUSTRALIA.—*The new colony of Australind.*

(From the Bombay Times, June the 19th.)

BY the Parkfield, Capt. Whiteside, arrived in Bombay last week, after a remarkably quick passage from Western Australia, we have accounts from the

new settlement of Australind to a late date. This new settlement is situated on the western coast of Australia, about eighty miles south of Swan River, and immediately to the northward of Geographers Bay. The latitude of the anchorage at Port Leschenault, as determined by Capt. Whiteside, is 33° 18′ south. At this place is a beautiful inlet or backwater, running to the northward parallel with the coast (from which it is separated by a narrow slip of land) for about ten miles, on the eastern shore of which, and about six miles from its mouth, the chief town of the settlement, to be called Australind, is to be established. A few emigrants had previously settled in this district, and her Majesty's Government having at length determined to apply to the old colony of Swan River the principles of colonization which have had such eminent success in Southern Australia, a company, called the Western Australian company, was formed in London last year to co-operate in these views, by the investment of capital in the acquirement of land, and the conveyance of settlers and emigrants to the most favourable point which could be selected upon the western coast of New Holland, within the boundaries and under the jurisdiction of the colony of Western Australia. The most prominent feature of the new principle of colonization is, as our readers are aware, the setting apart a portion of the proceeds of the sales of land for the exclusive benefit of the purchasers, in improving the value of the land by defraying the cost of emigration to the settlement, and the construction of public works therein.*

With these objects in view, the company purchased extensive blocks of land near Leschenault, in the maritime county of Wellington, where, as we have stated, some few settlers had already established themselves, one of which tracts, containing more than 100,000 acres, is beautifully situated on the inlet mentioned above, which is formed by the embouchure of four rivers, all of which pass through the property or form its boundary. They also towards the end of last year, chartered the Parkfield for the conveyance of a body of colonists to the new settlement, under the auspices of the company, and in charge of their chief commissioner M. Waller Clifton, Esq., F.R.S. Accordingly, this gentleman, with his family, accompanied by an efficient surveying establishment, a skilful medical officer, and about one hundred settlers of various grades, embarked in the Parkfield in December last, and after a fine passage, landed safely at Port Leschenault, on the 18th of March.

It appears that owing to some misunderstanding between the company and the colonial office,—of no interest to our readers, and which would occupy too much space to detail,—scruples were entertained by Lord John Russell respecting the right of the company to this district, in consequence of its previous occupation by another party. An arrangement was therefore entered into, by which, if necessary, the company were to give up all claim to it, and in lieu thereof, they were to receive the grant of a tract of land at a place which was to have been called Port Grey, about 200 miles north of Swan River, to which place the Parkfield was under engagement to proceed, if required, with the whole of the passengers. Immediately on her arrival at Port Leschenault, Mr. Clifton, the commissioner, proceeded by land to Perth, for the purpose of consulting with Mr. Hutt, governor of the Swan River settlement, respecting the capabilities of the district at Port Grey, and the removal of the obstacles occasioned by the previous occupants at Leschenault, the result of which was so satisfactory that he immediately abandoned all intention of proceeding to Port Grey, and the settlers accordingly all disembarked at Port Leschenault. The Parkfield, on this account, after a detention of five weeks left that port on

* For the sum of £101 the purchaser is entitled to 100 acres in the country, and one acre in the town of Australind. One half the purchase money to be reserved to meet the expenses of the company; the other moiety will be laid out by the company in providing a free passage for young married persons of the labouring class, and as far as possible, in equal proportions of the sexes; and also in public improvements in the colony.

the 22nd of April, and arrived at Bombay on the 10th of June. The present mail will accordingly convey to England the first accounts of the occupation of Australind, and the abandonment of the projected settlement at Port Grey, which, in Captain Whiteside's opinion, from all he could gather respecting the latter place, is not to be regretted.

Sir James Sterling's observations on the Leschenault district, have already been published in England. It is unnecessary, therefore, to reprint them in a paper intended for English readers. It may be proper, however, to state, that the inference drawn by him in the following passage would appear not to be altogether borne out by facts:—

"The safety of the anchorage off the mouth of Leschenault Inlet for ordinary sized merchant ships may be inferred from the fact, that an American whaling ship remained at anchor in it throughout the winter of 1838. Another whaling vessel, the Elizabeth, remained also at that anchorage during the whole of last winter. These instances lead to the conclusion, that, with due precaution, vessels may resort to that place at any season of the year. The mouth of the inlet has not more than three or four feet water on its bar: but I am disposed to believe that if any extensive trade were to grow up, the entrance might be deepened to sixteen or eighteen feet; within the bar there is space and depth of water for a considerable number of ships."

We are, however, informed by Captain Whiteside, that in July last, two American whalers were wrecked at Port Leschenault, and another not far from that place;—but according to the American's own account, none of them had ever experienced such a hurricane on that coast before.

Since writing the above, we have been favoured with the following extract of a letter from Captain Whiteside, together with remarks on the anchorage, weather, &c., during his stay at Port Leschenault:—

"For want of room, I can give you but little information with respect to Australind, or its Port Leschenault; suffice it to say, that from all I have heard, I think the colony is likely to thrive much better at the place where it is at present settled, than it would have done at Port Grey; and as for the port, I can only say, I have been at much worse places in the course of my travels. I should think it perfectly safe during the summer months, say from September until the middle of April, but for the winter months I should consider it an indifferent anchorage, it being much exposed to the northerly and north-west gales which prevail in these months I am however credibly informed, that vessels have remained in the bay fishing, during the whole of the winter without meeting with any accident; but this is not borne out by facts, for two American whalers were wrecked here last July, and another not far from here; but this they say was a perfect hurricane, not one of them having ever experienced such a tempest on this coast before. During the five weeks we were at anchor in the bay, the weather was generally very fine except the last week, in which we had two smart gales from the north-west, and the ship drove a little; but we met with no accident. I however thought it was a warning for me to be off, and being ready by the 22nd of April, succeeded in getting the ship away on that day.

"The anchorage of the ship Parkfield, as determined by several meridional altitudes of the sun, taken with a good sextant, and sea horizon, was 33° 18′ south, from whence the undermentioned points bore as follows, viz. Point Casuarina S.W.b.W. ¼ W., outer extremity of reef breaking W.b.N. ¼ N. Northern extremity of coast in sight, N.b.E. (magnetic bearing,) taken from off poop elevated eighteen feet, ship's head E.b.S.; depth of water four and three-quarters fathoms, hard sandy bottom.

"Arrived at this anchorage the 18th of March, 1841, weather very fine, with light land and sea breezes, which veered round the compass regularly every twenty-four hours; had a strong gale on the 21st of March from S.S.W., attended with heavy rain, thunder and lightning. Barometer about 29·70. It lasted from twenty-four to thirty-six hours, when the weather again set in fine

with light land and sea breeze, which continued until the 12th of April, on which day we had a smart gale, commencing at N.b.E. and veering to N.W., W.S.W., and moderated at south on the 14th. This gale threw into the bay a heavy swell, and the ship drove about a cable's length. Weather again set in fine with the land and sea breeze, but on the 19th, had another heavy gale which commenced as before from N.N.E., veering to north-west and W.b.N., from whence it blew violently in squalls, attended with hail, rain, thunder and lightning; this gale lasted about forty-eight hours, though the heaviest of it was but of short duration,—say about four hours; a heavy swell was again thrown into the bay with the north-west wind, and the ship again drove with both bowers ahead, but brought up on the whole of the cables being veered out, without letting go a third anchor; this is bad holding ground, the bottom being a hard sand, consequently, I should say, an unsafe anchorage in the winter season.—I should think not very safe from the middle of April to the end of September. It appears to me that these gales increase the depth of water in the bay about four feet, and I observed that the gale commenced at N.N.E., veered to north-west, then moderated and fell calm, with light airs round the compass, weather gloomy and threatening, glass still falling, continued in this state for a few hours, when the gale set in again from N.b.E. and blew much heavier. One barometer stood at the lowest 29·68, another 29·78. It appears to me that both sun and moon exercise great influenee over the weather on this coast;—for instance, the gale on the 21st of March was the time of the equinox, followed by new moon on the 22nd; and the one of the 12th of April, the moon was at apogee, and entered the last quarter fourteen hours afterwards; again, the one on the 19th lasted till the moon changed on the 21st, and blew heaviest on the 20th, and we experienced, I think, a heavier gale from the same quarter than the two last: two days after we left Leschenault, viz. the 22nd of April, moon being then in perigee."

The following observations on the anchorage are also published. We do not know by whom they were written:—

"Koombana Bay, off the mouth of Leschenault Inlet, is one and three-quarters of a mile wide and half a mile in depth, affording good anchorage for ten to fifteen ships, and as many small vessels in two to five fathoms water. Point Casuarina, which from the west point of entrance is in latitude 33° 15′ 15″,* and is composed of sand hills partially covered with a low scrubby vegetation; off its extremity a covered reef extends upwards of one-third of a mile to the N.N.E. ½ E., breaking always with a moderate sea and giving good protection to the shipping in the bay. This reef is bold on the outer side, having eight or nine fathoms within a quarter of a mile to the westward, and four to five fathoms one-eighth of a mile to the north and eastward. To clear its northern extremity, bring Mount Leonard, the highest hill on this part of the Darling Range and about five leagues from the coast, to open a little to the north of two remarkable sand-hills on the east side of the bay, standing near each other and resembling a saddle, the seat being formed of dark green bushes. The bearing will be E.b.S. ½ S. (magnetic,) and will lead one-eighth of a mile north of the reef in four fathoms water when the outer coast line to the southward shuts in you may haul up south-east into the bay. The best berth for a ship is in four to four and a half fathoms with Point Casuarina bearing W.b.S., and the entrance to the inlet, (between two sandy points,) S.S.W., the distance from each being about three-eighths of a mile, the extremity of the reef will then bear N.W. ½ N. at the same distance—small vessels will be better sheltered in two and a quarter to three fathoms a quarter of a mile east from the point, where the reef will furnish protection as far as N.b.W., but the ground in that position appears

* The observation for this was taken at sea some distance from the point, which accounts for the discrepancy between it and latitude, as observed by Captain Whiteside.—Ed. B.T.

rocky under a covering of sand.—In the absence of regular moorings, vessels should always moor on arrival, not only on account of the limited space, but to prevent drifting over their anchors with an under current or outset, which is always experienced when strong north-west winds throw much water into the bay. The tides here are, as usually found along this coast, very irregular and uncertain, depending apparently on the strongest or most prevalent winds. Hence gales from seaward raise the water along the coast, whilst a prevalence of land winds, although light, is found to depress it. The usual rise of all does not exceed two feet. The variation 5° west.

"Leschenault Inlet has it entrance and bar in the south-west part of this bay, whereby it is well protected from all except northerly winds, and is in consequence generally practicable for boats of three feet draft, but the channel in is continually shifting, and in winter the bar extends much further into the bay than in summer. Firewood may be had by sending boats up the inlet, and there is abundance of good water in wells just within Point Casuarina."*

Officers of the Indian Navy.

Until the establishment of the Suez packets, for the overland mail brought passengers in contact with the officers of the Indian navy, this department of the company's service was comparatively little known to the public at large. The officers of the Indian navy had individually made noble contributions from time to time to the science and literature of their country, but personally they were, from the nature of their avocations, little known in India; and of the manner in which the professional duties was discharged, nothing was heard beyond the limits of their profession. The packet service materially altered this state of things; and certainly the numerous commentaries on the conduct of the packet officers, both published and spoken, which made their appearance just after the overland route was fairly opened up for passengers, were anything but complimentary to them. Not a few of these complaints on the part of the passengers arose at the commencement of the Suez packet arrangements from mutual misunderstandings: the passengers grumbled at the heavy charge of Rs. 800 for a trip of 3,000 miles; and as two-thirds of this went as commander's allowance, they seemed to have expected every sort of attainable or unattainable attention and luxury in return. It seemed monstrous that a steamer should smoke aft—right over the quarter deck, for the insignificant reason, that a head wind was blowing,—that no punkahs should exist in cabins seven feet high,—that beer should not be kept cold at a temperature of 90°, where the air was too damp to admit of cooling by evaporation; and most monstrous of all, that the servants picked up for a single voyage should be less obliging or less expert than domestics retained for half a life time in a family! On the other hand, to attend to the fancies of a score of fidgetty or sickly passengers, who looked for every thing that they ought, or that they ought not to have expected, and found fault whether there was or was not occasion, was a novelty for the commanders of packets; the service was lucrative, but it had not been sought for, and was for a time anything but covetted by them; and it is not at all to be marvelled at, if, as is alleged, an officer occupied with the duties of the ship should not, on certain occasions, have been quite so courteous as a lord of the bed-chamber.

These things in regard to commanders of packets and their passengers, have already luckily passed away, and so complete a change come about within little more than a twelvemonth, that scarcely a voyage occurs where some special acts of reciprocal gratitude and good-will are not changed betwixt the commander and those under his charge throughout the Red Sea passage. It is not at the same time to be concealed, that complaints are loud and frequent, and

* This is now private property, and of course the wood must now be purchased. —Ed. B.T.

listened to on all sides, as to the general condition of the junior officers of the Indian navy. These gentlemen have somehow fallen into a mistake,—they have placed themselves in a false position; and the general expressions which are every day employed—that "the officers of the Indian navy are disgusted with the service,"—are not more uncomplimentary to the service to which they belong than to those who make use of them. Besides this, the fact that officers of merchant vessels are daily taken into the employment of the Indian navy, in the mixed and somewhat anomalous character of master and lieutenant, of itself shews, without reflection on any one, that the service is defective in its complement of efficient officers, and that therefore the resources of merchantmen must be drawn upon to make good the deficiency.

It is needless to enlarge on the many inconveniences occasioned to all parties by this single portion of the system now prevailing, in withdrawing the officers of merchant ships from the sphere to which they have been accustomed, and the patrons who might have provided for them had they remained under their protection. The mode in which the ship duties are carried on onboard of men-of-war, is so materially different from that generally prevalent in merchantmen, that the altered condition of the transferred officers must seem strange and new to them. Commissioned officers of the Indian navy amalgamate indifferently with those who are viewed as the most anomalous description of uncovenanted servants, and whose employment in any way at all is a virtual reflection on the efficiency of the service into which they have been intruded. The intruded officers themselves feel the uncertainty of their tenure of service; and the Indian navy is aware, that the temporary assistance which has thus been secured may, in a moment, be withdrawn from them, as it has on many occasions already been, by the merchantmen outbidding them in the remuneration or the advantages held out.

Now, it does appear, that for most of the inconveniences and imperfections in the officering of the Indian navy just alluded to, a very easy and very thorough remedy might be provided, were the attention of the Indian Company and of the Admiralty of England, properly directed to the matters already stated, or just about to be so. According to the navy list, there are at present the following officers on the half-pay establishment at the rates understated:—

Captains . .	675
Commanders . .	752
Lieutenants . .	2747

Constituting a body of the finest seamen in existence, ready to officer the Indian navy fifty times over, were permission only given them to accept service under the company. There are two modes in which the transfer might very readily be effected. Assuming that the captains and commanders of the company's service are quite adequate for all their duties, and that it is upon the lieutenants of the royal navy alone we should require to draw:—supposing the Admiralty and Court of Directors to have made up their minds on the principle of the measure, then let the latter of these fix on the number of officers required, let these be put upon the books of the Indian navy, at the rate of pay and allowances belonging to their rank, with permission to retire on the same terms as the officers of the Indian navy, past service being reckoned to them, under certain modifications, as if they had all along been in the company's employment,—their connection with, and claims on, the royal navy forthwith ceasing. In fact, let them be transferred bodily from the one service to the other, with all the privileges, &c., of the new employment commencing, and those of the former one coming to an end; and then in one way the object desired is effected.

This is the simplest scheme, but there is another still more convenient as a temporary expedient, though the above is best suited for permanency. The proposal which probably would best answer the views of both parties, as an immediate and experimental expedient would be, for the Indian Company to

get a loan from the Admiralty, so to speak, of certain of its half pay officers at present unemployed. Say that twenty lieutenants were so required: let them retain their rank and pay in the Queen's service, together with the claims of promotion they presently enjoy: let them be transferred to the Indian navy, so long as the home government can spare them, receiving the whilst the full emolument of Company's officers, but without claims on promotion or retiring allowances from the Company: and let them be liable to recall at a moment's notice, so soon as they are required by the service to which they properly belong.

By some such scheme as this, the Company would at once have their ships officered by the most experienced, accomplished, and perfectly educated naval officers, the Admiralty would not only have it in its power to reward meritorious but ill requited men, whose services are not required on a niggard peace establishment, but it would keep its officers in full practice, and it might be in the way of benefitting by the experience of other latitudes and modes of navigation than those already familiar to them, instead of permitting them to deteriorate in knowledge or skill, or become averse to professional exertion from want of practice afloat: while a set of able navigators, at present compelled to live in a state of comparative idleness, and maintain the position of gentlemen on almost a menial's pittance, would be restored to those pursuits for which they were trained, and in which they delighted, and remunerated in a way somewhat worthy of their deserts. Let us glance at the relative rates of payment in the Royal Navy compared with that of the India Company.

Per Month.	Royal Navy.						Indian Navy.					
	Employed.			Unemplo'd			Employed.			Unemplo'd		
	£.	s.	d	£.	s.	d.	£.	s.	d.	£.	s.	d.
Captains, 1th rate	38	7	0	18	15	0	90	0	0	40	0	0
Commanders	23	0	0	13	0	0	80	0	0	30	0	0
Lieutenants, 1st class	15	8	0	9	0	0	17	10	0	15	0	0
Ditto 2nd class	14	0	0	8	0	0	14	10	0	12	0	0
Midshipmen	3	0	0				5	0	0			

On the first of the two schemes just explained, it is proposed to substitute the pay of the Company for that of the Royal Navy,—on the second to superadd it thereto under the provisions already specified. One great source of disgust from whice the officers of the Company were formerly said to have suffered, was the drudgery of the packet service; and this we venture to say, the officers of the Royal Navy will, with the following explanations, get over very easily. We have in this computation given the results in sterling money instead of Companys, rupees; because while the latter is chiefly intelligible to those familiar with Indian currency; the former is readily understood by all.

From the 30th Dec. 1839 to the 3rd Dec. 1840, the commanders of the Red Sea steamers received amongst them £13,800 in the course of ten voyages;—this came to be divided among eight officers, of whom the commander of the Berenice received 5,100*l.*; the commander of the Victoria 4,200*l.*; and the commander of the Zenobia 2,730*l.*; the balance being divided in lesser sums amongst the other five officers in command. To make up the net emoluments of these officers, of course the expense of the Passengers' Commissariat has to be deducted.

The pay of a commander or lieutenant 960*l.* and 208*l.* a year has to be added to this. With these advantages we do not see a single objection to be offered to the arrangement just proposed, saving the insignificant withdrawal of patronage the directors would sustain by it. It supercedes no one, for we propose adding Navy officers to the present establishment, not substituting them for

those now employed; it injures or invades the privileges of no one; it would give a higher cast and tone to the Indian Navy altogether; it would elevate its discipline to that of the Royal Navy, the very foremost the world ever saw; it would induce a spirit of due subordination and submission to the commands of superior officers, and to the exigencies of the service, however severe and unexpected these might prove; and those who feel their dignity hurt by the presence of passengers on the quarter-deck, and the attendant nuisance of being compelled to pocket a few thousands a year on that account, would become reconciled to either annoyance when they saw how cheerfully they were submitted to by those who had been the pride and the ornament of the quarter-decks of British men-of-war.

It must in conclusion be kept in view, that the amount of occupation held out in this way is anything but insignificant. The Indian Navy connected with Bombay at this moment consists of ten splendid steamers of a joint burthen of nearly 7,000 tons, of twelve iron steamers from 100 to 400 tons, of fifteen sailing vessels-of-war of a total burthen of 3,419 tons, and of an aggregate armament of 128 guns; and that the duties of this smart and well-equipped flotilla are discharged by four captains, eight commanders, and forty lieutenants in all.—*Bombay Times.*

Fresh Water at Saldanah Bay.

Saldanah Bay, according to Sir John Barrow, Secretary to the British Admiralty, is one of the best harbours perhaps, in the world. It is in extent about fifteen miles, completely land-locked and protected by islands and points on which fortifications could easily be erected for the defence of a fleet—but yet, notwithstanding all its well-known capabilities for a naval station, where ships could be built or repaired, it has hitherto been entirely neglected, under the belief that there was a want of fresh water in quantity sufficient for the refreshment of ships, that necessary article being only procurable in small supplies at the Residency or at another spot four miles off, and which Sir John recommended should be conducted to the beach in pipes.

Sir John Barrow strongly impressed with the immense importance of this harbour for naval purposes to England, conceived the bold idea of diverting the Berg River, a stream which empties itself in St. Helena Bay, and strongly insisted upon the value of such an undertaking as well as the facility with which its waters could be made to flow into Saldanah Bay.

Fortunately a work of that magnitude was not attempted, for an accident has just shown, that both labor and expense would have been thrown away. The case is this:—About a month ago indications of a spring of fresh water were observed on Schaapen Island, a place of general resort, and situated at the entrance of the bay. On tracing these up it appeared that the fountain had evidently been discovered many years ago, but carefully concealed, and in working to its source it was found it had been purposely sealed by masonry with cement, and its course carried through a channel into the sea, eleven feet below low water mark; evidently with the intention of hiding its existence. The supply from this spring, now released, is said to be most copious, and equal in purity to that of Cape Town, to which the Portuguese discoverers gave the significant and well deserved name of Rio Dulce.

The re-discovery of this buried treasure seems to have excited a spirit of enquiry, and a few days back, on the dam at the Residency being cleared out, two new springs were found of good water, one of which discharges ten gallons a minute, or 144,000 gallons in twenty-four hours. No doubt more water will soon be discovered, and this splendid harbour, consigned so long to uselessness, will take up its rank as a grand naval station, for which Nature intended it. Fears have already been uttered that it may injure Table Bay, short sighted people forgetting that "the more ports the more trade."

A search has been made through the colonial archives for some record of the cause which led to the obliteration of the spring on Schaapen Island, but the indefatigable Mr. Moodie can find nothing of the kind; the motive, however, no doubt was to prevent foreign vessels visiting the port, which might have led to occupation; an event which the jealousy of the old Dutch India Company would not have allowed to be consummated.—*Cape Paper.*

[Our July number contains an account of this discovery, accompanied by a chart to shew the position of the island.]

Dinner to Admiral Sir Robert Stopford, at Portsmouth.

The assembly was very numerous, and included a great number of officers and other gentlemen of eminence. The Mayor of Portsmouth presided. Our limited space confines us to the speeches of particular interest to the Services, viz., those of Admiral Sir. R. Stopford, General the Marquis of Anglesey, and Commodore Sir C. Napier.

Admiral Sir R. Stopford said—Had I more eloquence than falls to my share, —had I all the eloquence I could desire, I should still want words and language to express my deep sense of the honour I have received from the reception I have met with since my return to England. (Cheers.) With respect to my reception in England, no trump of fame, no herald announcing pompous achievements preceded my return. The reception I met with here when my brother-officers gave me a dinner a few days ago arose from those magnanimous and liberal feelings on the part of the British public, which are always displayed towards officers who have done their utmost endeavours to discharge their duty,—feelings which require no prompting, and which are always the more welcome from being unsolicited. (Loud cheers.) Honours have been conferred on various occasions—the ornaments which attend those honours may sometimes have been purchased by money, but the honour which I now receive is beyond all limits of caprice, and of a nature that no money can purchase. Gentlemen, I think it due to you, and to the company I now address, to say a few words on the immediate subject of this meeting, relating to Syria. You all know how inadequate our means were when we first landed in Syria, to oppose 70,000 men, under the command of a warrior of some distinction, Ibrahim Pacha, and whom we were to oppose only by the Marines of our ships, a few handfuls of Turks, a few Sappers and Miners and Artillerymen, and these were the extent of our means to drive 70,000 men out of a country like Syria. (Hear, hear, hear.) I was appointed commander-in-chief by sea and land of that expedition. The officer of the army, who was appointed immediately to take command of the troops on shore, unfortunately for him, was seized with such a violent indisposition, that he was perfectly unable to do anything. I had,

however, the good fortune to have in my second in command an officer, Sir Charles Napier—(Loud cheers)—who had had the advantage of occupying very useful positions under the Duke of Wellington, and who had also most gallantly distinguished himself on many occasions in Portugal.. (Cheers.) To such a man, I very gladly looked to supply the place of the general officer who was prevented from acting by indisposition. As he was upon the coast of Syria for some time before I went there, he judiciously selected a situation which was occupied immediately on my arrival with the troops, when operations commenced. His subsequent operations were, as you are aware, of a nature to check and paralyze the Egyptian troops, so that they never came into collision with the Turkish troops under arms, except in one instance, when, by a simultaneous attack on the Egyptian troops in front and rear, he succeeded in expelling those troops from Syria, and delivering them over to the command of the officers of the Sultan. To that officer, therefore, I beg to express the greatest obligations. (Loud cheers,) Neither can I forget the obligations I owe to a distinguished officer now here, Capt. Collier,—to Capt. Boxer, of the Pique, who was employed in the more southern operations,—to Capt. Berkeley, who was engaged in another part of the operations,—to Capt. Stewart, in the Benbow, who was employed northwards; and to all commanders and men who so ably and so nobly performed their duty. The operations on the coast of Syria extended near a line of three degrees of latitude, if not more. There must, of course, have been numerous detachments from the commander-in-chief to perform the services on that length of coast. Now, unless the commander-in-chief possessed a power which a countrymen of mine attributed to the birds and the fishes, of being in two places at once, he could not possibly be in more places than one at the same time. (Cheers.) Therefore, what has been said about this commander-in-chief not being there, is fully answered by the fact of its being impossible, and I feel myself in every way fully exculpated for placing reliance in officers on whom I knew I could fully depend. Whenever concentrated services were wanted, as at Beyrout and Acre, there I was in person. I will not trouble you more with anything relating to myself in Syria. I have explained some points on which I thought explanation might be expected, and I could not do so with more satisfaction to myself, than before the distinguished company and respectable community which I have now the honour to address. The eulogium which has been passed upon me I am much obliged to the mayor for. I also cannot forget the encomiums passed on me by the Rev. gentleman (J. P. McGhie,) who last addressed you; but that reminds me that I should end where I ought to have begun, by attributing to Almighty Providence the successes which we have achieved. (Great cheering.) The state of the weather, which enabled us in the month of November, at a time when the bad weather usually sets in, alone enabled us to bring our labours to a successful issue. We have now returned to Turkey a fine, a large, and a rich province. By good management it may add to her strength,—without good management, it may, as it always does in such cases, add only to her weakness. That, however, is no business of mine. I did what I was ordered to do, and let them do the rest. Once more I beg sincerely to return you my thanks for this most splendid entertainment,—an entertainment distinguished for its elegance, —abounding in good cheer and good feeling. Again, I return you my sincere thanks. (Prolonged cheering.)

Daniel Quarrier, Esq, M.D., then rose to propose "The health of the Marquis of Anglesea, the Earl of Hardwicke, and the rest of the distinguished visitors who had honoured the assembly with their company," and in a speech of considerable length and eloquence, eulogised the great merits of the noble Marquis as a first rate cavalry officer, and particularly referred to his gallant services in the Peninsula and at Waterloo. (Cheers.)

The Marquis of Anglesea rose, amidst loud applause, to return thanks. He said—Gentlemen, on the part of the visitors and of myself, I have the honour to return you my cordial thanks for the honour you have done them and me

Gentlemen of Portsmouth, I beg leave personally to express my gratitude for the favour you have done me, in making me your guest on the present interesting occasion, and in thus enabling me to offer my humble tribute of respect, and to assist in doing honour to the illustrious commander, the gallant admiral, whose glorious achievements we are at this moment assembled to celebrate. Great, glorious, and triumphant, have indeed those achievements been. They are such as it is impossible for the nation at large too highly to appreciate, or for our most gracious Sovereign too highly to reward. I congratulate the nation that we have still amongst us such able, such gallant men as many of those whom I have the happiness to see around me. (Loud cheers.) I congratulate the brave officers and men who had the good fortune and happiness to participate in all the glories of the east. I congratulate the navy at large on the high and noble proofs which have now lately been given that they have not degenerated. I congratulate that gallant corps—that useful, that invaluable link in the chain which connects the two services of the sea and the land, and which unites them in one common bond of union, good fellowship, and interest. I speak, as you may well observe, of the Royal Marines. I congratulate them on the splendid share they have had in all those victories. It is a corps which never appeared on any occasion or under any circumstances without doing honour to itself and its country. Many of us here have lived in times when war has been carried on on a more extended scale than it has lately been, but I do not believe that if we were to search the pages of history we could find one, notwithstanding the glorious examples which stand recorded on it. Still I do not believe we could find one in which this service stands more pre-eminently conspicuous, or in which it holds a more commanding position than it does at the present day, as compared with the same service in other nations. (Great cheers.) With respect to the honour done me by a gentleman at the bottom of the table, who spoke of my humble services, I beg to offer him my sincere thanks. I am sorry to say, that I very imperfectly heard his speech; but I fear its subject was sadly inflated, and greatly surpassed any merit of mine. ("No, no.") Such as my services are, or such as they ever may be, they are always at the service of my country. I most cordially and sincerely thank the worthy gentleman for giving me an opportunity of stating, that, whatever honours and distinctions I may have received, I owe them all to the gallantry of those brave men whom it has been my fortune to lead to the field of battle. (Tremendous cheering.) I might be anxious, perhaps, to expatiate on the high merits of the late brilliant campaign in the east, but, really, gentlemen, after the perfectly beautiful history of the life of the Gallant Admiral, whom we are now anxious to honour, which was given us by our worthy mayor, and after the distinct and perfect explanation which the Gallant Admiral gave of his own achievements in the east, it would be nothing short of impertinence in me to detain you one moment longer. I will just, however, make one single remark on what has fallen from the Gallant Admiral. It seemed to me that he tried to make an excuse for not having himself been at this, that, and the other place, saying that he could not be at all places at once. Now, it seems to me one of the matters of the first and greatest importance to all commanders, whether by sea or land, to place confidence in those who are under them, and not to attempt to do everything for themselves. (Loud and long-continued cheering.)

Mr. W. Grant, junior, in a short but able speech, proposed the health of "Commodore Napier, and the officers of the navy who served in the Syrian expedition," which was drunk with general applause.

Commodore Sir C. Napier returned thanks. He said he wished all the officers who had served under the Gallant Admiral on the coast of Syria and Acre were present this night to witness the kind manner in which they had received the mention of his (Sir R. Stopford's) name. (Loud cheers.) He could assure them, as an officer holding a high command under the Gallant Admiral, that there was not an officer or a man engaged in that expedition along the whole coast of Syria, who did not always look up to the Gallant Admiral with the most perfect

and entire satisfaction and relience. As to those who were more immediately placed under his orders, he could say that he never witnessed during the whole course of their services more zeal, more energy, and more determined perseverance than was displayed, not only by the officers of Navy, but by the Marine officers in the late expedition. As to himself, if he had been able to perform any services useful to his country or creditable to himself, he owed it entirely to his Gallant Commander-in-chief Sir Robert Stopford, who placed a sufficient confidence in him duing the illness of the Army officer, who was appointed to the command of the troops. The Gallant Admiral thought proper to give him his confidence and the command of the allied troops employed in the expedition. It was certainly a new situation for a Naval officer like himself to be placed in, but when the Gallant Admiral gave him that command he thought it his duty to use the whole of his zeal, exertion, and energies to carry out the Admiral's views to the utmost extent in his power. He believed the Gallant Admiral had told them that he had done this to the utmost extent in his power, from the moment he received the command of the army until the moment he returned that command. The Gallant Admiral had given them such a perfect account of the services of the army and navy on the coast of Syria that there was but little for him to say on the subject. But there was one thing he must tell them, as the Gallant Admiral had adverted to it. When he landed in D'journi Bay, he found himself surrounded by innumerable difficulties—in an inaccessible country, with deep gorges, high mountains, and a powerful army to contend with. To meet all those they had but a small force, but from the energies displayed by the Marines and the Turkish troops, he found himself in a state to combat all the difficulties opposed to them; and, he was happy to say that, during the short compaign there of one month, the services of the Marines, of the Turkish, and of the Austrian troops overcame obstacles greater than ever had been overcome before, and were the greatest feats of the service since 1784. The Gallant Admiral was good enough to allude to his having seen some land service in Portugal in the time of the illustrious Duke of Wellington. He well remembered, in his boyish days, being at the battle of Busaco, when the gallant Duke commanded a newly levied army, but then his troops were British. They had never been tried before then, and it must have been a most anxious time for the Duke. He well remembered the British troops were attacked on one side and the Portuguese on the other, and he saw that illustrious general near a particular spot watching the effects of this terrible attack on his left and right. He saw the gallant resistance of the forces commanded by Sir T. Picton, supported by his honourable friend near him, Sir H. Pakenham, and a more brilliant attack no man ever saw, and it was not till then that he saw what British troops and officers could do against a large and superior French army. That lesson he had endeavoured never to forget. (Loud cheers.) It was then he acquired all his knowledge of military affairs, though, as a naval officer, it was presumption in him to say he knew anything at all of them. If, however, he knew anything at all, that knowledge he had acquired under the Duke of Wellington. (Loud cheering.) He would not detain them longer, except to say one word on the discipline of the navy. The Mediterranean fleet, commanded as it was,—(Hear, hear)—and he had always fought against the unmanned state in which it was kept—was a perfect example of discipline, and nothing could prove its beautiful discipline and energy, more than that it should in a few hours have silenced the forts at Acre, which it took Napoleon more than once to try to do, and in which he never succeeded. He could not refer without deep regret to the loss of Colonel Walker, commanding the Marines. He was a most gallant officer, who, had he lived, would have led the Marines on in the most conspicuous manner to his own and their glory, and to the honour of the nation. (Loud cheers.) Before he sat down he must not forget Admiral Walker, who, though a young officer, was in command of the Turkish fleet. He believed there was no officer who had served in the Syrian war who would not allow that Admiral Walker had displayed great zeal, energy, and integrity, and had brought the

Turkish fleet into a state of highly improved discipline. He was satisfied if that gallant officer remained in that post some short time longer, he would discipline that fleet so as to enable it to come forward on some future day to second the fleets of Great Britain, the natural ally of Turkey, in repressing any Foreign power, who should attempt to usurp the dominion of the seas, but who who he would venture to predict would never succeed in their attempt to usurp, for so long as British seamen and British officers continued to be what they were, and the British nation stood by them in the way it did, they were enabled to defy the whole world. (Tremendous cheering.)

The health of Major Morrison and the officers of Her Majesty's Royal Marines who had served in the Syrian expedition, was then given with much applause: and the company did not separate till a late hour.

ACCOUNT OF THE LATE DREADFUL EARTHQUAKE AT TERCEIRA.—*Western Islands.*

THE town of Praya was situated on the bay of the same name, at the east end on the island of Terceira, and about twelve English miles from Angra, its capital. It contained 562 houses. Near it are the villages of Lageas, containing 532 houses,—Villa Nova containing 206,—Argoaloa containing 245 houses,—and Foule do Bastaido containing 144 houses. The total population of these places amounts to more than 9,000 souls; the number of houses was nearly 2,000. The part of the island in which Praya and these villages were situated, is the most fertile of the whole; on which account, it was the part selected by the first discoverers for their residence, and its population was entirely agricultural. It is the part from which the levies were principally made to resist the landing of an expedition in favour of Don Miguel, in August, 1829, when a small military force with their assistance, and nd the possession of the strong forts on the Bay of Praya, beat off the much superior force of Don Miguel.

The town of Praya had in the year 1614 been totally destroyed by an earthquake, which considerably injured the town of Angra, and was felt severely in the island of St. Michael. Since that time it had escaped injury, although menaced by many severe shocks of earthquake.

On the 12th of June last, at 4 P.M., a violent shock of earthquake was felt at Praya, extending with diminished force to the westward. At 5h. 25m. a second and more violent one was felt; on the 13th the trembling continued with short intervals, but diminished violence during the whole day. On the 14th, at 4 A.M., a perfectly perceptible undulation of the ground took place, which destroyed all those buildings which had been weakened by the former shocks. The inhabitants of Praya then retreated to the fields in the neighbourhood for safety. With the exception of occasional slight motions, the island was undisturbed during the remainder of the 14th, and hopes were entertained that the convulsions had ceased. But on the 15th, at 3 A.M., a violent trembling and horizontal undulation of the ground commenced, and continued with intervals of ten minutes, and a duration of about ten seconds until 3h. 30m. A.M., when a strong vibratory and distinctly

visible rocking motion was communicated to the surface, which threw down the entire town of Praya, and several chambers and houses of the adjacent villages, and considerably injured the remaining houses of the villages and many elevated public buildings in other parts of the island. The ground then remained in a comparative state of rest until 2h. 40m. A.M. on the 16th, when a violent shock of earthquake did further damage. After this, although the island did not resume a permanently quiescent state until the 26th of June, no further damage appears to have been done.

It was observed with respect to the whole progress of these phenomena, that the motion was greatest at Praya; where a rent has been left in the ground of about an English mile in length, from the edge of the water stretching westward; and that every convulsion was preceded by a loud subterraneous noise, resembling thunder, so exactly varying in intensity according to the severity of the succeeding shocks of earthquake, that the first became the harbinger and guage of the other.

The number of houses thrown down has not been exactly ascertained; but by the well-grounded computation of an eye-witness is believed to be more than eight hundred, in addition to which, several are in so dilapidated a state as to require rebuilding, and a greater number are in want of extensive repairs.

The value of the property destroyed, including the public buildings, is thought to amount to about one thousand contos of reis, (180,000*l.*), of which about half falls on private individuals, most of them of the lower agricultural class, and therefore dependent on extraneous assistance for the reconstruction of their houses.

The Civil Governor of Terceira has on this terrible occasion acted with that promptitude and benevolence, with which he has at all times given his energies to the promotion of whatever object could tend to the benefit of the people under his government.

The great force of the convulsions was felt at Praya, being diminished in a sensible degree by every league of additional distance from the eastward. In this direction those subterraneous explosions were heard which attended the shocks of the earthquake, and which equally with these decreased in intensity in proportion with the distance to westward.

The centre must therefore be placed to the eastward of Terceira.

The less severe shocks did not extend beyond the Island of Terceira, others were experienced of apparently equal force at St. George and Graciosa, and only that which destroyed Praya was felt, (but not severely,) at the capitals of Pico and St. Michael. At Fayal and at the eastern end of St Michael, no motion was perceived, so far as I have been able to ascertain.

If the shocks felt at about the hour of 3h. 30m. on the morning of the 15th, in the several Islands be divided into four degrees of intensity it will be found that each interval contains a distance of about seventeen miles; the eastern end of Terceira being on the first degree or seventeen miles from the centre; the western end being thirty-four miles, Graciosa and St. George fifty-one miles, and the capitals of Pico and St. Michael sixty-eight miles, the latter place appearing to be equidistant from the centre of the earthquake as experiencing shocks of equal degrees of diminished form.

In former years mentioned by Buffon in his second volume of Natural History (in the authority of official communications) submarine explosions have taken place between St. Michael and Terceira, which were succeeded by the appearance of newly raised volcanic islands above the surface. On these occasions earthquakes were felt on both islands, most severely in that one to which the eruption was nearest. In 1811 the volcanic Islet* ejected near St. Michael, and discovered by the officers of H.M.S. Sabrina, came attended by great convulsions on that Island which were not felt at Terceira, and the force of which was considerably diminished at a distance of fifty miles from the then ascertained centre. It is therefore probable that the origin of the earthquake of last June was a submarine volcanic eruption, and that its position or centre was about seventeen miles due east from the eastern end of Terceira.

This hypothesis may not be without some practical utility. The greater number of seventeen earthquakes which are on record as having taken place in the Azores, have been accompanied by the appearance of volcanic islands over their centres: these islands have by the erosion of the sea gradually disappeared, but during this process have been highly dangerous to ships sailing in their direction. For some time, therefore, after submersion, it must have been necessary for the commanders of such ships, to observe great caution in passing by the Azores, that part of the sea in which the eruption had taken place. A similar caution would be necessary now. It is by no means a great stretch of hypothesis to suppose, that the late earthquake, has, like former ones, been accompanied by the ejection of submarine volcanic matter, which may have been thrown up within a short distance of the surface; so that, in fact, that in that part of the sea where there was previously 200 fathoms of water, there may at this moment exist a most dangerous shoal.

As in navigation the extreme of safety should be always chosen, the commanders of all vessels approaching Terceira would do well to keep a good look out, and to be prepared for indications of shoal water at from fifteen to twenty miles to the eastward of it.

(Signed) T. C. Hunt.

British Consulate, St. Michael, July 6th, 1841.

Antarctic Expedition.

[We have read with much interest the recent account of Capt. Ross's proceedings, and we admire the resolution and fortitude with which he encountered and overcame the formidable dangers and difficulties which opposed his progress, and which had, apparently, completely stopped both the French and the American ships. Great and glorious as have been the military achievements of the British Navy, they will not be looked upon by posterity with more admiration than the extensive discoveries which have distinguished it in the present age—Science and civilization, and British power, have been promoted as effectually, and as permanently by the discoveries of Cook, and

* This is not the only instance of volcanic eruptions throwing up islets near the Azores, but appears to be the most recent one.—Ed.

Parry, and Ross, and many others, as by the heroic deeds of Howe, and St. Vincent, and Nelson, and their glorious companions. The Admiralty have always most liberally and most patriotically encouraged those voyages of discovery; and in so doing they have consulted the honor of the nation, and honor is the most valuable of all national possessions.]

The Erebus and Terror discovery ships sailed from England about eighteen months ago, under the command of Capt. James Clark Ross, and Com. Crozier, their main and ostensible object being to ascertain the true position of the South Magnetic Pole, and the exploration of the Antarctic Regions*, of which a very imperfect knowledge has hitherto been obtained; but a series of magnetic observations were also directed to be made at different stations on their route, and the first of which being at Madeira, they put in there and stopped several days. Thence they proceeded to St. Helena and the Cape of Good Hope, at which places they fitted up observatories, and left officers of sufficient scientific acquirements to superintend them.

Kerguelen Island was the next spot they visited, where, and at Sabrina, further observations on the magnet were made, and they arrived safe at Hobarton, Van Diemen Land, about the middle of last August. There Capt. Ross met his old friend Sir John Franklin, the Governor, from whom he received every possible attention and assistance, and there also having erected and fitted up an observatory, they proceeded on their voyage about the 26th of October, that being the date of their last letters, at which time they were on the eve of their departure.

Extract of a letter from Captain Ross of H.M.S. Erebus, dated at Hobarton, Van Diemen Land, 7th April, 1841.

"Under all circumstances, it appeared to me that, it would conduce more to the advancement of that branch of science, for which this expedition has been more specially sent forth, as well as for the extension of our geographical knowledge of the Antarctic Regions, to endeavour to penetrate to the southward, on about the 170th degree of east longitude by which the isodynamic oval, and the point exactly between the two foci of greater magnetic intensity might be passed over and determined, and directly between the tracks of the Russian navigator, Bellingshausen, and our own Capt. James Cook, and after entering the Antarctic circle, to steer south-westerly towards the Pole, rather than attempt to approach it directly from the north on the unsuccessful footsteps of my predecessors.

"Accordingly on leaving Auckland Islands on the 12th of December, we proceeded to the southward, touching for a few days at Campbell Island, for magnetic purposes, and after passing amongst many icebergs to the southward of 63° latitude, we made the pack-edge, and entered the Antarctic circle on the 1st of January, 1841.

"This pack presented none of those formidable characters which I had been led to expect from the accounts of the Americans and French; but

* See the Map accompanying this Number.

the circumstances were sufficiently unfavorable to deter me from entering it at this time, and a gale from the northward interrupted our operations for three or four days.

"On the 5th of January, we again made the pack about 100 miles to eastward in latitude 66° 45′ S., and longitude 174° 16′ E.; and although the wind was blowing directly on it, with a high sea running, we succeeded in entering it without either of the ships sustaining any injury; and after penetrating a few miles we were enabled to make our way to the southward with comparative ease and safety.

"On the following three or four days our progress was rendered more difficult and tedious, by thick fogs, light winds, a heavy swell, and almost constant snow-showers; but a strong *water sky* to the south-east, which was seen at every interval of clear weather, encouraged us to persevere in that direction, and on the morning of the 9th, after sailing more than 200 miles through this pack, we gained a perfectly clear sea, and bore away south-west towards the Magnetic Pole.

"On the morning of the 11th of January, when in latitude 70° 41′ S., and longitude 172° 36′, land was discovered at the distance, as it afterwards proved, of nearly a hundred miles directly in the course we were steering, and therefore directly between us and the Pole.

"Although this circumstance was viewed at the time with considerable regret, as being likely to defeat one of the more important objects of the expedition, yet, it restored to England the honor of the discovery of the southernmost known land, which had been nobly won, and for more than twenty years possessed by Russia.

"Continuing our course towards this land for many hours, we seemed scarcely to approach it, it rose in lofty mountainous peaks of from 9 to 12,000 feet in height, perfectly covered with eternal snow; the glaciers that descended from the mountain summit projected many miles into the ocean, and presented a perpendicular face of lofty cliffs. As we neared the land, some exposed patches of rock appeared; and steering towards a small bay for the purpose of effecting a landing, we found the shore so thickly lined for some miles with bergs and pack ice, and with a heavy swell dashing against it, we were obliged to abandon our purpose, and steer towards a more promising looking point to the south, off which we observed several small islands; and on the morning of the 12th, I landed, accompanied by Commander Crozier and a number of the officers of each ship, and took possession of the country in the name of Her Most Gracious Majesty Queen Victoria.

"The island on which we landed is composed wholly of igneous rocks, numerous specimens of which, with other imbedded minerals were procured: it is in latitude 71° 56′ S., and longitude 171° 7′ E.

"Observing that the east coast of the main land trended to the southward, whilst the north shore took a north-westerly direction, I was led to hope that by penetrating to the south as far as practicable it might be possible to pass beyond the Magnetic Pole, which our combined observations placed in 76° nearly; and thence, by steering westward, complete its circumnavigation. We accordingly pursued our course along this magnificent land, and on the 23rd of January, we reached 74° 15′ S., the highest southern latitude that had ever been attained by

any preceding navigators, and that by our own countryman, Capt. J. Weddell.

" Although greatly impeded by strong southerly gales, thick fogs, constant snow storms, we continued the examination of the coast to the southward, and on the 27th we again landed on an island in latitude 76° 8′ S., and longitude 168° 12′ E., composed, as on the former occasion, entirely of igneous rocks.

" Still steering to the southward, early the next morning, a mountain of 12,400 feet above the level of the sea, was seen emitting flame and smoke in splendid profusion.

" This magnificent volcano received the name of Mount Erebus. It is in latitude 77° 32′ S., and longitude 167° 0′ E.

" An extinct crater to the eastward of Mount Erebus, of somewhat less elevation, was called Mount Terror.

" The mainland preserved its southerly trending, and we continued to follow it until, in the afternoon, when close in with the land, our our further progress in that direction was prevented by a barrier of ice, stretching away from a projecting cape of the coast, directly to the E.S.E.

" This extraordinary barrier presented a perpendicular face of at least 150 feet, rising, of course, far above the mast-heads of our ships, and completely concealing from our view everything beyond it, except only the tops of a range of very lofty mountains in a S.S.E. direction, and in latitude 79° south.

" Pursuing the examination of this splendid barrier to the eastward, we reached the latitude of 78° 4′ S., the highest we were at any time able to attain, on the 2nd of February ; and having on the 9th traced its continuity to the longitude of 191° 23′ in latitude 78° S., a distance of more than 300 miles, our further progress was prevented by a heavy pack, pressed closely against the barrier ; and the narrow lane of water, by means of which we had penetrated thus far, became so completely covered by rapidly forming ice, that nothing but the strong breeze with which we were favoured enabled us to retrace our steps. When at a distance of less than half a mile from its lofty icy cliffs, we had soundings with 318 fathoms, on a bed of soft blue mud.

With a temperature of 20° below the freezing point, we found the ice to form so rapidly on the surface, that any further examination of the barrier in so extremely severe a period of the season being impracticable, we stood away to the westward for the purpose of making another attempt to approach the Magnetic Pole, and again reached its latitude 76° S., on the 15th of February, and although we found that much of the heavy ice had drifted away since our former attempt, and its place, in a great measure, supplied by recent ice, yet, we made some way through it, and got a few miles nearer to that Pole than we had before been able to accomplish, when the heavy pack again frustrated all our efforts, completely filling the space of fifteen or sixteen miles between us and the shore. We were this time in latitude 76° 12′ S., and longitude 164°, the dip being 88° 40′, and variation 109° 24′ E. We were, of course, 160 miles from the magnetic Pole.

"Had it been possible to have approached any part of this coast, and to have found a place of security for the ships, we might have travelled this short distance over the land, but this proved to be utterly impracticable, and although our hopes of complete attainment have not been realized, it is some satisfaction to feel assured, that we have approached the magnetic Pole more nearly by some hundreds of miles than any of our predecessors, and from the multitude of observations that have been made in both ships, and in so many different directions from it, its position can be determined with nearly as much accuracy as if we had actually reached the spot itself.

"It had ever been an object of anxious desire with us to find a harbour for the ships, so as to enable us to make simultaneous observations with the numerous observations that would be at work on the important term-day of the 28th of February, as well for other scientific purposes, but every part of the coast where indentations appeared, and where harbours on other shores usually occur, we found so perfectly filled with perennial ice of many hundred feet in thickness, that all our endeavours to find a place of shelter for our vessels were quite unavailing.

"Having now completed all that it appeared to me possible to accomplish in so high a latitude, at so advanced a period of the season, and desirous to obtain as much information as possible of the extent and form of the coast we had discovered, as also to guide, in some measure, our future operations, I bore away on the 18th of February for the north part of this land, and which by favor of a strong southerly gale, we reached on the morning of the 21st.

"We again endeavoured to effect a landing on this part of the coast, and were again defeated in our attempt by the heavy pack which extended for many miles from the shore, and rendered it impossible.

"For several days we continued to examine the coast to the westward, tracing the pack edge along, until on the 25th of February we found the land abruptly to terminate in latitude 70° 40′ S., and longitude 165° E., trending considerably to the southward of west, and presenting to our view an immense space occupied by the newly-formed ice, and so covered by recent snow, as to present the appearance of one unbroken mass, and defying every attempt to penetrate it.

"The great southern land we have discovered, and whose continuity we have traced from nearly 70th to the 79th degree of latitude, I am desirous to distinguish by the name of our Most Gracious Sovereign Queen Victoria."

Description of Her Majesty's Ship Trafalgar.

She is a perfect man-of-war; has good space between her ports on every deck, clear of hanging chocks to the beams against the side, having no projections or obstructions in the way of fighting the guns; has great space on her orlop deck, the beams being continued all fore and aft, with a good flush three-inch flat, presenting at her sides a strong trussed figure, beautifully arranged with wood and iron, each standing in a different direction, the materials being so distributed as

to give the greatest strength to the fabric; and, having no wing pillars nor officers' store-rooms, as formerly, gives a spacious accommodation for taking troops in time of war, or an opportunity of messing her crew, keeping her guns on the lower deck clear and ready for action. This deck can be lighted by tube scuttles through the side between the beams of the gun-deck, giving ventilation for the benefit of the health of the crew, in addition to light, similar to a frigate's lower deck. The trussed figure is continued below in the hold throughout with strengthening pieces on the floor-heads, the size of the keelson, in the same direction, all fore and aft, instead of the old cross or thwart-ship riders formerly used in the ceiling, and the diagonal trussing being better distributed, not only adds considerable strength to the vessel, but greatly increases her stowage. The wings, which were formerly on the orlop, are now in the hold at the sides, which affords an opportunity of stopping a shot hole seven feet lower under water, and causes a circulation of air round the ship's side in the hold, which was never obtained before. Her main powder magazine is designed in midships, with platforms in the hold for store-rooms, and a grating platform in midships for the hempen cables and a third tier of tanks, which keeps them in a position to allow of every one being used without removing any from their places, as well as increasing the stowage of the water. The shot lockers are taken away from the well, and shot-racks are fitted at the sides of the ship, by which the shot are placed single all round on both sides, keeping them free from corrosion, and always ready when required for action, and that immense weight removed from pressing down the vessel at the mainmast. She is fitted with safety keels, which add much to the strength of the ship as well as her preservation from shipwreck, should she get on shore; the keels may be carried away and the safety of the ship not endangered. She is built with a strong internal round stern, well adapted for fighting her guns, and externally a square stern, presenting a perfect and pleasing appearance, although unadorned with carved work, preserving the form and beauty of the ship without depriving her of the advantage of fighting her guns. The top sides are clear of any projection, no trunks being required to carry off the water over the sides from the several decks as formerly, each deck being delivered of its water by pipes leading into the common gun-deck scupper, by which the water is passed overboard, thus preserving the side from decay and preventing the necessity of cutting scupper-holes in each deck. The head may be fitted with a copper pipe at the side of the stem, instead of the disagreeable appearance of wooden trunks, as usually fitted in men-of-war, which will keep the head perfectly clean, and the pipe so fitted cannot be displaced by any accident. The rudder is fitted very securely, and so remarkably safe that it could not be easily carried away as formerly; even if all the pintles were broken off, the rudder would keep in its place and work on the braces,—an instance of this occurred to the Flamer when in the West Indies.

The Trafalgar has an iron flange on the rudderhead, with three holes to receive an iron powl-pin, by which the rudder can be secured in midships or on either quarter, and the ship laid-to in case of accident to the tiller. She has pipes in her quarter galleries conducting

the water from every stool, similar to internal scuppers, thus conveying the water from every stool by one hole only. The dead lights in the stern are made to slide behind the blank sash, so as to be always ready for closing in an instant, if required, saving the difficulty of hanging them over the stern, as usually done in square stern ships. Tube scuttles are designed to be fitted in the ship's sides on the lower deck for light and air, over the seamen's mess-tables, when the guns are housed and the ports closed in bad weather. Her sides are more substantial than usual, in consequence of there being no chocks under the beams; the inside stuff is thicker and more capable of resisting an enemy's shot than the old sides were, and the chocks being taken away, the danger of splinters is removed.

We have not time to give a further description at present, but will state her dimensions, as follows:—

Length on gun deck . .	205ft.	6in.
Length of keel for tonnage .	170	5
Breadth, extreme . .	55	7½
Breadth, for tonnage . .	54	9½
Breadth, moulded . .	53	11½
Depth in hold . .	23	2

Burden in tons, 2,721 20-94.

In conclusion we have to add, this noble and splendid man-of-war has been built wholly on the improved principle of Mr. Oliver Lang, the builder, whose experience during the late war, and since the time of peace, has given him the opportunity of performing for his country what has not been equalled in any kingdom.

Expedition to the Euphrates.

Some few of our readers may be aware that a vessel belonging to a leading firm of this town was sent to sea under sealed instructions, about 18 months ago, having on board two iron steam-boats, and other cargo of a similar unusual description. The destination of the vessel, as now appears, was the Persian Gulf, the steamers having been constructed by order of the East India Company to act as a flotilla for ascertaining the navigability of the river Euphrates. The expedition has been highly successful, having traversed the course of the stream 1,100 miles from its mouth, an achievement never before accomplished, and fully establishing the superiority of modern skill and science over the ruder resources of the ancients. We have been favoured with the following extracts from a private letter written by Mr. Floyd, the surgeon of the flotilla, to a professional friend, Mr. Samuel Potter, of this town, and brought by the last overland conveyance. They will, we think, be found well worthy of perusal by those who take an interest in scientific operations, and in the remarkable countries to which they relate. The letter is dated "Belis, June 6."

"I have travelled over the greater part of Mesopatamia, got licked and plundered. I have traced the expedition of the 10,000 Greeks under Cyrus the Younger, and identified many of the cities in their

route. I am now near Aleppo with the flotilla, having completed the ascent of the river Euphrates, without doubt one of the noblest rivers of Asia; here, at a distance of 1,100 from its *embouchure* in the Persian Gulf, it is 400 yards broad and very deep. What a boast for England, upon whose flag the sun never sets, that the British ensign now floats in the breeze in the very centre of the land of the crusades and of the Courtenays, one of whose castles, 'Jiaber,' said to be founded by Alexander the Great, towers majestically over our heads.

"The 31st of May, 1841, was the happy day which crowned our efforts with success, and the distant Taurus soon re-echoed the royal salute which we fired in honor of the occasion.

"In the former letter I think I gave you a slight description of the Tigris river, and the surrounding country. The Euphrates differs little from the Tigris up to Hilla, a Turkish Arab town, built near the site of ancient Babylon, except that its banks are much better cultivated, and in some places the date tree (the palma dictiliferus) adds to the picturesque meanderings of the river; while in others a mosque, with its lacquered dome rising from a grove of willows, is a pleasing variety from the monotony of the surrounding district. Winding its way through the ruins of fallen Babylon, the river passes Perisalom, then the field of Cunaxa, where Cyrus fell, and ten thousand commenced their ever-memorable retreat. Then comes Umbar, once the seat of a Christian bishop, then Charmand, some ruins opposite the Pylor of Zenophon; and then Hit, the Is of Scripture, and famed for its fountains of bitumen and naptha, which are in such abundance that they spread themselves over the east. The river now is enclosed within a valley of high rocks, which extends from its source to below Hit, they are composed of gypsum, sandstone, and conglomerates with mica and felspar.

"The ancient Antho, where Julian lost part of his fleet, is the next place of importance; then comes Enri, the river Chabour of Ezekiel, Al Deir, the Thapsac of Scripture, and the ancient port of Palmyra; and lastly, the ruined castles of Raccaba, Tenobia, Racca, and Jiaber, all situated upon isolated rocks, commanding the passes of the river. These fortresses, from their differing entirely from all others of a like nature in this country, and from the Roman arch prevailing, appear to me to have been the frontier posts of that empire against the Parthians. The natives have a tradition that they were built by the English during the Crusades, and it is not improbable that they were occupied by the enthusiastic followers of Courtenay while he reigned at Orfa.

"Besides the towns which I have enumerated, there are several islands, many of which are well wooded; amongst them I may mention Juba, Haditha, and Aloose, strongly fortified, having each 500 inhabitants, and beautifully situated in the valley of the Euphrates, between Hit and Anna.

"This climate is delightful, and produces all the variety of European fruit, besides many of the tropical ones lower down the river. Here is the only obstacle to the navigation of this river. It consists in the remains of the water-wheels used for irrigation. In the short space of 130 miles we found nearly 300 of these wheels, about one-third of which are in operation at the present day. They consist of large parapet

walls built into the stream, directing the current of the river to the wheels, which are the most clumsy pieces of mechanism, made of branches of trees, and having slung round them 150 clay vessels to raise the water in. The wheels are forty feet in diameter, placed at the end of an aqueduct raised upon well-built gothic arches. They are the nearest approach to perpetual motion that I have seen, and it is surprising the quantity of water which they raise to the surface. They cause a current of six or seven knots, with a fall of two or three feet where they are, so that this part of the river is difficult and somewhat dangerous; but as it is, we have surmounted all; I should rather say the genius and skill of Messrs. J. Laird and Macgregor, who furnished the boats and engines, have overcome obstacles which baffled the well-disciplined legions of Trajan and Julian, when they went to besiege Ctesiphon, and failed to drag their fleets against the stream on account of the current.

"The Tigris to Mosul, the site of the ancient Nineveh, and the Euphrates to Baulus,—I might say to the heart of the Taurus (for we may go higher,)—is now proved navigable. May British enterprise drive from this field the barbarians who now occupy it, and may civilization, flying on the wings of commerce, carry with it the blessings of the gospel salvation! Yea, here is a fine field for the missionary and the merchant. To the former it opens up the Christians of a thousand hills—the Armenians, the Chaldeans, the Nestorians, the Maronites, the disciples of St. John, the worshippers of the devil, (who inhabit the Tinjar hills,) and the Arabs; but the time for the conversion of the latter, I fear, has not yet come. To the merchant it offers a market for the cottons of Manchester, the cutlery of Birmingham, and all sorts of trinketry; in return they might get the splendid wool of Arabia, far superior to anything I ever saw at home; the Cashmere wool which is brought to Bagdad, gall-nuts, the gum sandrac, myrrh, the balsams from the south, and pearls, diamonds, and turquoises from Persia; all which might be conveyed by steam up the Euphrates to Belis, and hence to the Mediterranean, a four days' journey.

"So much for the commercial advantages to be derived from the opening of the Euphrates; let us now look to the political. A communication is kept up with our Indian possessions independent of that of Egypt—a great advantage in our late broil with that power; India is reached in a much shorter time than that by the Red Sea; the mission in Persia is brought much nearer, and the means exist of throwing an Indian army either into the heart of Persia or Syria in the space of a few weeks."—*Liverpool Paper.*

Notice to Mariners.

Trinity House, London, 22nd July, 1841.

Navigation in the East Swin.—Notice is hereby given, That this corporation has caused a buoy, painted black and white in circular bands, to be laid about midway between the north-east Gunfleet Buoy, and the Gunfleet Beacon, in five fathoms at low water spring tides, and with the following marks and compass bearings, viz.:—

The second house westward of Walton Terrace, apparently midway between two clumps of trees, on the back land, bearing N.N.W.

Great Clacton windmill, it's apparent width open westward of a small white

house on the cliff N.W.b.W. ½ W. Naze Tower N.b.W. ½ W. North-east Gunfleet Buoy N.E.b.E. ½ E. Gunfleet Beacon W.b.S. ½ S. Sunk light vessel S.E. ½ E.

J. HERBERT, *Secretary.*

NEW BOOKS.

THE INDIA DIRECTORY; *—or Directions for sailing to and from the East Indies, China, Australia, and the Interjacent Ports of Africa and South America, compiled chiefly from original journals of the Hon. E. I. Company and from observations and other remarks, resulting from the experience of twenty-one years in the navigation of those seas, by James Horsburgh, F.R.S., &c.—Vol* 1. W. H. Allen & Co.—*Leadenhall Street.*

The rapid strides which have been made these last few years in the various branches of knowledge, are topics of every day remark; the arenas of our public lecturers describe them, and modern publications record them; so that any one having attained a tolerable acquaintance with science some twenty years ago, and then thrown it aside, would now find on taking it up, a vast stock of arrears to be brought up, and that, in fact, his knowledge of it lay within very narrow limits:—that frequent discovery has opened new sources of information in many cases altering the whole features of it, and making it, if not a new science, one assuming altogether a new character. There is no subject in which this is more apparent than in Hydrography, of which we have ample evidence in nearly every page of the work before us. Discoveries in Hydrography are no less important to navigation, than are those of chemistry to general science, and no less alter the features of that important art. We are glad therefore to perceive that this fact has been seen in its proper light by the proprietors of the *East India Directory*, a work which we have long looked on as the parent of that valuable class of books which the seaman takes for his guide, in making his voyages from one part of the world to another; as embodying all the knowledge, and all the experience of those who have gone before him.

We are glad to perceive that this (leviathan we had almost said) has not been allowed to fall into desuetude, to lie neglected as out of date; and that it has risen from its sleep in its last edition, with fresh acquisitions of information concerning the various coasts of which it treats, strong in its resources to go through another era of useful service, as a sea-bird rises from its bed on the ocean wave, refreshed for another flight.

In turning over a few of its pages, and comparing them with those of the last edition, judicious alterations in the shape of omission of old, and introduction of new matter, force themselves on our attention. Among the first introductions, we find the concise and clear directions for finding the amount of local attraction acting on a ship's compass, from our own pages of 1837:—this is as it should be, and it affords us much satisfaction to perceive by the numerous extracts from our own, as well as other useful works, that we have contributed so much to the benefit of navigation. In fact there is no part of the navigation between England and Bombay, or Madras which has not received new additions of highly useful matter. Among many which we have not room to enumerate, we may particularize Capt. Owen's remarks on Mozambique, and the clear and excellent description of the islands in the northern part of that channel by Captain Fairfax Moresby of H.M.S. Menai. A description of the Red Sea by the officers of the East India Service is also a most important change from the scanty and limited account we had in the old editions: in fact we congratulate our seamen on the great accession the volume contains to the hydrography of the high road from England to India by sea.

It is a happy feature of the present enlightened age, that those stores of knowledge possessed by our public offices, which can in any way forward the progress of geography and hydrography, are unlocked freely to the world,—are accessible in the easiest possible way, and made available to the public good.

It is a gratifying task to notice this, and to hold up to admiration the generous principles from which such a course emanates. Hence all participate in an advantage the good effects of which are felt at the furthest point to which a ship sails, or a traveller has roamed under the auspices of Government; and the *East India Directory*, founded on the journals and experience of ships of the East India Service many years ago, now combines with them those of the officers of the Royal Navy. Such measures are founded on the principle of pure benevolence, and the determination of doing good, and are sure of carrying with them not only their own reward, but are the becoming acts of a liberal nation.

We shall close our remarks for the present on this volume, in expectation that the second will undergo a similar revision, and with an illustration of the thesis with which we set out respecting change. In page 86 we find that in consequence of the supposed deficiency of fresh water at Saldanah Bay, the ship General Palmer unable to get to the Cape, having taken refuge there, after a stay of some days, had actually to bear up for St. Helena to obtain a supply of that article! by which she lost about two months on her voyage to India! It is recommended in the work before us, to send notice to the Cape for water, on any other occasion of a ship arriving under similar circumstances! The recent discovery of springs on Schaapen Island, which we published in our July number, will render any such steps quite unnecessary, and is one of those important discoveries which require the close attention of those who compile these works, for the guidance and information of seamen.

TOM BOWLING.—*A Novel by Capt. Chamier, R.N.—Three Volumes.*—H. Colburn.

When first we heard that *Tom Bowline* was really to make his appearance among us at last, in the shape of a novel from a talented author, we certainly expected to find him invested with all the noble attributes of the British seaman, and that his failings would have been treated with a lenient hand: but we did not anticipate, that he was to personate a band of the gallantest of the gallant seamen which the British Navy could ever boast. The incidents of "birth, parentage, and education," in such a field, are ample, and from the cockpit Mid to the Governor of Greenwich Hospital, rich are the stores of naval adventure. To choose such materials, the very essence of all that is exciting in "love and war," in absolute reality, was to ensure a passport to reading patronage, and accordingly *Tom Bowline* must become a favorite novel.

A small mis-quotation of Scripture will not prevent us from wishing him success; but we cannot part with him without expressing regret that the seaman's taste of the author, allowed him to deviate from the real vernacular pitch and tar, in naming his bantling after the orthography of Dibdin, rather than the honest family of Ben Buntline, and the other "*lines*," to which surely Tom Bow-*line* belongs. In spite of all the fascination of Dibdin's verses—

> "Here, a sheer hulk, lies poor Tom Bowling,
> The darling of our crew."

we cannot help associating with them an idea of some Bowling Green hero, instead of what he intended, namely, a veritable "Tom Bowline," in his brother the captain of an East Indiaman, the occasion of whose death gave rise to the lines. Had Dibdin been a seaman, we should never have heard of such an outrage on our nautical phraseology, to preserve which in its purity, should be the first aim of a naval author.

MASTERMAN READY, *or the Wreck of the Pacific, written for young people by Capt. Marryat.* 1 *vol.—Longman.*

Capt. Marryat appears to have taken the sterling qualifications of resources in exigency, strict obedience, close observation, and withal practical information, "the why and the wherefore," with a determination to illustrate their full value, and to instil them into the minds of youth through the very interesting channel of adventure. We cordially recommend this little book to parents, as containing such information which the minds of youth may be stored with, in preference to the many nursery tales and stories which abound in the present day. The Capt.

has undertaken a difficult but a useful task, and his future volume, (for we find the subject is to be continued,) will most assuredly succeed, if they are as good as the first.

THE COMBUSTION OF COAL AND THE PREVENTION OF SMOKE, *chemically and practically considered.—By C. W. Williams.* Simpkin and Marshall. 1841.

This is the second edition of a work most important to steam-engine proprietors, whether on shore or afloat. Mr. Williams has evidently devoted great attention to the subject of combustion, and the chemical principles on which it takes place, and assuredly there is no subject so little understood by the very persons who ought to understand it best,—we mean the constructors of furnaces and the firemen who feed them. And when it is remembered that these persons are *throwing away* the capital of their employers, it is clearly the interest of those employers to enlighten them on this subject. All who are engaged in steam affairs should consult Mr. Williams pages, and follow him closely in the ill understood subject of combustion. The work consists of two parts, an investigation into the principles of combustion, accompanied by precepts to carry them out, and a volume of coloured diagrams to illustrate them, for which the public are indebted to the enlightened views of the City of Dublin Steam Packet Company.

PILBROW'S CONDENSING CYLINDER STEAM ENGINE.—*By Boyman Boyman, Esq.* Weale, *High Holborn.*

We shall briefly state, that the object of this small pamphlet is to introduce to steam-engine proprietors the advantages of Mr. Pilbrow's engine, in saving loss of power during the stroke from an imperfectly exhausted cylinder. There can be no doubt of the importance of such proposal being sufficient to demand the close attention of engineers.

PROMOTIONS AND APPOINTMENTS.

(From the Naval and Military Gazette.)

PROMOTIONS.

CAPTAINS—W. Preston, C. Eden.

COMMANDERS—C. F. Brown, Geo. D. O'Callagan.

LIEUTENANTS—E. H. B. Proctor, F. H. Stevens, E. H. Alston, C. Clavell, W. K. Hall.

SURGEON—G. King, M.D., of the Illustrious flag ship, to be Deputy-Inspector of Hospitals and Fleets.

APPOINTMENTS.

CAPTAINS—J. E. Erskine (1838) to *Illustrious*, fitting for the flag of Vice-admiral Sir C. Adam, KCB.—D. Pring, (1815) from *Inconstant* to *Thunderer*, v. Berkeley, resigned.—F. T. Michell (1830) from *Magicienne* to *Inconstant*, v. Pring.—R. L. Warren (1839) to *Magicienne*, v. Michell.—A. Ellice (1831) to *Astrea*, as superintendent of Falmouth Packets, v. Plumridge, resigned.—F. W. Burgoyne (1815) to *San Josef* for service of Plymouth Ordinary, v. Tayler, time expired.

COMMANDERS—W. Smith, *b* (1826) to *Syren*.—H. R. Henry (1838) to *Styx*.—J. Russell, *b* (1840) to *Ardent*.

LIEUTENANTS—G. Beautoy (1821) to command *Speedy*.—J. M Potbury (1823) to command *Spy*.—T. Hodgskins (1841) to *Syren*.—B. J. Wilson (1832) to *Iris* additional, for service on the coast of Africa.—J. S. Rundle (1839) to *Monarch*, v. Armitage, sick.—A. Smith, *b* (1819) D. Reid (1840) to *Hastings*.—J. E. Cabburn (1815) to *Ocean*, for service of Ordinary, v. Boultbee.—J. Dalyell (1826) to *Champion*.

MASTERS—F. J. Gruzelier (1840) to *Syren*.

MATES—E. Lacy to *Hastings*.—R. T. Bedford (1834) to *Impregnable*.—H. S. N. Micklethwaite (1815) to *Dublin*.—W. Cashman (1838) to *Electra*.—W. P. S. Morton (1838) to *Belleisle*.—M. B. Nunn to *Excellent*.—E. A. T. Lloyd (1841) to *Electra*.

SECOND-MASTERS—J. Laffer to *Calcutta*.—T. Hart to *Atholl*, v. Dupre to *Partridge*.—Symonds to *Pique*.—W. J. Luke to *Atholl*.—Whiting to *Dublin*.

SURGEON—W. Roy (1838) to *Syren*.

MASTERS-ASSISTANTS—A. J. Barnard to *Queen*.—B. Woolley to *Lucifer*.

MIDSHIPMEN—The Hon. F. A. Foley, W. Peel, Salik Effendi, (a Turkish gentleman), and H. Boys to *Monarch*.—C. Rowley to *Electra*.—H. Elliot to *Indus*.

VOL. 1ST CLASS—F. Egerton to *Caledonia*.—F. A. T. Pasley to *Electra*.—R. L. King and J. W. Henderson to *Queen*.

ASSISTANT-SURGEONS—E. H. Derriman to *Dublin*.—R. Bothwick to *Queen*.—F. M. Rayner to *Thunderer*.—J. D. Macdonald to *Winchester*.—E. Elliot and T. Wallace (additional) to *Caledonia*.—A. W. Whitehouse to *Atholl*.—H. Turner (additional) to *Monarch*.—C. H. Elkins (additional) to *San Josef*.—J. H. Rayner to *Thunder*.—N. P. Dolling (*a*), to *Caledonia*.

PURSERS—J. Brickwood (1840) to *Syren*.—G. V. Oughton (1807) to *Hastings*

CLERKS—W. Donald in charge of Jamaica Yard.—W. H. Wiseman in charge of stores at Valparaiso.—J. P. Turner to *Monarch*.

COAST GUARD.

COMMANDERS—E. W. Gilbert (1822) to be Inspecting Commander, v. Pilkington.—A. Jerningham (1841) v. Glasse appointed to *Cornwallis*.

LIEUTENANTS—J. Sleigh (1815) to be Chief Officer, v. Keatly.—W. Stanbury (1815), C. Goullett (1814), and W. Hay (1830) to be Chief Officers.

MATE—A. B. Davis (1833) to be Chief Officer, v. Coleman.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

BELLEISLE, 72, Capt. J. Nicolas, KH., 22nd July sailed from Plymouth for Cork, 5th Aug. Kingston, Dublin.

CASTOR, 36, Capt. E. Collier, 30th of July paid off at Sheerness.

DUBLIN, 50, Capt. J. J. Tucker, 18th Aug. moved to Spithead.

HASTINGS, 72, Capt. J. Lawrence, CB. 28th July arrived at Plymouth from Malta.

IMPREGNABLE, 110, Capt. T. Forrest, CB., 9th Aug. arrived at Spithead.

INDUS, 84, Capt. Sir J. Stirling, sailed for Malta from Portsmouth.

MELVILLE, 72, Capt. Hon. R. S. Dundas, 7th Aug. arrived at Spithead from Chusan.

MONARCH, 84, Capt. S. Chambers, 10th Aug. sailed for Gibraltar from Spithead.

PRINCESS CHARLOTTE, 104, Capt. A. Fanshawe, 30th July paid off at Portsmouth.

AT PLYMOUTH—*In Harbour*—Caledonia, San Josef, Champion, and Carrow steamer.

AT PORTSMOUTH—Impregnable at Spithead; Queen, Victory, Melville, Royal George yacht, Illustrious, Excellent, Warspite, Madagascar, Samarang, Rapid, Electra, Cracker. Alban and Meteor steamers in harbour.

ABROAD.

ACORN, 16, Com. J. Adams, 21st June arrived at Madeira.

ANDROMACHE, 20, Capt. R. L. Baynes, CB., 9th May arrived in Simons Bay, 20th April left St. Helena.

BEACON, (sur. v.) Com. T. Graves, 15 July at Candia.

BRITOMART, 10, Com. O. Stanley, 5th April at Sydney.

CARYSFORT, 26, Capt. H. B. Martin, 7th July at Corfu.

COMUS, 18, Com. E. Nepean, 30th of May at Vera Cruz.

FANTOME. Letters have been received from Capt. Butterfield, of H.M.S. Fantome, bearing date May 1, 1841, lat. 1° 56′ S. lon. 8° 40′ W. giving the capture of the Josephine, the fastest brigantine out of Havana, with 299 slaves on board, after a severe chase of 24 hours, going over 257 miles of ground, and carrying a press of sail that placed every spar in jeopardy. The chase appears to have tested the sailing qualities of the Fantome, and to have placed her as one of the fleetest of her class in the service: the prize had been chased by H.M.S. Wolverine, Bonetta, Cygnet, and Lyra, all of which she escaped by her superiority of sailing. During the chase, the captain of the brigantine supposed he had to encounter the celebrated Waterwitch, and treated with derision the idea of being taken by a ship-of-war. Capt. Butterfield was obliged to send his first lieutenant in charge of the prize, leaving himself as the only officer on board, having lost by death the master, second lieutenant, and surgeon, who had not at the date of his letter been replaced. —*Hampshire Advertiser*.

FAVORITE, 18, Com. W. Croker, 3rd March, at New Zeeland.

FORRESTER, 3, Lieut.-com. Ross, 28th April at British Accra.

GORGON, (st. v.) Capt. W. H. Henderson, 10th July arrived at Malta from Alexandria.

HAZARD, 18, Com. Hon. C. G. J.

Elliott, 1st July arrived at Leghorn from Genoa, 13th arrived at Malta.

IMPLACABLE, 74, Capt. E. Harvey, 13th July arrived at Gibraltar, and sailed for Malta.

INCONSTANT, 36, Capt. D. Pring, 15th July at Beyrout.

ISIS, 28, Capt. H. Nurse, 1st July at Ascension.

MEDEA, (st. v.) Com. F. Warden, 5th July at Alexandria.

PHOENIX, (st. v.) Com. R. Stopford, 15th July at Beyrout.

RACEHORSE, 18, Com. the Hon. E. A. Harris, 14th June at Tampico.

REVENGE, 76, Capt. Hon W. Waldegrave (a), 15th July at Beyrout.

SAPPHO, 16, Com. T. Frazer, 31st of May, at Barbados, 24th of June at Dominica.

SOUTHAMPTON, Capt. Sir W. Hillyar, 16th May touched at St. Helena.

STROMBOLI, (st. v.) Com. W. J. Williams, 15th July at Beyrout.

TYNE, 26, Capt. J. Townsend, 15th July at Candia.

VESTAL, 26, Capt. J. W. Carter, 19th June, arrived at Halifax from Tampico and Bermuda.

VESUVIUS, (st. v.) Lieut.-com. W. Blount, 15th July at Candia.

VICTOR, Com. W. Dawson, (a) 20th May at Belize.

WASP, 16, Com. G. Mansell, 15th July at Beyrout.

WEAZLE, 10, Com. J. Simpson, (a) 7th July at Corfu.

WIZARD, 10, Lieut.-com. T. F. Birch, 4th June left St. Helena for Brazils.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

At Southsea, 29th of July, the lady of Lieut. N. J. Edwards, H.M.S. Queen, of a son.

Marriages.

At Marylebone church, Aug. 7th, S. Daniel, Esq., of the 3rd reg. (Buffs), to Gratiana Pulcheria, second daughter of Capt. H. H. Spence, RN., of Devonshire Street, Portland Place.

At Bangalore, on the 20th May, A. J. Greenlaw, Esq., 40th regt. N. I, to Julia Martha, seventh daughter of Captain Delafons, RN.

On the 20th July, at Marylebone, Capt. the Hon. Frederick Pelham, RN., brother to the Earl of Chichester, to Ellen Kate, daughter of Rowland Mitchell, Esq., of Upper Harley Street.

At Kirk Braddon, Isle of Man, Capt. A. T. Goldie, RN, of the Nunnery, to Mary, daughter of R. Simpson, Esq., of the Cliffe.

On the 21st at Marylebone, Mr. Sergeant Gaselee, eldest son of the late Mr. Justice Gaselee, to Alicia Mary, eldest daughter of the late Sir John Tremayne Rodd, KCB., Vice-admiral of the White.

On the 26th July, at Holy Rood Church Co. Down, M. Campbell, Esq., son of the late D. Campbell, Esq., of Kildalloig, Argyleshire, to Basilia Hamilton, eldest daughter of Lieut. Samuel Mottley, RN.

At Haggerstone, Mr. W. Middlecoat, to Jane, daughter of the late W. Twynan, Esq., RN.

On the 22d July, at St. John's, Hackney, Mr. J. B. Rogers, of Wellington Street, Southwark, son of Mr. R. Rogers, Milton Abbey, Dorsetshire, to Ino Maria Gedge, third daughter of Capt. J. Gedge, RN., late of Southtown, Suffolk.

On the 7th of July, at Southsea, W. L. Castle, Esq., commander RN., and only son of W. Castle, Esq., of Sittingbourn, Kent, to Elizabeth, only daughter of Robert M'Coy, Esq. commander RN.

On the 7th of July, at Chitterne St. Mary, Wilts, H. W. H. Richardson, Esq., surgeon, of Bath, son of the late Capt. W. Richardson, RN., to Ann, only daughter of C. Morris, Esq., of the former place.

At Southampton, the Rev. H. M. Rice, rector of South Hill-with-Callington, Cornwall, to Emily, daughter of Rear-admiral Dick.

At Stonehouse, July the 7th, Com. W. F. Glanville, RN., to Mary Anne, youngest daughter of the late Vice-admiral Bedford, of Stonehall.

At Marylebone, J. G. Mc'Kirdy, Esq., of Birkwood, Lanark, to Augusta, daughter of the late Capt. Bradshaw, RN.

At Alveston, the Rev. A. W. Noel, son of the late Capt. the Hon. F. Noel, RN., to Lucy, daughter of Capt. W. N. Tonge, RN., of Alveston, Gloucestershire.

At Paddington, July the 19th, A. Tylee, Esq., Royal Artillery, to Elizabeth Martha, eldest daughter of the late Capt. Draper, RN., and widow of R. Johnson, Esq., late of Stoke Damerell, Devon.

At Kingston, on the 6th of July, M. Cory, Esq., surgeon, of her Majesty's ship Scout, to Jane Allen, eldest daugh-

ter of J. Gain, Esq., late purser of her Majesty's ship Victory.

On the 1st of July, at St. Johns Church, Upper Holloway, H. P. Sturdee, Esq., eldest son of T. Sturdee, Esq., of her Majesty's naval yard, Portsmouth, to Emily, third daughter of the late A. Lawrance, Esq., of Tollington Park, Hornsey.

At Portsmouth, on the 14th of July, J. C. Neale, surgeon, to Jane, Georgina, only daughter of Lieut. Lovitt, RN.

At All Saints, on the 5th of July, Mr. F. W. Paul, RN., to Susan, youngest daughter of H. Cradock, Esq., RN.

At Trinity Church, J. J. Macdonnell, RN., to Louisa, widow of the late H. Hyde, Esq., of London.

At Southsea, on the 18th of July, by the Rev. C. Stewart, Mr. J. W. Wakely, of her Majesty's ship Indus, to Miss E. Wheeler, of Southsea.

Deaths.

At Brighton, Catherine, the lady of Capt. Sir T. Mansell, RN., KCH, &c., in the 60th year of her age.

At Bath, on the 26th of May, the Hon. H. D. Damer, Capt. R.N., of Milton Abbey, in the county of Dorset. He was the second brother and presumptive heir of the Earl of Portarlington. He is succeeded in his estates by his only son, H. D. Damer, Esq.

Lately, Capt. Larkan, RN., (1796,) one of the captains of Greenwich Hospital.

At Holyhead, Commander J. Duncan, RN., aged 69.

Lately, at Torquay, Commander C. Deare, RN., late of the Lily sloop-of-war.

On the 4th of July, at Ivy Tower, near Tenby, Pembrokeshire, Isabella, second daughter of the late Capt. H. Duncan, RN.

On Sunday, July the 20th, at Shoeburyness Coast-guard station, Lieut. S. King, RN., most deservedly regretted by all who knew him.

On the 24th of June, at 5, York-place, Kentish-town, Ann Hunter, relict of the late J. Enright, Esq., surgeon, RN.

At Beverley, Com. G. Keener. RN. He served with Admiral Duncan, on board the Bedford, in the battle of Camperdown.

At Plymouth, June the 29th, aged 48, Eliza, the widow of the late Lieut. C. Church, RN.

At Sheerness, S. Tuck, Esq., Master of her Majesty's ship Camperdown, (1814) leaving a widow and one child.

Lately, on the Coast of Africa, on board her Majest's brig Fantome, Lieut. W. Clayton, Mr. T. Lord, Master, and Mr. J. Stiven, surgeon, of that vessel.

At Gosport, on the 26th of June, at the residence of her brother, Com. R. Fegen, Miss Sarah Fegen, aged 64.

Lately at Stonehouse at an advanced age, Capt. J. A. Worth, RN., CB. He was a midshipman of the Culloden, in Howe's action, and lieutenant of the Thalia in Lord Bridport's. When commanding the Telegraph, hired brig, he captured, after an action of three hours and a half, the corvette brig, L'Hirondelle, of 16 guns, in 1799; while flag captain of Sir P. Durham, in the Venerable, he captured two large French frigates, one after considerable resistance in 1814.

On the 14th of July, at Upway, at an advanced age, much regretted, Mrs. Thresher, relict of J. Thresher, Esq., and eldest sister of Sir T. Hardy.

On the 18th July at Brock hall, near Leominster, Capt. Gill, RN. aged 67.

Lately at Plymouth, aged 33, Com. M. Foot, RN., from injuries received in his head on service.

On the 25th Aug. at Saling hall, Essex, Agatha Shedden, widow of the late Capt. W. H. Dobbie, RN., and daughter of the late Bartlett Goodrich, Esq.

On the 14th July, in Great Southsea Street Lieut. G. Symonds, RN., aged 52 years.

On the 26th July, Lieut. G. J. Snow, of the Cyclops.

On the 17th July, at Wexford, Lieut. W. Jones (a) Governor of the Naval Knights of Windsor; he has been 42 years on the list of Lieutenants of the Navy, was mate of the Marlborough in the action of the 1st of June, and was much respected by his brother officers.

At Iffley, Oxford, on the 9th Aug., in her 78th year, Rosamira, relict of the late W. Nowell, Esq., Vice-Admiral of the Blue.

At Woolwich, on the 2nd Aug., Helen Ruth, daughter of Capt. Fead, RN., aged eight years.

At Torrie House, Fifeshire, N.B., the 17th July, Lady Emma Erskine Wemyss, wife of Capt. J. Wemyss, RN., MP. for Fifeshire.

At Tor Point, Mary Ann, widow of Lieut. Link, RN., aged 51 years.

At Appin Lodge, near Sydney, New South Wales, Feb. 3, J. Gregory, Esq.

On the 22nd July, on board the Reindeer, Irish steamer, the Right Hon. Lord Dufferin, Capt. RN.

At Weymouth, Mr. F. Stevens, third son of Lieut. Stevens, RN.

BEAUPRE'S CHARTS.—A French surveying steam vessel has discovered a dangerous Sunken Rock off the outer end of La Chausse des Sein which is not laid down in M. Beautemps Beaupre's beautiful Charts.

METEOROLOGICAL REGISTER.

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

From the 21st of July to the 20th of August, 1841.

Month Day	Week Day	Barometer, In inches and Decimals		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	1 AM	3 PM	Min.	Max	AM.	PM.	AM.	PM.	A. M.	. M.
		In Dec.	In Dec	o	o	o	o						
21	W.	29·50	29·50	59	61	55	63	SW	SW	4	6	op (2)	bcp (3)
22	Th.	29·73	29·77	58	59	53	61	SW	SW	6	5	qbc	qbcp (3)
23	F.	29·92	29·97	54	58	51	60	NW	NW	6	5	qbc	o
24	S.	30·10	30·14	54	57	52	58	N	N	3	3	od 1) (2	o
25	Su	30·14	30·12	58	66	52	67	N	N	4	5	bc	bcm
26	M.	30·10	30·06	56	68	50	70	S	SW	2	2	go	bcm
27	Tu.	30·01	30·01	64	63	56	66	SW	NW	2	2	o	o
28	W.	29·86	29·82	58	63	53	65	W	W	4	6	qpd (2)	qo
29	Th.	29·78	29·76	56	61	48	63	NW	NW	6	5	qbc	bcphr(3(4
30	F.	29·71	29·70	54	56	48	59	NW	NW	4	2	bc	op (4)
31	S.	29·60	29·60	56	55	48	58	W	NW	3	3	bc	or (3)
1	Su.	29·78	29·86	55	59	45	60	NW	NW	3	2	bcp(1) (2)	bcp (3)
2	M.	29·95	29·94	58	66	50	68	W	SW	3	6	bc	qor (4
3	Tu	29 72	29·68	69	66	58	70	SW	SW	4	8	o	qor (4)
4	W.	29·42	29·72	58	64	57	65	N	NW	7	3	qber (1)	bc
5	Th.	29·79	29·72	61	63	56	64	SW	SW	6	7	qbc	qod (3)
6	F.	29·70	29·83	58	65	55	67	SW	W	8	6	qo	qber (4
7	S.	29·91	29·91	61	69	57	70	SW	SW	5	5	qbc	bc
8	Su.	29·75	29·63	59	63	58	65	SW	SW	4	2	op (2)	bcp (3)
9	M	29·60	29·66	56	57	53	63	W	W	3	4	bcm	bcp 3)
10	Tu	29·82	29·82	57	63	48	65	SW	SW	4	5	b	or (4)
11	W.	29·50	29·50	59	62	55	67	SW	S	8	6	qr (1) (2)	bcp (3) (4
12	Th	29·92	29·94	56	64	45	65	W	W	5	4	bc	bc
13	F.	29·89	29·86	58	60	44	63	SW	SW	2	5	bc	or (4)
14	S.	29·63	29·71	59	65	54	66	SW	W	4	6	or (1) (2)	bcp (3)
15	Su	29·71	29·74	61	64	54	65	SW	W	3	3	bcp (1)(2)	bc
16	M.	29·87	29·95	59	71	51	72	W	W	2	2	bc	bc
17	Tu	29·98	30·05	63	67	56	68	W	W	2	3	bc	o
18	W.	30·16	30·18	62	67	57	70	NW	W	2	1	bcm	bcm
19	Th	30·21	30·22	60	73	48	74	SW	S	2	2	bmw	bm
20	F.	29·98	29·89	64	77	49	78	S	S	2	4	bw	b

JULY.—Mean height of barometer = 29·482 inches; mean temperature = 57·1 degrees; depth of rain fallen = 4·31 inches.

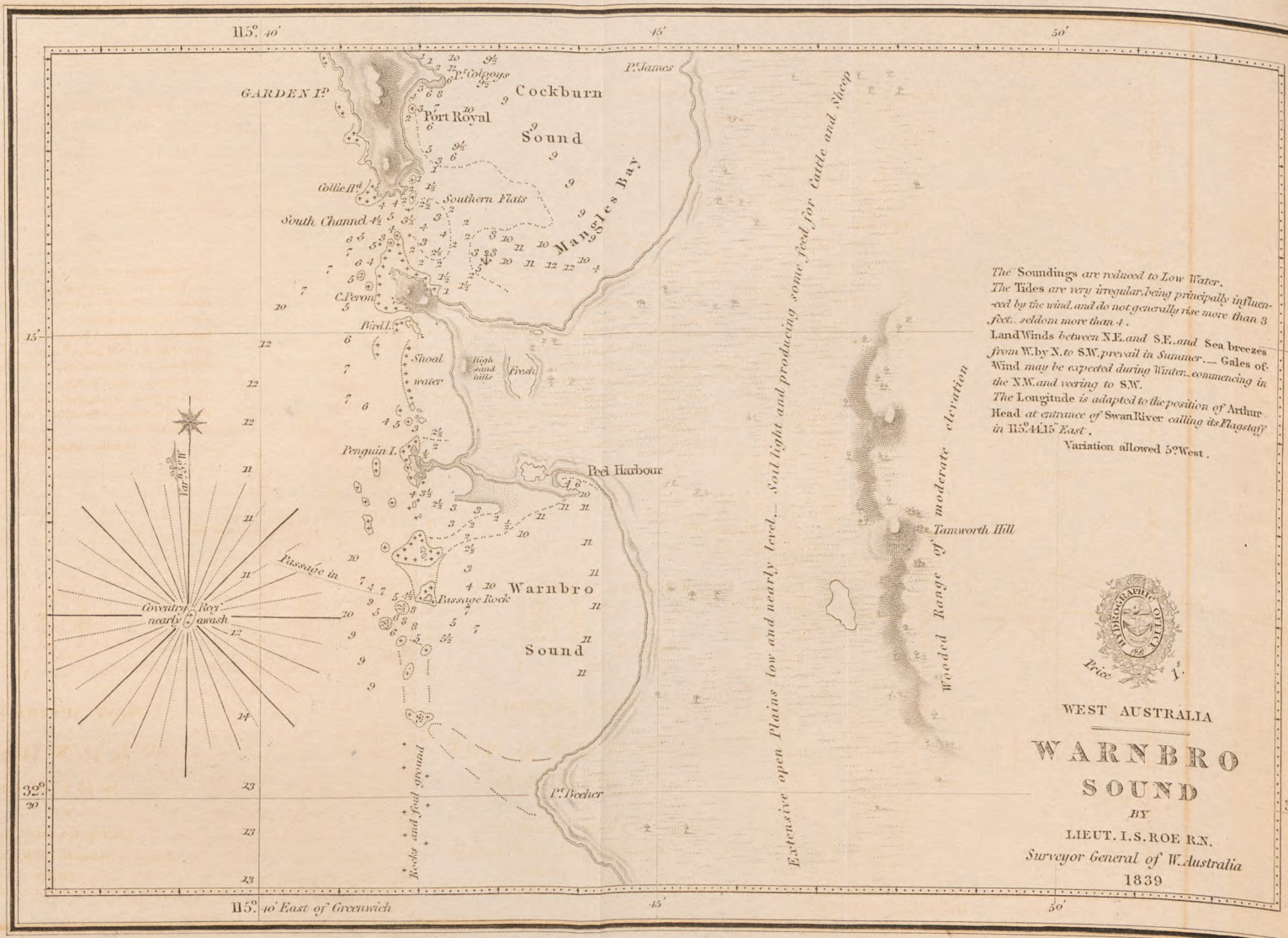
NB. This was a very wet and cold month.

TO OUR FRIENDS AND CORRESPONDENTS.

We have been obliged to defer the remainder of the *Florentia's* voyage for our next number.

Our next number will also contain the log of the barque Charlotte, recently lost among the Cape Verd Islands,—(thanks to the enlightened views of her owner,) which will enable our readers to judge for themselves respecting the position of the formidable Bonetta rock, independently of any opinion of ours on the subject.

away at sunset.



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J. & C. Walker, Sculp.t

Climate and Soil of the Falkland Islands.—*By Lieut. B. J. Sulivan, R.N.*

The following observations on the climate of the Falkland Islands were made during the six months from October to March.

We arrived at Berkley Sound on the 15th of October, at the close of a week's severe gales and bad weather, which we partly felt the two previous days off the island; the wind being southerly brought heavy showers of hail and sleet, during which the thermometer fell to 34°, its highest range being about 38°; the barometer ranging from 29·70 to 30·10.

From the 15th to the 25th the weather was beautifully fine and clear; the wind very variable, but generally from the north-west, occasionally as it drew to the eastward it brought a slight drizzling rain, but that only happened two or three times. The thermometer ranged between 40° and 50°, and the barometer from 30·10 to 30·35. On the 25th it blew a fresh gale from the north-east with rain, the barometer, which had been falling for two days, being down to 29·55; in the evening it fell calm, and remained so during the night, the barometer still continued to fall, and on the morning of the 26th it blew slightly from the north-east again; with thick rain, but during the middle of the day and the evening, it was calm; during the night a breeze sprung up from south-west; and on the morning of the 27th it blew a hard gale, the barometer, which had fallen to 29·18 beginning to rise. The gale continued throughout the 28th, 29th, and 30th, but remained quite moderate during the nights, which, with few exceptions, is the case with all the gales at these islands. The squalls of wind accompanied by hail and sleet were very frequent, the thermometer ranging from 39° to 45°. On the 31st the weather was again beautifully fine, the barometer having risen to 30·00, and the thermometer during the day being as high as 53°.

During the sixteen last days of October, there were eleven perfectly fine days, without a strong breeze, and scarcely a shower of rain; it blew a fresh gale from the north-east for one day, and the remaining four days a strong gale from the south-west, but the nights were all fine. The north-east wind was accompanied with drizzling rain, and the south-west wind with showers of hail and sleet.

From the 1st to the 13th of November we had continued fine weather, without a gale or a single rainy day, the barometer for several days being above 30·00, and once as high as 30·36: it fell to 29·60 on one day, but without bringing more than a fresh northerly breeze. The wind generally drew round to the eastward in the afternoon, and brought a little mist, and (if it remained easterly any time) drizzling rain; but directly it drew to the north-west it became beautifully fine; the southerly wind brought a few slight showers of sleet.

On the 13th there was a decided change, and from that day to the end of the month, we had very bad weather; the gales were very frequent, and generally commenced at north-east, drawing round and blowing hard from the north-west, and then to south-west, some of the squalls from the south-west being furious; the nights were nearly all fine and very clear, the gale generally freshening again after sunrise, and dying away at sunset.

During the month of November there were twenty days of moderate weather, and ten days on which it blew a gale of wind, four days of of which were very heavy: with the exception of a few slight showers, there were only seven days on which rain fell, and not one day's continued rain during the month. On the two last days of the month, the southerly wind drew to the south-east, and was accompanied by heavy showers of sleet and snow, which entirely covered the ground at night, and did not thaw till the middle of the day, and that only on the low land. On the hills at the height of about 800 feet it remained throughout the day; the sun between the showers was sometimes very powerful, the thermometer being as high as 60°. The barometer during the latter part of the month, was much lower than before, being from 29·20 to 29·80, but seldom above 29·50. The change of weather was similar to the commencement of winter in England, and it was difficult to suppose that the summer was coming on.

The month of December was far more severe than even November; during the three first days the frequent showers of sleet and snow made it very cold; the thermometer being as low as 38°, and seldom above 45°. The hills were entirely covered with snow for four days, and on the low land it did not thaw for many hours after the sun rose. From the officers of the Sparrow I learnt that they had not more severe weather, during the previous winter; at the settlement they had it even worse than it was with us; the snow being so thick as to require sweeping away from the doors of the houses; this must be owing to its situation in the centre of several ranges of hills: more rain also falls there than on the low land to the southward of the high range; but much less rain falls than is generally supposed, for I think I have never known less in any part of the world, except the plains of Patagonia. During the whole month it only rained on seven days, and not one day would have been considered in England a rainy day; but there were only eleven days on which it did not blow a gale of wind, and few of those eleven days were without a strong breeze; out of the twenty days of gales, three or four were very furious, and equalled a winter's storm in England; but nearly every night was beautifully fine. The north-east winds were much more frequent than I expected, and we had two fresh gales from that quarter, accompanied by thick rain, but they drew round to the north-west in a few hours. Directly the wind draws to the north-west the weather becomes very fine, and the atmosphere particularly clear. As the gales go to the south-west they bring showers of rain and sleet, and sometimes heavy hail showers; but the sun is generally so bright and clear between these showers that every thing dries as fast as it gets wet: with the north-west winds the dryness of the air is extraordinary, so much so that sails perfectly wet would often dry within an hour, and that early in the morning before the sun had any power. The mornings were often very heavy and gloomy, but directly the sun was a little above the horizon, and the breeze sprung up, it became beautifully clear, unless the wind was from the eastward of north.

The month of January was very little finer than December: it blew a gale of wind sixteen days out of the thirty-one, and a strong breeze on eight of the remaining ones, leaving only seven days of moderate

weather, but with only one or two exceptions the nights were all beautifully fine. Only one gale was very heavy, but several others were strong ones. There were only two days with continued rain with a north-east wind, but even those were partly fine; on nine other days it rained occasionally, generally in heavy showers, some of which were hail; the showery weather occurred when it blew hard from south-west. The prevailing winds were westerly and south-westerly, but on the fine days it generally went round the compass, and finished in the afternoon with a light breeze from the eastward. The general range of the thermometer was from 50° to 60°, but on one or two occasions it fell to 44°, and rose to 65°, and once or twice as high as 67°, which was the highest we ever had it; but when out of the wind the sun felt very powerful, and numerous small streams and ponds were dried up. With the exception of the frequent gales, I think it would be impossible to find a more beautiful climate than we experienced this summer. I had not the slightest idea that such dry weather could have been met with at the Falklands, and I think it might even have proved too dry for crops, if the land was in cultivation, as the wet from every shower was instantly dried up, and did not appear to moisten the ground at all, and on several occasions I walked three or four miles without finding any water, or any appearance of moisture; but there were many small water courses which were dry, though by the marks of the cattle they must have been constant streams during the winter. The barometer during the month generally ranged from 29·30 to 29·70, and never once rose above 30·00, though it twice fell below 29·00, the lowest being 28·94, but on neither of these occasions did the gale which followed, blow as hard as it had often done when the barometer was not near so low; it never blew strong from the north-east during the month of January, the gales commenced at north-west and drew round to south-west, but not suddenly;—occasionally the wind died away from north-west in the evening, and commenced blowing from the south-west the next morning.

The month of February commenced with a week's heavy gales, which did not as usual die away at night, but continued blowing from the south-west almost without intermission; they were accompanied by heavy showers of rain and hail, between which the sun was very bright, and in hollows sheltered from the wind its rays were very powerful. This gale seemed very different from those that we usually experienced, the barometer was down to 29·27 when it commenced at south, without having blown strong from the north-west. The barometer did not as usual rise rapidly as it freshened from the south, but fluctuated between 29·30 and 29·45 during the two days it blew hardest, after which, as it became more moderate, it rose as high as 29·75, but again fell on the seventh day, after which, we had a fresh gale from north-west; on the 15th, 20th, and 25th, we had very heavy gales, the two latter from the north-west, and they did not as usual end in a gale from south-west. Neither of these gales were preceded by any great fall of the barometer, more particularly that on the 20th, for several days previous it had been between 30·00 and 30·20, and it only fell to 29·80; after it commenced blowing hard on the 25th, the barometer which had previously stood at 29·70, fell to 29·50, but again rose as the gale

drew to the southward of west, though it did not blow very hard from that quarter. This leads me to suppose, that if a heavy north-west gale is not to be followed by a south-west one, it will not be indicated by the barometer, and that if there is a slight south-west gale following the north-west, the barometer will only fall in proportion to the strength of the south-west wind; but of course these two instances are not sufficient to give this opinion any importance.

During the month of February it blew a gale on fifteen days out of the twenty-eight, the remainder thirteen being generally very fine, with north-west winds occasionally drawing round the compass, or dying away for a few hours. The thermometer generally ranged from 45° to 55°, and on two or three occasions rose to 60° and 64°. During the south-west gales, at the beginning of the month, it was from 40° to 50°. Rain fell on nine days, principally in showers during the south-west winds, but there was not one rainy day for the month.

During the first twelve days in March it blew a gale on eight days, two or three of these days being very severe; the first gale commenced at north-east and blew hard, though the barometer only fell from 29·70 to 29·54, it continued to blow for three days after, drawing round to the south-west, but died away for a few hours during each night. On the 6th the weather was fine, but the barometer again fell from 29·80 to 29·21, and the next day a gale commenced at south-west, and blew very hard for three days, moderating at nights; the barometer which rose rapidly as the gale increased, fluctuated between 29·55 and 29·80 as the gale veered a point or two to the southward or westward of south-west, falling as it veered to the westward, and rising as it veered to the southward:—rain fell on only three days of the twelve, and then only in showers.

I have entered into these particulars, to show the ground-work on which I have formed the following opinion of the climate of the Falklands. But at the same time I must remark, that by those who have visited several seasons at the islands, I am informed that this season has been a very severe one; and that the previous summer was very much finer, so much so, that they were in the habit of wearing white trousers frequently, whereas this summer it was not required; and that the gales this summer were more frequent than usual. This agrees with Capt. Fitz Roy's remark, "that the only opinion that can be formed is, that if a season is fine one year it will be bad the next." Those who know the islands best, consider that the only exception to this rule is, that October is generally the finest, and March the worst month in the year.

There is much less variation in temperature than is usual in climates situated in the same latitude. At all seasons a southerly wind brings heavy showers of hail and sleet with a south-west wind; the hail showers are less numerous in the summer, but heavy rain showers are frequent. The south-east winds bring snow and sleet, and are, I think, the coldest winds that blow. The only fog there during the five months was with a light south-east wind. Easterly and north-east winds bring thick rain which ceases as the wind draws to the westward of north: it is astonishing how very soon a north-east wind, however light, alters the appearance of the weather; when the day is perfectly

fine, and the sky cloudless; if the breeze draws round to the eastward, and north-east, in the afternoon (which it generally does for a short time in fine weather) the clouds begin to gather round the hills and rain falls within half an hour; but if the breeze draws to the westward of north it is instantly fine.

Northerly winds occasionally bring a slight rain, but it is seldom sufficient to pass the hills; this appears to be the reason that less rain falls to the southward than at Berkley Sound, which being between the ranges of hills it is generally cloudy there when the hills are covered by clouds, while the low land to the southward of the hills has the sun shining on it; the same reason makes it colder also, as the southerly winds blow directly over the highest range of hills, which in cold weather are generally white with snow or sleet.

On several occasions, to the southward of the hills we found the northerly winds cause the thermometer to fall, and make us feel the cold more than we did with the southerly winds. I have no doubt myself that more snow falls, and that the mean temperature is less at Berkley Sound than to the southward of the high range, and also that there is less sunshine. With the wind from the N.N.W. to west the sky is generally cloudless, and the weather beautifully fine, exactly resembling that of the plains of Patagonia, over which these winds blow, but directly the wind gets to the westward, and blows from Tierra del Fuego, showers become frequent, and sometimes drizzling rain for a short time, but between the showers the weather is nearly as clear and fine as with the north-west winds. The situation of these islands with respect to Patagonia, must be the cause of the dryness of the climate. Being situated to the south-east, the north-west winds (which prevail so much, and which answer to the south-west winds in the northern hemisphere, and are therefore generally those which bring most rain in latitude of these islands,) blowing from such a dry climate, have not space of water sufficient to collect much moisture, but the more northerly the wind blows and consequently the longer the space of water for it to blow over, the more damp the air becomes. The scarcity of easterly winds, (which are the only winds that bring continued rain,) is another cause, and as I was assured by a person who had been many years on the island, that he never knew north-east winds so prevalent as they were this summer; it is likely that we did not experience drier weather than is usual, but most probably the contrary.

One of the most remarkable things at these islands is the scarcity of lightning. Except a few very distant flashes, we only once experienced any, and that nothing more than a few flashes which accompanied a heavy squall of rain and hail during a south-west gale, and which passed close over Port Louis. The most singular thing is, that a vessel should have been struck. This happened to a small schooner laying off Port Louis,—her mainmast was damaged by it, and one of her pumps split in pieces.

Another remarkable thing is the fineness of the nights. I seldom went on deck in the middle of the night without finding the sky cloudless, and the stars as bright as in a tropical climate. About daylight a low mist often hung over the land, accompanied by drizzling rain, but this generally disappeared shortly after sunrise.

Soil.—The northern part of East Falkland is occupied by two parallel ranges of hills, entirely composed of a compact Quartz Rock. Between the east ends of these ranges lies Berkley Sound, which runs about sixteen miles to the westward, where a narrow neck of low land separates it from Port Salvador, which is a deep inlet that has forced a passage through the northern range of hills, and then runs east and west between the two ranges. This neck of land is composed of ridges of sand-stone and clay slate, principally the former. The breadth of this low land to the junction of the Quartz Rock on each side is about three miles, its extent the other way is from one to three miles. On the eastern part of this land stands the settlement of Port Louis; the greater part of this tract of land is free from swampy ground, except in the hollows between the ridges, in nearly all of which a small stream runs, and the ground on each side for a few yards is swampy. The surface of this land appears to be generally a dark vegetable soil, from six inches to two feet thick, resting on a yellow earth which is in some places gravelly, and in others resembles clay; it is the surface of the yellow sand-stone decomposed. The ground is covered by a long grass mixed with numerous small shrubs, the roots of which are thickly matted together for a few inches under the surface. Directly you approach the rise of the Quartz Hills, on each side the ground becomes spongy and swampy, and the whole of the sides of the hills, and even the very summits, are one continued swamp, which is only passable in a few places even in summer for a man on horseback; for if there has been sun enough to dry the ground it remains a loose spongy mass, into which the horses sink to their knees; this extends entirely over the space between the north side of Berkley Sound and the north coast of the island, and I think it will be utterly useless to attempt to improve it, draining is out of the question, as it retains the water like a sponge. As this tract of land is very extensive, it makes it a very difficult thing to recover cattle that have once strayed on it, and catching them there is almost impossible, even in summer, for the horse cannot follow them with a man on his back;—the Gauchos who accompanied me over the ground, assured me that it is enough to kill any horse, and that it would require five men to take care of the same number of cattle at the settlement, in consequence of their having this land to run to, that one man could manage on the dry land to the southward of the hills. This will, I think, entirely prevent Port Louis being ever made the head quarters of any agricultural or grazing establishment, beyond what is necessary for supplying ships that may touch for refreshments; for which purpose, it will always from its situation, be far superior to any other part on the islands, the piece of good land on which it stands will always be sufficient for this purpose, and from the appearance of the garden this season I have no doubt that every kind of vegetable may be raised there that grows in England.

In consequence of the fall of snow in the beginning of December, the young crops of radishes, &c. were destroyed, but cabbages, potatoes, turnips, beans, peas, &c., were as fine as I ever saw them, and the previous summer they did not lose the smallest plant. Every thing requires great protection from the strong winds, which until trees can be raised may be done by high walls of turf.

I have heard it doubted if corn could ever ripen; not knowing the requisite degree of heat necessary, I cannot give an opinion on this subject, but I can safely say that, it would have as much, if not more hours sun on it than ever occurs in England, and in the hollows sheltered from the strong winds it feels very powerful. The greatest drawback to its ever proving a corn country, would be that the whole extent of land to the southward of the hills is so nearly level that there is no shelter from the numerous gales which no corn could withstand; but the sides of the ravines are sheltered from the winds, and would have the full force of the sun. The greater part of this extent of land is composed of sandstone; the soil is black, and generally from one to two feet thick. For a few miles from the high range of hills, the soil in some places, rests on a bed of clay, and where it does so it is very boggy after rain, the clay preventing the water soaking in, and forming pools on the surface; this is the case in the neighbourhood of Port Pleasant, but more to the south-west round the shores of Choiseul Sound it is much drier, and the bottoms of the ravines are the only places where any swampy land is to be found. The whole country is thickly strewed with fresh water lakes, the shores of which are the favorite resort of the cattle. In some valleys between Choiseul Sound and the hills there are chains of these lakes joined by rivulets, and this part seems more thickly covered with cattle than the south side of Choiseul Sound, where the lakes are less numerous. It is also so intersected by creeks which run inland from Mare harbour and Port Pleasant that large tracts may be found nearly surrounded by water, and therefore affording very desirable places for forming cattle farms.

The land on the south side of Choiseul Sound is not so well supplied with water as the other parts; in the summer many of the rivulets and ponds are dried up, and very few cattle are to be seen, though their foot marks show that in other seasons they are numerous. The low land at the head of Choiseul Sound, and on the south side of Grantham Sound, is thickly covered with cattle, and I was informed that to the northward of Grantham Sound, particularly on the shores of Port St. Carlos they are numerous. All those people on the island, who know Port St. Carlos, consider it superior to any other part for either a grazing or agricultural establishment as the soil is very rich, particularly in the valley at the head of the port, through which a river runs navigable for several miles in boats. Not having been there myself I cannot give an opinion on it.

Of all the places I visited, I think Port Pleasant and Mare Harbour, are the best adapted for forming establishments of that kind.

A Voyage from the Havana to Vera Cruz, Tampico, and Savana.

By Mr. W. Mooney, mate of H.M.S. Thunder.

(Concluded from p. 583.)

On the 11th January we left the river, and without accident, arrived in the middle of a heavy norther at Vera Cruz. Not having room to lay-to we were obliged to run before it, at the risk of being swallowed up

every moment, so high is the sea even on soundings. Having remained the required time and received the despatches, mails, &c., we joyfully turned our head homewards, "*sed Deus aliter visum*" as the sequel will show. In fine weather, the approach of a norther can be always ascertained, by the manner in which the land wind veers; if from west towards south, fair weather continues, but if it once gets to the northward of west, it invariably freshens up to a gale in the season of the norther, and just before it commences the scud can be perceived progressing at no small pace from south-east to north-west. Although it may appear a risk, I think it better for a vessel to keep as near the land as possible on these occasions. The wind blows more along shore, if weather and sky is clear, observations can be obtained; and if the land is known, bearings can be taken. It is a comfort to know where you are, although you cannot make use of the wind. The longitude can be guessed roughly by the soundings, and there are no dangers within three miles of the shore, till you pass to the northward of Tuopau. The gale first lulls inshore, and the heavy dense bank can be seen, about twenty or twenty-five miles out, and there it hangs until the gale breaks altogether, enveloping many a hapless helpless vessel in utter darkness, whilst their more inshore neighbours enjoy comparatively fine weather.

On the 15th of January we took our departure from Vera Cruz, at the same moment in which the "Sheldrake" packet arrived from England, without communication however. We were set to the south-east by light north-east winds, and thereby escaped a gale which blew to the northward of us. We had the concomitant swell as long and as heavy as usual, but as we had only light winds, odd puffs, and dark lowering weather, we made up at the expense of our bones and want of rest, the quantum of annoyance, which a heavy gale would have given. The current setting to the north-eastward about one mile per hour, we were occasionally favoured with a cross sea, which effectually saved us the trouble of either washing ourselves or the deck. We again struck on the Campeche bank, about forty miles to the northward of our departure from it, and found the current as before, setting in very nearly three miles per hour. Sounding as we proceeded, we passed to the southward of Arenas Cay, about one mile distant, to the westward of which island, at three miles distance, we discovered a shoal having seven and eight fathoms on it; there might be less, but we could not spare time to examine, but rated the chronometers as we passed. Taking the line of 100 fathoms as the boundary of the bank, it does not extend so far to the northward as laid down in the charts now in use, 22° 56′ 30″ north, and 89° 49′ west, being its boundary in one particular spot, then by curtailing its extent to the northward about twenty-five miles, from thence it trends to the north-eastward. We had a very tedious passage of sixteen days to Havana. Here we arrived on the evening of the 31st, in want of everything, having been supplied on the previous day with a little biscuit and water by a Spanish brig, whose captain was so kind as to send a present of cigars, and about three gallons of excellent Catalonia wine, not at all out of season. The next morning we had the satisfaction of being put in quarantine, lest that cleanest, most wholesome, and sweet scented city,

should be infected, advices having arrived previously that the smallpox was raging at Vera Cruz, although we never heard a word about it when there. Never dreaming of such a thing as quarantine, I had immediately on my arrival gone on board her Majesty's ship Romney, reported myself, and returned different articles which we had in charge from her, and if the consul had not happened to have been out of town, I should certainly have landed the mail, and the sapient doctors would have known nothing of it. Several boats came to us. However, we kept the Romney's business a secret, and the commander took care to go ashore early and stop all day, perhaps for fear of mistakes. We were kept nearly starved the whole of the next day, as the attending boat only visits once a-day, and there is no parlatorio as in civilized countries, subject to quarantine. There they are always in a hurry, and even bordering on insolence, when we were obliged to detain them a little to arrange our correspondence with the shore. We ought, however, eternally to be indebted to Havana, for the near opportunity it afforded of a short passage to the next world, to which all good christians hope to go. We were surprised on the day of our departure, by an intimation from H.B.M. consul, that a scheme had been laid by the amateurs of the profession in the city, to exercise their abilities on our throats, and indemnify themselves for the trouble by pocketing some three thousand dollars on board. We happened to sit up rather too late, and gave the moon an opportunity of rising, so these brave gentry abandoned their project; however, had they come, we were certainly equipped in most formidable style for their reception, the total armament consisting of one musket, which would go off, and another which would not, and a rusty fowling-piece for which no balls were cast.

Having supposed that all our labours would cease at Havana, we had looked forward to it as an oasis in our pilgrimage, and were certainly "rather aback;" when a requisition from the consul, told us that we must proceed to some of the nearest continental ports for the transmission of our precious cargo, via New York to England. Having taken on board Mr. J. Turnbull, a relative of H.B.M. consul, in whose charge the mails, &c., were to proceed overland or by steam to New York, we weighed, certainly glad to escape from an approximation to *want* in the midst of plenty.

I am almost convinced, from the result of repeated, and I may say, almost hourly astronomical observations, that the current of the gulf stream, traced from the Yucatan Bank to the north of Cape Florida, does not run at an *uniform* rate throughout the twenty-four hours, but that its greatest strength is always during the ebb tide. These observations have been made in moderate and most favourable weather; the above may in some measure account for the inequalities and difficulties generally experienced in the gulf. It cannot be supposed that the foregoing observation is equally applicable on the decrease of the moon: however, a conclusion can be drawn from the following fact, "that the current in the Old Bahama and Santaren Channels, on the increase of the moon runs to the eastward, on the decrease to the westward, unless checked by strong gales." As the water finds its way up the deepest channels, say, that first it comes up the Old Bahama Channel, it there meets the *stream* running to the eastward, along the north coast

of Cuba, and evidently checks it by the strong ripplings raised at their junction; going along, it is joined obliquely by the Santaren current, and that of the New Providence Channel, which is seldom considerable, on account of the tortuous course of the channel and other means of expending itself, it has to fill the tongue of the ocean. The great impediment is, the water which must be forced in against the stream between the Little Bahama Bank and coast of Florida. Perhaps the superficial check which the stream receives from the above cause, is not equal to the superficial impetus imparted, by the waters flowing off the shallow Bahama Bank and Florida reefs, which must all tend to the increase of the gulf stream, and I believe it has been found that the stream is not equal in force at different depths. The real force of the gulf stream is seldom much felt before arriving abreast of the Tortugas, where it first begins to be hemmed in, and I believe its greatest rapidity to exist where it first feels the force of the Santaren current, or to the northward of the Key Sal bank.

On the 5th we observed the total eclipse of the moon at Gun Cay. The first intimation from natural phænomena which we had of being on the American coast, was a most plentiful and timely supply of black fish, a species of snapper, which we caught on the bank, about thirty miles to the eastward of Savana in ten fathoms water; the current sets north a little westerly, from four gradually decreasing to three knots an hour. When on soundings, as is invariably the case, we lost the influence of the current;—the current on soundings is ruled by the direction and force of the wind. A very good criterion whereby to judge, whether you are on soundings or not is the difference of temperature of both air and water, both being much colder on than off. By the help of a light sea wind and north-east current, (from whence it had last blown,) we on the 10th of February made Savana light, about twenty miles distant, and at 2 o'clock A.M., the 11th, anchored in two fathoms on the northern breakers. We took in a pilot, and proceeding up the river, met as is usual great quantities of wild ducks, and were so unfortunate as to lose a tide, the pilot having grounded us opposite a new fort, being built about a mile from the light-house.

The cold was intense, and our crew being all Bahamians, were greatly affected by it, so much so, as almost to incapacitate them from work. By dint of perseverance, we anchored off the town at eleven at night, having beat up against a strong north-west breeze, freezing very hard, the schooners bows being covered with icicles. Eight days before at Havana, the thermometer stood at 86°, and we were destined to find it nearly as hot on our return to New Providence, after a four days' passage. As we carried a pendant, the Bahamian British subjects were suffered to remain on board, with an intimation, that if they presumed to land they would be incarcerated, and there kept till our departure, (Oh land of liberty!) Had they belonged to a vessel not in government employ, they would have been taken out of her, kept in prison at the vessel's expense, and an additional expense imposed by the necessity of hiring drunken white-skinned labourers to do their work.—they are no better off in this particular than before the emancipation. Whilst here, the thermometer (I was told,) fell to 24°, the West Indians being regularly "done up."

Although the town is built on an elevation from the river, there being nothing but level ground about, no very flattering view can be obtained. The houses are mostly built of wood, being best adapted to a climate so very damp in summer, and look exceedingly picturesque when neatly painted. Public buildings, manufactories, mills, "*et hoc genus omne*," are built of brick, the outskirts are pine-barren.

The cotton shipping was going on very slow, although upwards of two dozen large British vessels were lying in the river. The plan is this;—large vessels from British America and Elsinore, come here to load cotton or rice. If they get a good freight they proceed to England with it, but if freights are low, they load with pitch, pine and lumber,—proceed to St. Johns, unload, and re-ship the same wood as Canadian timber, thereby escaping the heavy duty on foreign timber; heretofore the form of unloading and re-loading was not enforced, but I understand that the authorities have become very strict in that particular lately. The same is the case in the Bahamas, with respect to Cuba and St. Domingo mahogany.

The market was very abundant;—shad and oysters the principal luxuries in vogue,—who that has once tasted shad forgets its exquisite flavour: it is certainly a very near approach to the king of fish. Wild turkies, (dead,) and deer, (alive,) wild and fresh from the forest, in abundance.

The principal topics of conversation, were the "Etarnal Banks" and the "President Elect."

There seems to be a most curious, and not very generous idea pervading most people here, namely, that the British are but seeking some cause of quarrel to involve them in a war, and attempt the liberation of the slaves. I will not assert that such is the opinion of enlightened men, I refer to those never to be silenced—boarding-house frequenters, and they have no small influence on public opinion. We had a grand display of volunteer corps, infantry, and cavalry, and they were very tasty and splendid in uniform, and tolerably regular in marching and evolutions, after the French style; all fine young men, who seemed to take much pride in the affair, and just as much followed and crowded by their fellow-townsmen as any recruiting party at home. The streets I have no doubt, in the summer season present a far different and more pleasing aspect, as they are sufficiently wide to allow a double row of the Pride of India, forming no doubt, a most agreeable and fragrant shade, and delicious promenade for the beaus and belles, of whom, however, those who can afford it, betake themselves either to the mountains or to the northward, so prevalent is the fever. At present, they look wretchedly bare, a mass of dark sand, every wheel sinking four or five inches deep therein, comfortless to the pedestrian and injurious to the eyes!

There seems to be a large number of boarding-house single gentlemen about, and I have been informed of half the reason why; they appear to do nothing from daylight to dark, but eat, drink, smoke, and chew tobacco, talk and sit before the fire; they live by the labour of a few negroes whom they possess, and who hire themselves into the town to work, paying their owners from the sweat of their brow, dragging on a miserable existence themselves.

The presbyterian church is decidedly the most beautiful building in the town, and would be an ornament to any town, built of northern granite; one of its chief beauties lies in the simplicity and elegance of its spire.

The episcopalian, built "à la Parthenon," has been spoiled by raising its basement, so as to admit of a sunday school beneath; we can easily forgive such a fault.

There are great numbers of Irish here, who, when work is plenty do very well, obtaining six or seven shillings sterling per diem. Father Matthew ought certainly to be here amongst them. Drink is so plentiful, that they are worse off than at home; they say that when by chance they obtain a large sum of money, off to home they go to spend it, and anon, return destitute and pennyless as at first, although citizens, "Ould Ireland for ever" is the cry.

Perhaps the name of Mitchell, the pirate, may be familiar, a cognomen how earned I cannot pretend to say, but that he has been twice tried in the State for piracy, and acquitted. Here he roams about at pleasure. About two months ago he came to this port, and presented himself to a fraternity of methodists, saying, "truly he had been a bad character, but at length had seen the error of his ways, and intended to amend;" promising at the same time to the society, part of a large sum of money, which he said he had buried in his expeditions on Cat Cay. One of the Bahamas "*auri sacra fames!*" one of the community, a "smart man" too, as knowing people are here styled, fitted out a schooner for him.

Mr. Mitchell having managed in the interim to ensnare by golden promises, a very respectable woman in the "silken bands of matrimony," departed, and had just left the Cays as we put in. Having been ashore for two days digging without success, he had taken his bearings with much formality, and stamping on the spot with great emphasis, like a second Raleigh, exclaimed, "Behold the treasure." He was endeavouring to gull them again, with what aim I cannot imagine, perhaps it may be a delusion, however, I caused it to be circulated, that if he or his vessel were caught trespassing on British territory, such a clearance as he could obtain at Savana would not clear them.

Perhaps the species of money, elegantly styled "shin plasters," which in conjunction with the cent pieces, form the only change to be obtained, requires a little elucidation; they consist of notes of credit, issued by different firms, companies, and have latterly descended as low as store-keepers. A "shin plaster," bearing this superscription, "Good for a mile's ride on the railroad," passes for three cents,—"Good for a pair of shoes at my store," so much,—"Good for a julep at the bar," so much. One would suppose by the above, that people were obliged to ride, walk, or drink, whether or no, but no such thing, they pass as so much actual cash. Many had, like the banks, issued above their means and decamped, having made many gulls and good pickings; others again, solvent, have redeemed them all. What a state to be in! What encouragement for rogues! As we were the first foreign pendant that had been up to the town since the independance, and no provision having been made with respect to harbour dues, &c., we were "boarded"

by the harbour-master for his accustomed fee. It is supposed that he holds dollars to be very handsome coin, however, he got none from us, an order being issued the same day exempting foreign vessels-of-war.

Before closing these remarks, I must pay my humble tribute to her Majesty's consuls, at the various ports at which we touched, by mentioning the kindness and unostentatious hospitality shewn, an example followed by the merchants; and if anything in so distant a country, and so lonely an expedition, could recall home to the wanderer, the solicitude and attentions so unsparingly lavished, would do it.

Having recruited and supplied ourselves with necessaries, we were not at all sorry to leave; our crew were almost helpless. To crown all, a heavy north-wester came on as we were half-way down the river, accompanied with sleet and snow and hail;—it was well we had only to run before it, it carried us home.

ÆOLIAN RESEARCHES.—No. XII.

[Of the seventeenth century.—Continued from p. 599.]

A Prosecution of the former discourses concerning Whirlewinds in generall; with an historicall account of the Tornadoes, Hurricanes, and other tempestuous winds.

THE peripatetique philosophy constitutes no considerable difference between lightning and whirlewinds; only, that the matter of the first is more tenuous and rare; and the other, made up of grosser and heterogeneous parts. We might explicate this phenomenon more advantageously, if we suppose a spirit, like that of nitre, to be discharg'd with a very violent collision or displosion, from one cloud; which meeting with another, suffers a repulse, and so causes a rotation, so that the spirit or wind, being pent up and straightened in a narrow space, and finding no passage out, recoyles, and whirls about in a circle: for though the progresse thereof would be naturally direct (in which all motion once begun, is continued, if there be no impediment, as De Cartes often observes) yet the density and resistance of the cloud, gives it an oblique or vortiginuous motion: Aristotle supposes, that the heat retiring upwards, condenses the cloud above, and therefore the eruption is made towards the earth; possibly, we may rather impute it to the cold, and pressure of the incumbent air; or that the cloud, by reason of its gravity, more easily gives way downward, and so descending in this kind of circular motion, absorbs whatever shall happen within the vortex.

Whirlewinds are divided into severall species; and have acquir'd different appellations, according to the diversity of the matter, motion, or distraction of the cloud. They are particularly set down by Pliny; who makes the genus to all of them Ecnephias, or Procella; which, if it circulate, and cause a gyration in the air, is call'd typhon, and sometimes, if it breaks out with great violence and noise, turbo. But,

if by the struggling or rotation of the included spirit, in the descent, it chanc'd to be inflam'd, it was styl'd by the Grecians, prester; which comprises not only the ecnephias, but has the vortiginous motion of the typhon; beside, it is inflam'd, and is therefore, typhon accensus; as the other, vibratus ecnephias.

All which descriptions are well adjusted to the sense of Aristotle. The stoics held, that the typhon was somewhat ignite, and that the prester was made up of hotter, but the typhon of more rarify'd matter.

Seneca describes lightning to be a very vehement, and the prester a more rarify'd flame.

Epicurus allows of no fiery eruption out of the clouds, but lightning.

Now we may imagine, that the nitro-sulphureous, or other mineral spirits, being pent in, and beseiged by an obstinate cloud, and finding no way out, at last, both from the continual rotation of the subtil matter within, and compression by the air or winds from without, may by long struggling set themselves at liberty, and violently rend off some part of the cloud, which, falling into the sea, causes tempests and the sinking of ships, because after the fall it commonly causes a whirlepool in the water.

This ecnephias oftentimes subverts houses, and tears up trees by the roots; and it's usual to see cocks of hay, elevated by it, and as it were, dancing in the air. For bodys no more solid then clouds, being charg'd with such spirits or salts, not less active and impetuous then gunpowder, may by their violent agitation, from some contrary currents of wind, cause these kind of eddys in the atmosphere, which is subject to so many inequalities and vicissitudes, sometimes from the condensation of vapours by cold, and otherwhile by the rarefaction of them, from extraordinary heat; so that there must needs follow strange disorders and whirlewinds, by what means soever, the tension or compression of the air, becomes greater, then the dimensions thereof will naturally permit.

The tornados are variable winds, call'd in the Portugal language travados, but most significantly by the Greeks, Ecnephias; for their surest prognostique is a thick cloud, suddenly rising above the horison, which is easily visible in those countries, where the air is generally defecate and serene.

The cloud for its smallnes at first was call'd Olho-de-Boy, the bull's eye; yet this, from so insensible a beginning, diffuses itselfe by degrees, and at last, covering the whole face of the heavens with a canopy of darkness, causes horrible storms, thunder and lightning, swells the raging seas up to the clouds, which pow'r them down in deluges of rain, falling rather in huge cascades, and by bucketfuls, then drops; sometimes together with hailstones of prodigious bulk: so variable and unsteady are the tornado-winds, so little obliged to any certain law, that they commonly shift all the points of the compass in the space of an houre, blowing in such suddain and impetuous gusts, that a ship which was ready to overset on one side, is no lesse dangerously assaulted on the other; sometimes they shift without intermission, and otherwhile they blow in starts, so that you shall have a perfect calme between every puff: Let a fleet of ships saile as near as they can without falling

fowl on each other, and they shall have severall and contrary winds. You shall be alarm'd with many of them in the same day, most towards the coasts of Africk, for halfe an houre or three-quarters at a time: and were they equally lasting, as impetuous, few would be invited thither by the Guiny gold, or venture to crosse the line for the richest merchandise of the East.

Our seamen commonly meet with the tornados from the 10th and 12th degree of north latitude, likewise in the tropick of Capricorne near the promontory of Cape Bon Esperance; where the fatal cloud rises as only a small spot in the air, and then displaces itself, spreading like a carpet or'e the top of the mountain; which the seamen espying, though in the calmest weather, immediately furle their sails, and provide for the ensuing storme, that not long after descends in lightning and winds, being the more terrible because it begins with the utmost fury at first, and the changes of the points suddain, as the twinkling of an eye. You shall have a treacherovs calme, a dreadfull tempest, and in an hour's space, the sky clear again, and the sea smooth as glass. The Portugues in their discoveries of the Oriental Indies, lost nine ships out of twelve, which were overset by the prodigious impetuosity of these suddain gusts. But we seldome hear of such disasters now adays, our seamen being more expert to govern themselves, in these dangerous attacques; and always jealous of surprise in the African seas: For the nearer you are to the coasts of Africk (as was observ'd by an inquisitive traveller of late, in the Philosophical Transactions) so much more dreadful is the thunder and rain, but the further westward you go the thunder and rain will be lesse, and the winds not so uncertain; so that, if you go as farre west as the meridian of the east side of Brasile, there is little thunder, neither doth the wind come down in such suddain puffs and flaws; but between the four and eight degree, it is most inclin'd to calms and thick foggs, and the rains come not in such dangerous showrs.

I have not only consulted the most experienc'd of our seamen; from whom I had information in these particulars; but I find that many others, both English and Foreigners, have in their travells given us descriptions of the tornados, which would be superfluous to recite; I shall only add a relation out of Sir Thomas Roe, (in his East India Voyage) to confirme the precedent discourses.

"These tornado blasts were so variable; that sometimes within the space of an houre, all the severall winds of the compasse will blow; so that, if there be many ships in company, you shall have them sail so many several ways, and every one of them seem to goe directly before the wind. These strange gusts came with much thunder and lightning, and extreme rain, so noisome, that it made their cloths, who stirr'd much in it, to stink upon their backs; and the water of these hot, and unwholesome showres would bring forth worms, and other offensive animals.

"The tornados met with us, when we were about twelve degrees of north latitude, and kept us company, till two degrees southward of the equinoctiall."

This ecnephias not only visits the coasts of Malaguta and Guiny,

producing vehement gusts of wind with rain, but reaches as farre as Terra de Natal, lying to the east-north-east towards St. Lawrence; and at Cape Gardafui near the entrance of the Arabian Gulfe, it infests those parts in May, as was collected by Varenius from the Dutch Journals: In the sea towards the kingdome of Loango, and that part of the Æthiopique Ocean, the tornados are most frequent in January, February, and March.

On the shoares of Guiny, when no other winds blow in those climats, and within 5, 6, or 7 degrees of the equinoctiall, they raign in April, May, and June, which is the time of their rains; and in other parts of Africk, they observe other months; for they have not only etesian winds, but anniversary tempests in some seas. Yet, to be fuller satisfy'd in the history of this ecnephias, I address'd myselfe to Mr. George Cock of Greenwich, (a gentleman of a generous and communicative nature,) who being interested in the Royal Company, is well vers'd in all occurrences of the African trade, and at my request procur'd me this following account of the tornados on the coast of Guiny, from a person long employ'd in their service.

" The place of the tornados rising is, E.N.E. to the N.N.E., they frequently give two or three houres notice of their coming, by a thick black cloud gather'd in the horison, with much thunder and lightning. Sometimes the wind comes first, very forcible, and then a great quantity of rain; otherwhile, the rain begins, and is follow'd by a tempestuous wind. At this season the blacks count it good planting corn, or roots.

" They make the air very cleare, so that a man may see five times further then before: I myself lying at anchor in the river, have seen the Isle of Princes, at least six leagues up, when before, I could not see the Isle of Fernando do Poo.

" During the tornados, it's exceeding cold, insomuch that the natives and other inhabitants are very sensible of it for the time.

" Their continuance is about an houre, or two houres at most."

I endeavour'd to understand from some of our seamen, whether the Cape Bon Esperance was so very ominous for these kinds of tempests; according to the dreadfull descriptions of Maffeus; and what notice had been taken by our mariners of the bull's-eye, appearing most about that promontory, which gave such discouragement to the Portugals, in their first attempts upon the Indies? In answer to this, an ancient East India Captain inform'd me, he had sometimes seen that which the Portugals call'd Olho-de-Boy, rising on the peak of the promontory, and describ'd it to be, a bright-red appearance in a black cloud; which afterwards descending causes violent storms. So that they commonly expect fowl weather, and encounter great difficulties about the turning of that point; where, as the lands lye higher, so they are more obnoxious to tempests; for not only the Cape Bon Esperance, but severall other hills and high lands are observ'd to generate storms; and in many countrys they have mountains, from the top of which, most of the tempests thereabout are noted to take their first rise.

I lately made enquiries of severall ships that, during the winter months, never met with any tornados, all the way from Brasile: they

being most violent, when the sun is near their zenith, and in the time of their rains, when the air is moist, and affords greater quantities of flatulent vapours.

May we not collect from hence that this phænomenon also do's principally relate to the sun? which passing from one tropique to another, not only draws the generall or trade winds along with it, but causes the monsoons, and tornados, and though the latter differ much on the shoars of Africk, from what they are in the Pacifique and Brasilean seas: yet this may be allowed, to particular accidents, the diversity of latitudes and meridians; inequalities between the seas, and mountains, &c.

In the English Channel, especially about the end of summer, many have been surprised with these vehement blasts of wind, with lightning, and raine, after the manner of tornados, and so in our American dominions, by the Caribbe Islands; but no seas have been so infamous for them as those neer Guiny, where the Levants, or generall brise, being interrupted, occasions this variablenes of the winds; or, for other reasons, not as yet nicely considered by our seamen, who though we must be forc'd to rely on their credit for matters of fact, yet they are able to assist us but very little in determining the causes of things, that must depend on a thousand minute observations in the places where they happen.

The coasts of Monomotapa, and generally the more southerly and maritime regions of Africk are said to abound with diverse sorts of minerals, and the nitro-sulphureous spirits, if they escape from under the earth or sea, must necessarily by their mutuall conflicts, and accension in the air, cause the most terrible lightning and whirlewinds: Moreover, the sun, then in their zenith is more powerfull; and the spacious Æthiopique Ocean must needs furnish multitudes of exhalations, that, gathering insensibly, at length make up the tornado-cloud; which afterwards may create tempests two severall ways.

First.—By its resolution into rain and stormy gusts.

Or, secondly, by its pressure, when the cloud distills not by degrees in pluvious drops, but rushes down impetuously all at once, driving before it a swift torrent of air, which falls as from a precipice, and threatens the oversetting of ships. If it chance to be strongly resisted, either by the extraordinary density of the atmosphere, or some other crosse winds that stop the career, then it runs round in changeable puffs to all points of the compasse; and though the bull's-eye which occasions the ecnephias, may seem exceedingly small at first, chiefly by reason of the vast distance from the earth, yet ponderous bodys, the higher they ascend, relapse back again with more vehement impulse; and therefore some have observ'd, the lesser the cloud appears at first, the tempest will last the longer.

The ecnephias is sometimes inflam'd and then is call'd prester, from πρω, though the cause of its accension (or indeed of any fiery meteor whatever) is not so easily explicated. Shall we conjecture that it consists of some such inflammable matter which easily kindles with contact and commission? or by the violent agitation, or displosion of certain minerall spirits and salts? or may not the presters and fiery winds break out in actual flames from the volcanos and burning mountains

under ground? May they not proceed from a sufficient collection of inflammable exhalations in the regions of the air? presters being a kind of continu'd lightning.

Sometimes there appears first, like a flaming cloud in the horison, from whence proceeds the fiery tempest, in a most astonishing manner; and some of these hurricanes and whirlewinds have seem'd so very terrible, as if there had happen'd one entire conflagration of the air and seas. I was inform'd by Captain Prowd of Stepny, a person of great experience and integrity, that in one of his voyages to the East Indies, about the 17th degree of south latitude he met with a tempest of this nature, towards the coast of India; of which I had some particulars extracted from his journal: First, contrary to the course of the winds, which they expected to be at south-east, or between the south and east, they found them between the east and north, the sea extremely troubl'd; and, which was most remarkable and dreadfull, in the N.N.W., north, and N.N.E. parts of the horison, the skye became wonderfully red and inflam'd, the sun being then upon the meridian. These were thought omens of stormy weather, which afterwards happen'd according to their suspicions; and as the darkness of the night encreas'd, so did the violence of the wind, till it ended in an extreme hurricane; which an houre after midnight, came to such an height, that no canvas or sayles would hold; and seven men could scarce govern the helme. But that which I mention as most considerable to our purpose, was, that the whole hemisphere, both the heavens and raging seas, appear'd but as one entire flame of fire; and those who are unacquainted with the reputation of this grave person, will find no just reason to distrust the truth of the relation.

Although these fiery whirlewinds are to be reckon'd as the most wonderfull events in Nature, yet we have frequent examples of them in historians and philosophers: one of the most memorable which ever I read of, was known, some years since, here in England; and describ'd at large in the Public Gazet: it run in a long tract, as a dreadfull torrent of fire, destroying all places wherever it came; and, if I mistake not, did much damage in Lincolnshire; but I cannot now recollect the particulars, though, as I remember, it happen'd since the last Dutch war.

They have a strange kind of ecnephias towards the Arabian Gulf, which rises from the north; where also they have oftentimes sandy tempests; and that not only in Africk, near the temple of Jupiter Hammon, (as seems to have been noted by Herodotus,) but especially in Arabia; where the floating sands are driven by the winds, and sometimes have overwhelm'd no lesse then six thousand persons at once, travelling in caravans from Aleppo on their way to Babylon.

I shall conclude with a description of hurricanes, which have the greatest affinity in their nature to the tornados, but farre more lasting and violent: by some, they are call'd hurracanos, and by others, orancan: Yet I rather think the word was borrowed of the natives, and deduc'd from a barbarous origine.

We seldome hear of any hurricanes, but between the tropiques, and within the jurisdiction of the generall, or trade-wind, which blowing perpetually from the eastern points, if it chance to be repell'd by a land brise, or any contrary motion from the west; this must needs occa-

sion strange conflicts and seditions in the air: and, were our senses fine enough to discerne the invisible commotions of the atmosphere, we should see it oftentimes disturb'd and fluctuating, no lesse then the most tempestuous seas.

They are not alike terrible in all places between the tropiques, but raign more especially near high shoars and islands that lye to the eastward from the Continent; so that they infest the Phillippine and Caribbe Isles, more then any other parts of the habitable world.

Nearer the Line its most inclin'd to calmes; and though in the torrid zone, there is but one set wind all the year round, yet they are also extremely subject to tempests, whenever the Levants encounter any opposition from the west. For although (as I before noted) the progresse of wind is naturally direct, yet meeting with any impediment, it whirles about in a circular and vortiginous motion. This cause was assign'd by Dorisi of the dangerous storms that happen near the equinoctiall, and (not to instance in severall others, who have declar'd for the same hypothesis) Ricciolus, and more expresly Varenius, in his geography, gives the like account of these typhons, or hurricanes:

"Causa typhonis procul dubio est, quòd ventus ex aliqua plaga erumpens, versus aliam, in hac reperit impedimentum, &c. Potest etiam esse ab oppositis ventis simul spirantibus, &c."

We see these kind of eddys in rivers, when the course is stopt by a dam or bank, at least when two contrary currents meet. And I believe the phenomenon of hurricanes might be sufficiently illustrated from hydrostatique experiments, were it not my intention rather to prosecute their natural history, then to determine their cause. Though I shall endeavour to collect such observations, as may not obscurely hint to us the fittest materials, on which to superstruct an hypothesis. But we cannot safely adventure upon this arduous attempt, without more exact discoveries of many particular circumstances, and accidents, which are of greatest importance to these nice speculations.

I should enquire what anniversary winds blow either in Guiana, or the neighbouring continent, especially from the west, in those months which are most suspected for hurricanes.

Then, what judgment can be made of their causes, from their prognostiques, since I am assur'd from very good hands, that they have oftentimes been foretold by the Indians. Moreover the influences of the sun, the nature of the currents and shoars, the phasis of the moon, &c., ought not to be neglected by the inquisitive naturallist.

Lastly, whether they are not frequently accompany'd by earthquakes, as I have been inform'd by some who were planters in the West Indies, which was likewise taken notice of in that excellent history of the Caribbes, of an hurricane which happen'd in the year 1563, together with an earthquake. For the included spirit, which caus'd that palpitation in the bosome of the earth, being afterwards releast from its imprisonment, might occasion these dreadfull tempests and winds. Fournier (who is generally reputed an author of good credit, and skilfull in what relates to hydrography) mentions an innundation on the coasts of America, an eruption of a burning mountain, and an earthquake neer the same time; which for the memorableness of the event, I shall set down in a few lines.

Thirty-five leagues on the south of Lima, is situate a famous port call'd Hisco; and a town in which most of noblesse and persons of qualitie doe reside; who perceiving one day, that the sea retir'd all at once from their shoars, and left the river dry, great numbers of people flock't together on the shoare, to behold so extraordinary a sight; little suspecting the ill destiny which was to attend them: for presently after hey saw a great and suddain tumour of the sea, and perceiv'd the water to boyl, and the waves to swell, and rowle one upon another; not like waves, but mountains of water, so high, that there remain'd no hope of saving their lives by flight; expecting every moment when they should be swallow'd up by the sea: So that, the ocean quitting its ordinary bounds, made an excursion for three hundred leagues; overturn'd the houses and trees, and left the country desolate; the ships saly'd over the highest walls, during this wonderfull innundation. Canama, a noted village distant two hundred and thirty leagues from Lima, was destroy'd with its port, and many other places; more especially the town of Arica, which lost in the harbour many ships richly laden, to the value of a million in gold. The mountain Onerate, which, some years since, had vomited out a great quantity of ashes, began a very terrible conflagration, and was followed by a suddain trembling of the earth, which in less than a quarter of an houre, swallow'd up severall villages; that there was scarce ever a more dreadfull earthquake.

It is not unusuall to have innundation of the seas, eruptions of burning mountains, earthquakes, and then violent tempests, like hurricanes, to happen about the same time, and probably from the same cause: For the nitro-sulphureous spirit which causes the trembling of the earth, and that stupenduous commotion of the seas, may afterward break loose into the most horrid conflagrations and winds; especially in such places that abound with these thundring minerals; which, if we consider their active nature, are the fittest materials for hurricanes. I know not how farre it may be thought a confirmation of this, that Braybrook in Northamptonshire, where (as was at large describ'd in the last of the Philosophical Transactions,) there happen'd that dangerous whirlewind the last year, has been a place much subject to earthquakes. But I return from this digression to the hurricanes of the West Indies, where it seems to me very odd, that they should be so dreadfull in some places of the Caribbe Islands, insomuch that Mevis and St. Christophers have severall times been almost depopulated by them, when they never reach to Jamaica, on the one side, (hapily as lying without the vortex of the whirlewind,) nor on the other, beyond Barbados, where they have seldome more then the tail of an hurricane, though it is not farre situate from St. Christophers, Porto Rico, Gardaloupe, and other islands, where they rage with the greatest violence.

They are no strangers to the Moluccas and Philippines, and we have most incredible relations of the stormes in the way to Japan, which have carry'd ships a considerable distance from the sea, up the dry land: some have been miserably wreck't, and bury'd in the waves, others split in a thousand pieces against the rocks, that scarce one ship in five escapes these disasters in the tempestuous months about autumn, or at the change of the monsoons. From hence we may collect this considerable remarque. That they never happen but on the eastern shoars,

where they are fatal to the Chinese and Caribbe seas, and so farre as the River of Plate; likewise to that part of Africk from the Cape to St. Lawrence,* and the adjacent isles: when they are altogether unknown to the African Ocean, from the Canaries to Cape Bon Esperance, are never heard of at New Spain, or the coasts of Peru, nor towards any other western parts of America; because there the winds, which blow off from land, make no opposition against the generall brise, but comply with the constant motion of the air between the tropiques, from east to west: For the shifting of the trade wind from the easterly points, is usually the first onset of an approaching hurricane.

Yet, however these suspicions of mine be receiv'd, I think it cannot be rationally disputed, but that those direfull tempests have their first from the western continent, for we seldome encounter them very remote from land, and the experienc'd masters of ships are never jealous of hurricanes in the spacious ocean; or, if they perceive them coming, immediately make out to sea, where their fury is much lesse, then neer the shoars.

They are the most to be dreaded about the end of summer, in the months of July and August; for both winds and seas, imitate the motions of the sun, and being dilated by the Celestiall heat, annually revert from north to south; and from south to north again; so that the sun hasting from one tropique to another, causes the like suddain conversions in the currents and winds; and being the most universall efficient, must needs be principally concern'd in all vicissitudes of the sublunary world.

(To be concluded in our next.)

AUSTRALIAN NAVIGATION.—*Mordaunts Shoal, at the entrance of Bloomfields Rivulet.—Australia, Eastern coast.*

THIS shoal is not laid down in any of the charts, and is very dangerous for ships running into Weary Bay, particularly during the night, or any other time after sunset. It is of small extent, not more than half a ship's length over, and nearly dries at low water, at which time it slighty breaks; it is composed of hard sand, and the vessel struck heavily on it, and had it not been for the assistance of the other ships she must have sustained much greater damage. I made the position of the shoal to be in latitude 15° 54′ south, and longitude 145° 22′ east, by chronometer corrected at Fitzroy Island. The channel between the sand and the shore is quite clear, and a ship may run in within three-quarters of a mile of the shore, carrying four and a half, and four fathoms. The shoal bears from the entrance of Bloomfields Rivulet N.E.b.E. off shore about two, or two and a half miles. Should a ship be steering for the bay from the southward, by paying strict attention to the lead, will receive notice of the approach towards it, having passed Cape Tribulation at the distance of two, or two and a half miles. If the sounding decrease to nine fathoms, and then quickly to seven, and six and a half, she should haul in for the shore, and run along it at the distance of about one mile in four or four and a half fathoms, rr if dark, it would be prudent to anchor immediately. I observed this

* Now called Madagascar.

shoal last voyage, when weighing from the northern part of the bay, in company with her Majesty's brig Britomart, but as Captain Stanley and officers contended that it was not a shoal, I concluded that I was mistaken.

N.B.—But it is now evident that this is the same that I saw before, and being a new discovery, I have named it Mordaunts Shoal.

Two shoals bearing east from north 8°, showing brown, and not very plain until very close:—we were forced to haul very quick to the eastward to clear them.

J. MORDAUNT.

An extract from Captain Mordaunt's log, of the ship Canton.

"At 4h. 30m. abreast of Cape Tribulation: at 5h. 30m. shortened sail and ran for Weary Bay: at 6 suddenly shoaled our water to nine fathoms, eight, seven, and six and a half, decreasing rapidly; rounded to and brought up with the bower in six fathoms,—the Robert Henderson immediately rounded to and brought up likewise, about half a cable's length to the southward and westward of us. The Bencoolen, in giving us a berth of about a cable's length, grounded on a sandbank to the eastward of us, and remained fast,—immediately lowered the cutter, and went with eight hands to assist in getting her off: got a hawser from the Robert Henderson, and also run out a stream anchor, and hove a heavy strain, the Robert Henderson having taken her hawser to their windlass. After letting go their second anchor, for fear of their first coming home, at nine sent the remainder of the crew to assist in heaving her off; about 10h. 20m. got her afloat, and anchored her in six fathoms ahead of us, but not before she had knocked her rudder off, having broke four of the pintles."

NEW REEFS AND ISLANDS.—*Australia.*

9, *Upper Park Street, Greenwich, Oct. 5th*, 1840.

Sept. 21st, 1836.—AT 6 A.M. weighed with a moderate breeze from N.E. by eastward, and stood for the eastern side of the large Palm Island. Mount Hinchinbrook, (which has a rugged summit and several peaks,) visible from the deck. At 8 A.M. this mountain bore N.W.b.W.—Palm Island No. 2, W.S.W. Ran to the northward along the group of the Palms, at the distance of four or five miles, and at 11h. 30m. A.M., discoloured water was seen about one-third of a mile on the starboard bow,—altered course to clear it, and passed one-third of a mile from an (apparently) shoal patch of coral. When its extremes bore E.N.E. and N.b.E., and the vessel was one-third of a mile from the body of the shoal; the following bearings were taken with an azimuth compass:—

South-east point of the large Palm Island S.S.E. ¼ E. easterly, (magnetic.)
North-west point of ditto . . S ¾ W. . "
Northward peak of Mt. Hinchinbrook N.W.b.W. ½ W. westerly "

From the masthead it appeared to be three-quarters of a mile in length, north-west and south-east, and one and a half cable's in breadth at its centre, narrowing towards each end. One cable's length to the eastward of it are two small round patches, with deep water between them and the large shoal!

The bearings given above, with *the variation* marked in the *chart*, will place the bank a little distance *outside* Captain King's tracks, I think; for having no chart by me, and four years having elapsed since I marked it in the "Zebra's," I cannot speak with certainty. Some miles to the eastward of it, and in about the same latitude, a reef is placed, (marked PD,) on which the San Antonio struck. In a book of directions by Captain King, which I procured at Sydney, it is stated, that she struck during the night. I think it possible from this circumstance, the reef seen by us may be the one she got on. The bearings may be relied on,—although not specified in degrees, &c., as I was most particular in taking them.

Relative to the second reef seen by us to the westward of Booby Island, I find the following remarks. October 11th, 1836.—At 6 A.M. Booby Island E. $\frac{1}{4}$ S. five miles; at 7 A.M. it bore E.b.N. twelve miles. Steered as follows,—W.S.W. 6·2 miles; W.b.S. $\frac{1}{2}$ S. thirteen miles, till 10 A.M., at which time, discoloured water was observed three points on the larboard bow, one mile and a half distant, extending in an east and west direction about one mile, and about an eighth of a mile in breadth. The east and west extremes appeared to have the least water on them. The "Zebra" passed about a mile and a half to the northward of it, and its outline was distinctly seen from the masthead:—its position was ascertained as follows:—

Departure course, true	S. 80° W.	12′	2·1 S.	11·8 W.	
Run .	S. 69 W.	6·2	2·2	5·8	
Ditto .	S. 74 W.	13·0	3·6	12·5	
Bearing of reef, *when seen*	S. 41 W.	1·4	1·1	0·9	
			9·0	31·0	diff. long. 31′ 33″
Booby Island by Capt. King	lat. 10° 36′ 0″ S.			long. 141° 52′ 50″ E.	
	9 0 S.			31 33 W.	
Position of reef	10 45 0 S.			141 21 17 E.	

The variation by amplitude in the evening, with the brig's head W.b.N. $\frac{1}{2}$ N. was 1° 22′ east, which has been allowed in correcting the courses, &c.

This reef is some miles to the southward of Flinders track, and I could not help remarking, that the soundings obtained by him immediately to the northward of this position, are less than they are a few miles to the eastward and westward, as if a sub-marine ridge existed running north and south, and approaching the surface at the spot seen by us.

In the *Nautical Magazine* for August, 1840, (p. 538,) I see mention made of a rocky islet, which is not laid down in the chart. The same islet was seen by us in the "Zebra," and as evening was approaching, we anchored in consequence. Perhaps the following extract from my remark-book, may enable you to give it an approximate place.

September 15th, 1836, 5h. 30m. P.M.—Observed a small rocky islet on with Cumberland Island, [l1] which does not appear to be laid down in the chart. Came to in twenty fathoms stiff clay, the following islands visible from deck.

[k1] (peak,) north 79° east,—[k] (sloping gradually,) centre north 59° 45′ east.

[k 2] Hummocky (north end,) north 26° 30′ east,—three rocks north 14° east.

[l 2] on with the east end of [l,] north 17° 40′ west.

[l 1] (east end,) north 49° 45′ west,—[l 4] and [l 3] visible between the two above-mentioned islands.

Prudhoe Island, (east peak,) south 11° 30′ east.

The rocky islet, *not laid down*, north 55° 45′ west.

Variation by amplitude, 7° 34′ east.

We afterwards passed three-quarters of a mile to the westward of this islet, but as I was looking out at the masthead at the time, no bearings were taken of it, when on with the other islands, which is a great pity, if its position is not already known at the Admiralty.

J. L. Bailey, *Master R.N.*

[The remark alluded to, appears in the journal of the ship Arabian, and trivial as it seems in itself, with the foregoing bearings, (which agree remarkably well excepting that of [l 1],) it enables us to fix the position of the rocky island on the chart, and we infer from the whole that it is in latitude 20° 57′ south, and longitude 149° 25′ east. This is a good instance to shew how useful remarks, however trifling they may appear, really become, when used in conjunction with others bearing on the same point. The distance of the rock south of the island [l 1] gives its distance from the Zebra's anchorage, on the bearing given by Mr. Bailey, and hence its position, for which there is no other authority.—Ed. N.M.]

Dangers in the Carimata Passage and Strait of Sunda.

Jerusalem Coffee House, Sept. 6th, 1841.

Sir.—I beg to communicate through the medium of your valuable periodical, for the information of commanders navigating the Eastern seas, a correct statement of the loss of the ship Catherine, under my command in the *Carimata Passage*, on the 17th of December, 1840.

At 2h. 15m. P.M., struck on a ledge of rocks, with *East Island*, (*the easternmost of the Montaran or Martaban Group*, bearing W. ½ N., and *Carimata Peak* N. 4° W., *distant from East Island eight miles*. This reef which is formed of sharp pyramidal coral rocks, extends north-west and south-east a cable's length, and the least water found on it was two fathoms.

When aground had three fathoms over the stern! a quarter less three from the break of the poop on both sides; two fathoms from either fore channels; over the bows two fathoms and a half; one hundred yards ahead, seven, twelve, and eighteen fathoms; to the north-west at rather less distance from the ship four, five, seven, and nine fathoms; to the south-east a short cable's length *no bottom* with twenty fathoms line; at half a cable distant nine fathoms; and a boat's length nearer the ship a quarter less three fathoms.

Though we found a very strong current setting to the southward, yet there was no appearance of broken or discoloured water; nor any indication which would cause a careful navigator to apprehend danger.

Subjoined is an extract from the log-book of the bark, Justina of Batavia, belonging to Messrs. Maclaine, Watson, and Co., agents for Lloyd's at that port; which vessel was despatched by them to the wreck.

"At 6 A.M. saw *Eastern Montaran Island*, bearing W.b.S. ½ S., twelve miles off; at 9 came to in with the stream in eighteen fathoms mud; centre of Eastern Montaran Island W. ¾ N., six miles distant; a shoal W.b.S. two miles off, sent a boat to examine the shoal; about one hundred yards all round had from ten to eighteen fathoms, shoaling suddenly towards it. The boat went over it, and had very irregular soundings, *from four feet to five fathoms; in the centre of the shoal, a coral rock three feet above water;* all over the shoal rocky bottom. About a ship's length from this shoal, shoal-water extends from W.N.W. to E.S.E. about one mile and a half, with four to ten fathoms rocky bottom."

The first of these shoals examined by the commander of the Justina, is evidently the Discovery Bank laid down in Ross's Survey; but the last mentioned one must have grown up since that period, as it is not laid down in Horsburgh's charts. The weather was squally and unsettled, which prevented his obtaining a sight of Carimata Island for a cross bearing; nevertheless the bearing given above, places it very nearly in the same position assigned to the Discovery Bank in Horsburgh's charts of the Carimata Passage.

I have not met with any chart, Dutch or English, wherein the reef on which the Catherine struck is laid down; nor is it known to any of the commanders of country vessels of whom I enquired, though I was informed at Batavia, that a government schooner commanded by one of the then lieutenants of the guard-ship, was wrecked on this spot a few months previous to the loss of the Catherine.

The Justina appears to have anchored *two miles to the westward of the reef, and southward withal:* she was at anchor only four hours when the chain parted, which prevented her commander making a more particular survey.

The bearings I have given may be relied on, as the ship laid quite quiet at first, and the weather being very clear, Carimata Peak and Island were very distinctly seen. From good observations obtained at noon, I place the reef in latitude 2° 31′ south, and longitude 108° 59 east.

In conclusion, I strongly recommend all commanders not to borrow nearer East Island than four leagues, which will carry them a large league clear of this danger: but, I should prefer the passage between Sourouton Island and Ontario Reef, especially during the night, taking care to pass close round the south point of the island, by which course the dangers adjacent to the Montaran Islands and east coast of Billiton will be avoided.

I am, &c.,

CHARLES S. EVANS.

P.S. I am not aware, if it be generally known, that a rock has been discovered in the fair-way out of Sunda Straits, with eighteen feet water on it, and bearing from the Button N. ½ E., distant two miles. An American ship struck on this rock in 1840, and a portion of it was found in her bottom when docked at Boston.

The Voyage of the ship Florentia.

[Concluded from p. 543.]

On the 10th of June we sailed from Manila with light flaws of wind from all points of the compass, and the current setting us to the south-west. The ship Canton passed us abreast the Corregidor: we left this ship in Sydney ready for sea, when we sailed. 21st. Noon, latitude 14° 17′ N.; working to windward, but unable to make any way, the swell setting the ship towards Manila Bay. 6h. 30m. tacked to the north-west, finding it impossible to proceed to weather St. Jago Point. 22d. Strong swell and current on; finding it impossible to proceed to the southward or westward, the ship deep, I determined on proceeding to the northward (as advised by Horsburgh,) and proceed through the Pacific to Pitt's Passage. 23rd. Winds south to S.S.W.; made all sail. 8 A.M. Cape Capones bore east, forty miles; agreeing with chronometer.

27th. Latitude 18° 41′ N., longitude 119° 48′. 28th. Saw Claro Babuyan S.E.b.E. ½ E. At 6, Calayan south, Bashee north-east, and Babuyan S.E.b.E.; a strong current setting northerly. 29th. At noon Babuyan S. ½ W., Balentang S.b.S.: a tremendous rush of current through these islands, the ship's head south-east, and going three knots, yet barely making an east course, and passing the islands very slowly. 30th. Current still the same. These islands, the Babuyan and Bashee, extend from the north coast of Luconia to the island of Formosa: all the channels among them are considered safe, there being no hidden dangers; the current sets very strong to the north-west, north, and north-east, for which a great allowance ought to be made. We had a current of full two knots between Balentang and Babuyan. Several islands are volcanic, the extinct volcano on Camiguia may be seen sixty miles off. There is a volcano on the west end of Claro Babuyan, which drove the inhabitants off it, in consequence of its violent eruptions, they are now settled at Fuga. Most of these islands are very high, and well inhabited, except Babuyan Lapurip, and the Northern Bashees. The inhabitants furnish ships with provisions very cheaply, a bullock being sold from two to four dollars. The South Bashees abound in bullocks, pigs, and poultry, and they have plantations of sugar-cane, Indian corn, sweet potatoes, and fruits of various kinds.

This season of the year, I should be convinced is the worst for making a passage to Europe quickly. When I left Manila, I found I could neither get to the southward or westward, in order to attempt a passage through the Mindoro Sea, or the Straits of Manila, and consequently I was induced by the observations and remarks of Horsburgh, (the undoubtedly first authority,) to proceed into the Pacific by way of the Bashee Islands.

From the 7th of July till the 13th, very light winds from east, south-east, and south: current strong from south-east, three-quarters of a knot per hour.

23rd. Had a sudden shift of wind, with a heavy squall from the northward, torrents of rain. The largest of the Pellew Islands, Bau-

belthouap bearing east, distant about eight miles; the wind hanging so much at north-west, blowing strong with the current made it very doubtful that we should weather these islands. They are very dangerous to be near particularly at night, very extensive reefs and banks lying on their west side nearly twenty miles from them. The inhabitants were formerly very hospitable and kind to Europeans, but lately they attempted to surprise and cut off a whaler while passing the southernmost island. They were beaten off, two of the ship's company were killed, and nearly all the rest wounded, some severely.

24th. A strong gale W.S.W. and S.W.; sea getting up. Noon, latitude observed 5° 34′ N., longitude 133° 57′ E. We are now in the belt of current described by Horsburgh as running from thirty to sixty miles to the eastward in twenty-four hours. 25th. Very confused sea on; ship pitching very much, the current has set us forty-two miles S.E.b.E. 26th. Current this day forty miles from W.b.N. 27th. Current set to the eastward this day thirty miles. 29th, 30th, 31st. Current from the northward. On the 31st., latitude 0° 50′ N., saw the high foreland of New Guinea, about eighty miles: a dead calm on.

On the 1st of August, towards night breeze freshened. 2nd. Blowing a fresh gale, the sea getting up very rapidly, and running very quick and irregular. 3rd. Wind increased from south-west: at 7 a strong gale, a very cross sea running; clear sky; noon, moderated. 4th, 4 A.M. A calm faint easterly breeze. 5th. Light breezes, calms and flaws; saw land very indistinct, latitude observed 0° 9′ N., longitude 132° 25′ E. In the afternoon made the land out very clear, agreeing with chronometer. At 3h. our distance from the Yowl Islands was fifty-seven miles, bearings W.N W. On the 6th, though four hands were looking out, and could discern nothing, I heard the roar of the surf on the reefs round the islands. Wore ship and stood to south-east, at dawn wore again to the north-west; and at the same time saw the Yowl Islands, their extremes bearing W. ½ N. to S.W., about eight miles distant; steered round their north end, they are low and covered with trees, and the sea breaks high round the reef near the largest ones. The high land of Onarids or Waygiou in sight, and gives our latitude 0° 45′, and longitude 131° 20′ E. by the bearings. At 10h. saw an island bearing south-west. This island is not marked on the charts or described by Horsburgh; at 11 it bore S.W. ½ S., seen from the deck. At the same time the southern and westernmost one bore S.S.E. ¾ E., about fifteen miles; the largest and highest island next east of it S.E. ½ E., distant about twelve miles; and the largest northern island E.S.E. about fourteen miles. Passed this island 50m. past noon, when it bore south of us about eight miles distant. From the course we have steered this morning, it must bear W.S.W. of the large northern Yowl Island, and is distant from it about twenty-six miles; its latitude from the observation of the day is about 0° 37′ N., it is low and covered with trees. When we were north of it only the two south-western islands could be seen, and they were very indistinct.

10th. Saw the High Island of Pulo Pisang, south-east about twelve miles. The Lawn Islands, S. ½ W. and Pulo Kekik, S.S.W. Taking every advantage of the winds in tacking ship. These islands have a very pleasant appearance, being covered with trees, from their summit

to their base. Pulo Pisang appears steep close to, but the others have sandy beaches round them; passed Pulo Kekik about two miles distant, but could observe no signs of its being inhabited. These islands form the southern end of the Gillolo Passage which from adverse winds we have beat the ship through.

12th. The island of Bouro in sight, very high land, mountains appearing above the clouds. Latitude 2° 30′ S., longitude 116° 50′ E, Current from eastward one knot an hour. 13th. The Yullu Islands in sight to the northward; these islands are very high and bold of approach there being no sounding till close to the shore. The height of Tomahoe mountain or Bouro Dome by my calculation is 10,307 feet, it is seen sometimes in clear weather 90 or 100 miles off. The wind hanging so much to the S.S.E. and S.E., I determined, as I found I could scarcely weather St. Matthews and Velthoons Islands, to proceed through the straits of Bouton to the Celebeau Sea. 15th, 6h. 50m. A.M. Wangi-Wangi, the northern island of the Toucambasso group, bore S. W.; bore away for the Strait, saw Pulo Comtado, a long island full of hummocks to the southward, and Cadoopy on opening the west end of Wangi. Passed the latter about 4 miles from the north point the current this day from N.E. 25 miles: at 1 P.M. saw the shoal to the southward of Cadoopy looking very discoloured and extensive, its extremes S.E.bE. to E. ½ S., same time the east point of Bouton bore N.N.W. and the north end of Wangi-Wangi N.E. ¼E. I imagine this shoal and the island of Cadoopy are placed in the charts too much to the eastward, by about 5 miles, but these islands and shoals are marked as "little known" and certainly require a good look out when near, or approaching them.

17th, 4 A.M. bore up and made sail, at noon in the straits of Salaya, ran through between south and middle islands, passage about 3 ½ miles wide, experienced an extraordinary rush of tide or current in the strait, and to the westward of it for a few miles. During the night steered courses to run between the Brill shoal and the Postillion isles.

18th. Water discoloured, no soundings at 40 fathoms. Latitude observed 6° 7′ S., longitude 118° 12′ E. 19th. Latitude 5° 40′ S. longitude 116° 14′ E.; at noon fresh monsoon and fine weather. 20th. saw the Solombo islands, bearing west, hauled up S.W. and passed the south side of the Great Solombo about 6 miles distant. Passed to the northward of Pulo Babean or Lubeck. These islands are not much frequented by European ships.

22nd. Saw Watchman Island, one of the Carimon Java Group. 23rd. Latitude observed 5° 42′ S., longitude 107° 39′ E., ran along the outside of Sedary Bank, in seven to ten fathoms: at 6 P.M. wind failing stood in shore, and anchored in eight and a half fathoms off the village of Pakkis; Sedary Bank bearing S.E. 24th. Weighed, crossed the Bay of Batavia, the port apparently full of shipping. Steered for Amsterdam island and passed between it, Middlebury Island, and Outong Java reef. And from thence between the great Cambuys and Maneaters island and reef. 25th. Saw the land, tacked ship, wind variable, taking every advantage of wind to work off the Zutphen islands, got regular soundings 31, 37, 42, and 45 fathoms: at 6h. made the last tack towards the Java shore. Passed the Button at half a

mile distant stood down the straits of Sunda borrowing towards the Java shore off Anjer was boarded by the Resident's report-boat; most ships touch here on leaving Batavia and China to water, &c. At 7h. Squalls from south, torrents of rain, vivid lightning and thunder.

26th. Clear of the land. I have never but once had a fine night in the Straits of Sunda.

From the 4th to this day 26th, have scarcely been out of sight of land, threading our way between different islands, through the Passages and Straits, to get into the Indian Ocean. The distance we have to run to the Cape is about 5,000 miles and to Roderigues Island 2,500.

30th. The Cocos or Keelings islands bearing E.b.S. about 50 miles, Horsburgh says,*—"The value of these islands to navigators, remained unknown until Captain J. C. Ross visited the southern group and found a good harbour where he lay some days putting his ship the "Borneo" in proper order. These isles are now inhabited by Captain Ross, who first discovered the harbour, to which he has given the name of Port Albion, and also the name of New Selma to the village which he has formed at his residence, on the south-eastern island; he has ascertained more correctly that the group extends from 12° 3′ to 12° 14′ S. Their longitude is about 67° 5′ E. The harbour is formed by a circle of islands (coral) and appears to be based upon the walls of the crater of a submarine volcano. An earthquake of considerable strength and duration was experienced on the 25th May, 1829. The harbour has only one entrance for ships, at its northern extremity. Ships drawing more than eighteen feet are recommended not to sail over the bar, but to warp in and then anchor at discretion. These islands produce Cocoa Trees and are only from three to ten feet elevated above the sea."

Wind veered to north-east and north north-east, heavy rain, and dark gloomy appearance.

31st. Similar weather, rain in torrents. Sept. the 1st and 2nd no change or any appearance of better weather, every thing and every body completely soaked, and many of the people without a dry change of clothes; made them wear warm and cloth clothing, and gave them an extra glass of grog, several complaining of illness, but only one laid up. I cannot account for the extraordinary winds and weather we have experienced between latitude 7° and 16° S. and longitude 104° and 60° E. a distance of about 1,000 nautical miles. The winds have scarcely for an hour been to the south of east, but more generally north-east and sometimes even north with a long southerly swell, a very irregular sea, and torrents of rain. I have read all the remarks of Horsburgh attentively, as well as those of other navigators, I cannot meet one similar instance. Horsburgh remarks, "that in the Indian Sea at this season the winds are mostly south-east, and that they sometimes veer to E.S.E. and east in the easterly monsoon which continues six months, and does not cease till November; that the easterly monsoon is a continuation of the south-east trade wind, while the sun continues in the Northern Hemisphere, and that it extends to the equator, the western monsoon not extending to the southward of 10° or 12° south latitude."

It is remarkable that this weather came in with the new moon the

* See an interesting account of these islands in our volume for 1833, p. 578.

26th of August, and ceased with the first quarter the 3rd of September. 8th. Remarkable open, clear, fine weather: at noon, latitude 18° 30′ S., longitude 78° 50′ E., saw the first Pintado, or Cape Pigeon, (*Procellaria Capensis*,) this is very far to the northward of their usual limits. 9th. Very strong trade, and increasing, confused, heavy swell from east and south caused the ship to roll very much, and ship water over both gunwales. 12th. Moderate; noon latitude 20° 34′ S., longitude 70° 30′ E. 1h. A.M. Squally with showers, wind increased to a gale; took in all steering sails, top-gallant sail, mainsail, jib and mizen, and double-reefed the topsails; set fore-topmast-staysail, and storm trisail. Towards evening the sea got up very rapidly, running very quick and hollow; shipped the deadlights and secured hatches: rolling very much and shipping water; sent royal yards down.

13th. Gale increasing, and a tremendous sea, shipping water over both gunwales. The sharp squalls apparently raise the sea. At 10h. A.M. a sea struck and washed inboard, the larboard waist netting boards, and the lower steering-sail-boom alongside, breaking out the iron goose neck; ship lurching and rolling heavily at times. The barometer has been high from the commencement of the gale, and is now at noon 30·42, thermometer 70°, wind S.S.E., latitude observed 20° 45′ S., longitude 67° 33′ E., Roderigues 247 miles, N. 75° W. P.M. Squalls violent, but not long, sea subsiding. The mercury is so high (higher than since I left Manila,) I cannot imagine the gale will last, but a few hours; sun set moderating, but much sea on.—*Mem.* Distance ran this last week is 987 miles.

18th. The finest day we have had since we left the Straits of Sunda. At noon, Isle Bourbon distant 173 miles N. 7° E. 4th October. At noon, latitude 32° 33′ S., longitude 31° 10′ E., Cape Natal N. 5° W., distant 161 miles, (Cape of Good Hope 670 miles.)—This week we have ran 640 miles only.

9th. Tremendous gale north-west, ship hove to. 10th. Moderate: at night commenced a gale from north-west, again hove to. 11th. Tremendous gale and sea, latitude south 35° 58′, longitude east 21° 45′. Cape of Good Hope 190 miles, N. 60° W., Cape Agulhas 114 miles, N. 54° W.; thermometer 64°, barometer, at midnight, 29·79, at noon 29·97. Still hove to under close-reefed main-topsail.—This last week we have ran 528 miles only.

12th. Gale continues, with a furious sea breaking over every part of the ship. I have seldom witnessed it more fierce, short, and violent; towards night it moderated. 13th. Light breezes; noon, latitude 37° 13′ S., longitude 20° 28′ E., a very strong current yesterday and to-day, set 102 miles nearly west. 14th. We have been ten days from Cape Recif to the Cape of Good Hope, but have had only two heavy gales from north-west and west.

The Log of the barque Charlotte of Alloa,

From the 11th to the 19th April, 1840.

The following extract from the log of the Charlotte is inserted here, with a view to some remarks respecting her loss in a future number.

H.	K.	P.	Leeway.	Barom.	Courses.	Wind.	Remarks.
6	7	1					*Sunday, April 11th.*—Noon; Madeira south point bore north-west.
8	7	1					
10	7	1					Desertas south end W.N.W.
12	7	1					Lat. obs. 32° 31′ N.
					Lat. ac. 32° 31′	Long. ac. 15° 55′	Long. by chr. No. 289, 16° 15′ 15″ W.
							" " 784, 16 27 00 W.
2	7	1			S.W.b.W.	N.E.	*Monday 12th*, P.M.—Strong trades and fine weather.
4	7	1					
6	8						
8	8						
10	8						Middle part; ditto winds and weather.
12	7	1					
2	7						8 ditto weather.
4	6	1					
6	7						
8	7	1				E.N.E.	
10	7						
12	7	1			Lat. ac. 30° 03′	Long. ac. 18° 06′ W.	Lat. obs. 30° 06′ N.
							Long. chr. 18 15 W.
S. 38 W 178							
2	8				S.W.b.W.	East	*Tuesday 13th*, P.M.—A fresh trade and cloudy. Hands employed getting a preventer sling on the main yard, and repairing the old main-topsail.
4	8						
6	8						
8	7	1					
10	8						
12	8						
2	7						Middle part; very variable and blowing in gusts.
4	5	1					
6	5	1			W.S.W.	S.E.	
8	5	1					
10	5	1					Noon; ditto winds and weather.
12	5	1					
					Lat. ac. 28° 05′	Long. ac. 20° 12′ W.	Lat. obs. 27° 48′ N.
S. 42 W 164							
2	7				S.W.b.W.	E.S.E.	*Wednesday 14th*, P.M.—Commences with a fresh breeze, and squally, cloudy weather. Carried away the flying jib-boom. Hands employed making spunyarn, and repairing main-topsail.
4	6						
6	6						
8	6						
10	6						

H.	K.	P.	Leeway.	Baron.	Courses.	Winds.	Remarks.
							Wednesday 14*th*, P.M.—*continued.*
12	2	1					Middle part; variable and calm with
2	1	1				Variable.	rain.
4	1	1					
6							10 A.M.; a light breeze from the north-
8					Calm.		westward, set the studding-sails.
10	3				S.S.W.	N.W.	
12	4						
							Lat. obs. 26° 43′ N.
S.	49	W	87		26° 48′	21° 16′	Long. chr. 21 33 W.
2	6				S.b.W. ½ W.	N.b.W.	*Thursday* 45*th*, P.M.—A moderate steady
4	6						breeze and fine clear weather. Employed
6	6						repairing the main-topsail and old top-gal-
8	5						lant sail, making spunyarn, &c.
10	5						
12	4	1					Midnight; ditto winds and weather.
2	4	1					
4	4						
6	5						Noon; ditto weather.
8	4	1					
10	5					N.b.E.	
12	5	1					Lat. obs. 24° 44′ N.
							Long. chr. 20 44 W
South		118			25° 25′ N.	21° 16′	Current S. 15°, W. 43′.
2	6				S.b.W. ½ W.	E.N.E.	*Friday* 16*th*, P.M.—A fresh steady breeze
4	6						and clear weather. Hands clearing fore
6	6	1					hold for water, and other useful jobs.
8	7				S.S.W.		
10	6	1					Midnight; ditto winds and weather.
12	6	1					
2	6						
4	7						Latter part; a fresh breeze, watch em-
6	7						ployed setting up bobstay, &c.
8	7						
10	7	1					
12	8						Lat. obs. 22° 12′ N.
							Long. chr. 21 19′ W.
S.	10	W	162		22° 05′ N.	21° 55′ W.	
2	7	1			S.S.W.	East	*Saturday* 17*th*, P.M.—Fresh trades and
4	8						gloomy weather. Bent the cables.
6	8						
8	7	1					At 8; squally and cloudy; in all steering
10	7						sails and top-gallant sails.
12	7						
2	6	1					At 4 A.M.; more settled, set the top-
4	6	1					gallant sails and topmast-studding sail.
6	6	1					Daylight; fine, set all possible sail.
8	6	1					
10	6	1			S.b.W. ½ W.	Varlable	Noon; moderate, and hazy.
12	6	1					
							Lat. ac. 19′ 27′ } Lat. obs. 19° 41′ N.
dist. 167 per log.							Long. ac. 21 41 } Long. chr. 21 33 W.

H.	K.	F.	Leeway.	Barom.	Courses.	Wind.	Remarks.
2	6				S.b.W. ½ W.	E.N.E	*Sunday* 18*th*, P.M.—Steady trades and
4	6						fine weather. Employed getting the an-
6	7						chors over, and other sundry jobs about the
8	6	4					rigging. Carpenter caulking the pinnace.
10	7					N.E.	Midnight; ditto wind and weather.
12	7						
2	7						At 8 A.M.; a strange sail in sight, stand-
4	6	4					ing to the southward and eastward.
6	7						
8	6	4					Noon; steady trades and fine.
10	6	4					
12	5	4					Lat. obs. 17° 4′ 0″ N.
							Long. chr. No. 288, 21° 47′ 45″ W.
							" " 784, 22 0 0 W.
							Lat. ac. 17° 2′ N.
dist. 159 pr log.							Long. ac. 21 41 W.
2	6	1			S.S.W.	N.N.E.	*Monday* 19*th*, A.M.—Steady trades and
4	7				S.W.		hazy weather; set starboard steering sail.
6	6	1					At 6; ditto breezes and hazy.
8	6						At 7h. 50.; observed breakers close ahead,
10							instantly put the helm to starboard and
12							braced the yards forward, ship struck; im-
2							mediately let go top-gallant and topsail hal-
4							liards; ship still striking heavily, and the
6							surf breaking on board. Ship on the reef
8							from ten to fifteen minutes, during which
10							time she struck very heavily; sounded the
12							pumps, two feet water in the well, and
							sounded alongside in five fathoms; set both

pumps going, and set topsails and courses; observed breakers on the lee bow, which we just cleared. Ship going about E.N.E. at the same time found the rudder disabled. Sounded the pumps and found three feet and a half in the well, still kept the pumps going; sounded a short time after and found five feet, ship still gaining fast, and both pumps going. Sounded again and found eight feet, pumps still going. Commenced to clear the boats, and very shortly after the water was in the between-decks; got the boats over the side, and put passengers, and a little provision and water in them. At midnight found we could do nothing more, pumps being of no service to keep the ship up, and sinking fast, all hands got in the boats, at the same time the water coming in the cabin windows, and level with the lee side of the main deck. At 30m. A.M. the ship disappeared,—lay-to in the boats until daylight, Bonavista bearing north-west; proceeded to St. Jago with crew, passengers, and two boats, where we arrived on Tuesday at noon, the 20th of April.

[The foregoing is a copy of the Charlotte's log, from the departure from Madeira to the time of her loss, and as it is important that the position of the reef she struck on should be made known, we shall be thankful to any of our readers who may have sufficient leisure and inclination to work the days' works and send us the results. Those unaccustomed to merchant ships' logs will observe, that the knots against each hour must be *doubled*, as they stand for that hour and the preceding.—Ed. N.M.]

Rodger's Anchor.—*The Ryde experiment.*

In several former numbers of this work, we have had occasion to allude to the merits of Rodger's anchors; not that they are unknown, or that they are not extensively patronized, as we shall presently show; but that we were desirous of recording and placing conspicuously before our readers, (as in duty we felt bound to do,) the most perfect machine of its kind yet made, along with the proofs which entitled it to be so considered. An old seaman once remarked to us respecting this important item of a ship's furniture, on which the safety of the ship, and the lives of all on board frequently depend, that "although to outward appearance it was perfect, yet the common anchor was the most fatally deceptive article on board!" And any one who has had any experience of the breaking of anchors, which of late years has become so common, or who witnessed a recent series of experiments on Ryde Sand, can be at no loss to subscribe heartily to the opinion above quoted.—The former speaks for itself. In bad weather the breaking of anchors, owing to bad construction, is common enough, but there is another feature in the anchor which is no less fatal to its good properties than "bad construction," and that is "bad form," with which, be the ground ever so favourable, an anchor is worse than useless. This last assertion was fully verified by the experiments to which we have alluded, and which showed distinctly that while Lieut. Rodger's anchor, from its peculiar form, had a downright tendency to bury itself, the greater the strain exerted upon it; the common anchor, (that indeed used in her Majesty's navy,) had directly the reverse quality. No sooner was a strain applied to it, than unable from its form with its immense palm, to enter the ground, it ploughed its path along towards its opponent as the latter lay snugly buried in the sand, reviling as it were the inert fuming of the other anchor.

The foregoing will be more intelligible when we describe the preparations for these experiments, which were witnessed by "a large concourse of spectators," among whom were many naval officers. They were conducted officially by Mr. W. Purdo, the master-attendant of Portsmouth dockyard, and Mr. W. Miller, the master of the Victory, with 80 men supplied from her Majesty's ship Impregnable, at Spithead, and certainly never was success more completely triumphant, than in the properties of Lieut. Rodger's over the common anchors. The anchors to be tried, were placed at about a hundred feet apart on the sand, the stocks towards each other. A three-fold block was secured to each, and rested on a small sledge to keep it off the sand, and at the two ends of the fall were stationed forty men. The anchors being placed, the fall rove, and the men at their stations a series of experiments commenced, giving the following.

Result of experiments made on the 27th of August, 1841, upon the sand on the east side of Ryde pier, close to the upper end, in order to ascertain the comparative holding qualities of anchors, as now made in her Majesty's dockyards, according to the tables of dimensions dated Admiralty, the 4th of July, 1840, and the small-palmed anchors and kedges without palms, on Lieut. Rodger's patent principle.

Admiralty anchor	4cwt. 3qrs. 23lbs.	Rodger's anchor	4cwt. 3qrs. 17lbs.
Trial 1st, came home	53ft. 6in.	Trial 1st, come home	3ft. 6in.
Do. 2nd, reversed	58 6	Do. 2nd, reversed	0 0
	112 0		3 6

Admiralty anchor	4cwt. 3qrs. 23lbs.	Rodger's anchor	3cwt. 3qrs. 17lbs.
Trial 1st, came home	58ft. 0in.	Trial 1st, came home	0ft. 0in.

Admiralty anchor	4cwt. 3qrs. 23lbs.	Rodger's anchor	2cwt. 2qrs. 14lbs.
Trial 1st, came home	48ft. 6in.	Trial 1st, came home	3ft. 9in.

Admiralty anchor	4cwt. 3qrs. 23lbs.	Rodger's kedge	2cwt. 1qrs. 23lbs.
Trial 1st, came home	39ft. 0in.	Trial 1st, came home	0ft. 0in.
Do. 2nd, do.	37 4	Do. 2nd, do.	3 0

During the second trial, one end of the fall was made fast to the kedge, and the whole of the men hauled upon the other end, which led from the block hooked to it, and consequently the first impression came upon the kedge, which clearly proved its great superiority over the anchor.

The following experiments were now made with a heavier anchor upon the Admiralty plan.

Admiralty anchor	6cwt. 0qrs. 3lbs.	Rodger's anchor	4cwt. 3qrs. 17lbs.
Trial 1st, came home	53ft. 3in.	Trial 1st, came home	0ft. 11in.
Do. 2nd. reversed	18 0	Do. 2nd, reversed	42 10
Do. 3rd, as above	17 0	Do. 3rd, as above	40 6
Do. 4th, reversed	58 5	Do. 4th, reversed	0 0
	146 8		84 3

Admiralty anchor	6cwt. 0qrs. 3in.	Rodger's kedge	4cwt. 2qrs. 8lbs.
Trial 1st, came home	30ft. 0in.	Trial 1st, came home	29ft. 2in.
Do. 2nd, reversed	58 0	Do. 2nd, reversed	0 0
	88 0		29 2

The anchors were placed about 100 feet apart, on level ground, consisting of oaze and sand, interspersed with patches of shingle, at the depth of from ten to twenty inches, and drawn together by means of a tackle composed of two treble blocks and a chain fall, having forty men upon each end. It should be understood, that the tackle was not literally hooked to the anchors, which would have represented the ship riding with a long scope, and the chain resting upon the ground. On the present interesting occasion, Lieut. Rodger had recourse to a very

simple contrivance, in order to make the experiments more generally satisfactory. To effect this, two fathoms of chain was attached to each anchor, the opposite ends being hooked (at the height of one foot,) to two sledges upon which the blocks were placed, so that the sledges represented two vessels moored stern to stern, the cable during the experiment being entirely off the ground. This, we consider, a very fair representation of a ship riding with a moderate scope of cable.

On the 30th of August, another series of experiments was made upon Ryde Sand, having the same object in view.

Admiralty anchor	4cwt. 3qrs. 23lbs.	Rodger's anchor	4cwt. 3qrs. 17lbs.
Trial 1st, came home	49ft. 3in.	Trial 1st, came home	19ft. 6in.
Do. 2nd, reversed	63 6	Do. 2nd, reversed	4 7
	112 9		24 1

Admiralty anchor	4cwt. 3qrs. 23lbs.	Rodger's anchor	3cwt. 3qrs. 17lbs.
Trial 1st, came home	50ft. 0in.	Trial 1st, came home	15ft. 2in.
Do. 2nd, reversed	10 6	Do. 2nd, reversed	54 0
	60 6		69 2

Admiralty anchor	4cwt. 3qrs. 23lbs.	Rodger's kedge	3cwt. 2qrs. 18lbs.
Trial 1st, came home	28ft. 0in.	Trial 1st, came home	38ft. 0in.
Do. 2nd, reversed	59 0	Do. 2nd, reversed	5 10
	87 0		43 10

Admiralty anchor	6cwt. 0qrs. 3lbs.	Rodger's anchor	4cwt. 3qrs. 17lbs.
Trial 1st, came home	49ft. 3in.	Trial 1st, came home	18ft. 2in.
Do. 2nd, reversed	60 0	Do. 2nd, reversed	6 2
	109 3		24 4

The above experiments were made about a cable's length to the eastward of Ryde Pier, on a level bank of soft sandy ground, intermixed with strong blue clay, at the depth of from ten to twenty inches below the surface. Eighty men from the Impregnable were supplied as before.

It is worthy of remark that the Small-Palmed Anchor never lost its hold, but indicated the peculiar quality of Rodger's anchors; namely, a constant tendency to penetrate deeper; whilst the Admiralty anchor became partially "shod," and in some instances when obstructed by gravel did not take hold at all.

Had the ground consisted of stiff clay to the surface, we are fully convinced that the Small-Palm would have exhibited a still greater superiority.

The foregoing results speak for themselves, and show the extraordinary tenacious power of Lieut. Rodger's anchor as evidently on paper, as was witnessed on the sand. Indeed, the experiments excited considerable interest among nautical men, while they were going forward; and the burying propensity of his anchors in contrast with the tendency of the Government anchors to lift themselves out of the sand, was remarked by all present. There are one or two facts on this subject which also should be recorded. It is asserted by Lieut. Rodger from experiment that one of his anchors on good holding ground will bring home the common anchor of twice its own weight! It is also stated by him that instances are very rare of his anchors being *broken*, but there are many instances of cables having *parted* from them, a sufficient proof in itself of the good holding qualities of the anchor. In our June number of last year we gave an instance of a kedge of Lieut. Rodger's employed to bring up a vessel at her launch being bent in a remarkable manner from the strain occasioned by the vessel's way from her slip, and we believe there is now an anchor in Portsmouth Dockyard of 20 cwt., from which her Majesty's ship Zebra parted in the bay of Acre, *bent* in a surprising manner, shewing the rough treatment it has undergone, and which might have broken a common anchor under similar circumstances.

These good qualities are sufficiently appreciated by the mercantile marine of this great country, among which Lieut. Rodger's anchors are used to a large extent, and we shall conclude this notice with a few testimonials which have been drawn up by various associations of merchants connected with shipping, involving an insured capital of a very considerable amount. But we shall first repeat here the instance of the kedge above alluded to, and then place on record a few former experiments to test the properties of the anchor under the inspection of some of these gentlemen.

The following testimonial of the holding property of Rodger's Patent Kedge, without palms, appeared in the *Nautical Magazine* of June, 1840.

Pacific Steam Navigation Company's Office,
5, Barge Yard, Bucklersbury, May 15th, 1840.

My dear Sir.—Having lately subjected "Lieut. Rodger's Patent Kedge" to a most extraordinary trial, I feel it would not be doing justice to that gentleman, or my nautical brethren, not already acquainted with the peculiar merits of this paradoxical anchor, were I not to give the circumstance as much publicity as possible.

I have, therefore, to ask the favour of your inserting the following in your valuable little work, and remain,

Yours, &c.,

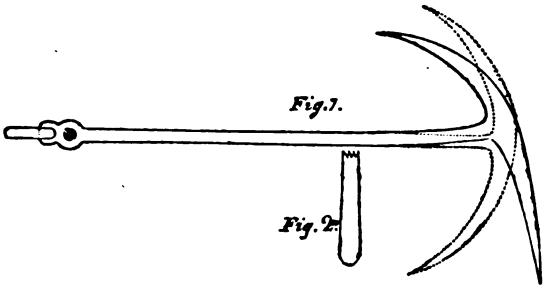
To the Editor, &c. Geo. Peacock.

"On the 18th ult., when the Pacific Steam Navigation Company's ship "Peru," of 700 tons, was launched, one of Lieut Rodger's Patent Kedges, of only 2 cwt., was let go, when the ship had run about her own length clear of the ways, with the stream chain eleven-sixteenths, bent

to it; the Anchor bit so suddenly, that it was found impossible to check the cable, although with three turns round the body of the windlass; it therefore ran out to the end, and brought up with a sudden jerk and most tremendous strain. I thought at the moment the chain would have parted, but so firmly did the Anchor hold, that before it yielded the fluke straightened out, and the shank bent, assuming the form shewn in the diagram, which is a faithful sketch from actual measurement taken on landing the Anchor.

LIEUT. RODGER'S PATENT KEDGE WITHOUT PALMS.

Fig. 1.—A side view of the kedge with the stock in section; the dotted lines representing the original form.
Fig. 2.—A front view of the arms.



"The tide was running about three knots, the impetus of the ship of course very considerable, and augmented by a fresh head wind; in short, so incredible did the holding power of this comparative pickaxe appear, that had I not been assured of the nature of the ground (mud and sand) where it was let go, by Messrs. Curling and Young's labourers, and by the Pilot's man who weighed it afterwards, I should have imagined it had been hooked to some immovable substance. In order to prove further the fallacy of this opinion which was entertained by many, an Anchor of the same size and description was tried on the Monday following, when the "Chile," another of the Company's steamers, of 700 tons, was launched; it was let go a little further out in the stream, the tide was running strong, but the chain being checked gradually by stoppers, it effectually brought the ship up with thirty fathoms only; and on recovering this Anchor, the fluke was also found partially straightened. The broadest part of the arms of these Anchors (which have no palms) measures only three inches and a quarter.

"What an invaluable Anchor would this be in our vessels of war, to carry out in cases of getting ashore; it may be hove by a landsman, without danger of capsizing the boat, or tearing out the gunwale, an occurrence frequently happening, and the "stream" Anchor made on this plan would, in my opinion, hold where the "bower" on the old plan would come home."*

GEORGE PEACOCK,
Captain Superintendent of the Pacific Steam Navigation Company's Steam Vessels.

* Qy. Provided you had the means of laying it out, for very few of our men-of-war's largest boats will carry a bower anchor.

Result of experiments made on the 18th of September, 1840, upon the Sand on the South side of the Tyne, a little below Messrs. Hawks and Co's manufactory at Gateshead, in order to ascertain the comparative holding powers of anchors, as now made in Her Majesty's Dockyards, and those made with small palms on Lieut. Rodger's patent principle. Weight and length as under, viz.:—

	Anchor.	*Stock.*	*Anchor and Stock.*	*Shank.*	*Arms.*	*Palms.*
	cwt q. lb	cwt q. lb	cwt q. ll	ft. in.	ft. in.	in. in.
No. 1. Admiralty Plan	4 0 10	0 3 21	5 0 3	5 10	1 9⅜	10⅞ × 9⅜
" 2. Lt. Rodger's Do.	4 0 23	0 3 19	5 0 14	6 3½	1 10⅛	5¾ × 9½
" 3. Ditto Do.	2 0 1	0 2 4	2 2 5	5 0½	1 6⅛	4½ × 7¾
	Kedge.					
" 4. Ditto Do.	0 3 25	0 1 0	0 1 25	5 8½	1 9⅜	Without Palms.

						Ft.	In.
Trial 1st.	No. 1 was dragged			54	0,	whilst No. 2 came home only	5 6
" 2nd.	do.	do.		34	0,	do. do.	9 0
" 3rd.	do.	do.		30	6,	do. do.	10 0
" 4th.	do.	do.		23	0,	do. do.	11 0

Note.—After the second trial the anchors were reversed; and during the second, third, and fourth trials, No. 1 was loaded successively with 2cwt., 3cwt., and 4cwt., the weights being suspended to the upper fluke.

						Ft.	In.
Trial 5th	No. 1 was dragged			38	0,	whilst No. 3 came home only	16 6
" 6th	do.	do.		41	6,	No. 4 do.	26 0

Note. After the fourth trial the anchors were reversed, and again reversed after the fifth.

The anchors were placed on level ground, consisting of clean sand, and were drawn together by means of a tackle (hooked to each,) composed of two treble blocks and a chain fall, having twenty-two men and two horses upon each end.

WILLIAM RODGER.

Gateshead Iron Works, 19th Sept., 1840.

WE, the undersigned, having witnessed the several trials as stated above, do not hesitate to express our surprise and astonishment at the results, and at the same time declare our full conviction of the great superiority of Mr. Rodger's Patent Anchors over those in present use, both in a national and commercial point of view, as from their great tenacity of holding, it is but fair to presume that they may be the means of preserving many valuable lives, as well as property, and we most respectfully beg leave to recommend their general adoption by the Shipping Interest.

S. DANSON, Master of the Trinity-house and Harbour-master, Newcastle.
THOMAS C. GIBSON, Deputy-Master.
JOHN INGO, Shipowner.
A. NICHOL, Shipowner.
JOHN RIDLEY, Alderman.

JOHN ANDERSON.
A. L. POTTER, Alderman and Chairman of the River Committee.
E. PLETTS.
WILLIAM HOGGETT, Shipowner.
HENRY LIDDELL, Trinity-house.
WILLIAM D. ANDERSON, Engineer.
ROBERT STORY, Shipowner.
WILLIAM BROWN, Shipowner.
THOMAS PIGG, ENGINEER.

The following testimonials are selected from among a multitude, which have been given in favour of the Patent Small-Palmed Anchor.

At the Annual General Meetings of the undermentioned Insurance Associations, held in Newcastle, North and South Shields; the following resolutions were unanimously agreed to, and subsequently printed with their warranties and rules.

North Shields, 22d Jan., 1841.

Eligible Association.—That this meeting strongly recommend the Small-Palmed Anchors invented by Lieutenant Rodger, RN., to the members of this association.

JOHN STOKER, *Sec.*

North Shields, 26th Jan., 1841.

Albion Association.—From the result of experiments, and the numerous and respectable testimonials produced in favour of Lieut. Rodger's Patent Small-Palmed Anchors, the members of this insurance are recommended to use them.

JOSEPH BULMER, *Sec.*

South Shields, 26th Jan., 1841.

Coal Trade Association.—That this meeting being convinced of the superiority of the Patent Small-Palmed Anchors, invented by Lieut. Rodger, RN., recommend them to the members of this association.

THOS. ADAMS, *Sec.*

Newcastle, 27th Jan., 1841.

Tyne and Hope Association.—That from the numerous testimonials in its favour, and the experience of its merits by several members of this association, the Small-Palmed Patent Anchor of Lieut. Rodger, RN., has strong claims to the attention of shipowners, and is hereby recommended to general adoption, when new anchors are required, and more especially in fitting out new ships to those who approve of it.

JOHN ANDERSON, *Sec.*

North Shields, 28th Jan., 1841.

Mutual Association.—That this meeting being convinced of the superiority of Lieut. Rodger's Patent Small-Palmed Anchors, do hereby strongly recommend them to the members of this association.

JOHN STOKER, *Sec.*

Newcastle, 1st Feb., 1841.

Newcastle General A. 1. Association.—That this meeting being convinced of the superiority of the Patent Small-Palmed Anchors, invented by Lieut. Rodger, R.N., do earnestly recommend them to the members of this association.

JOHN ORMSTON, *Sec.*

Newcastle, 2nd Feb., 1841.

Liberal Premium Association.—That from the numerous favourable testimonials and experience of nautical men, the Small-Palmed Patent Anchor, invented by Lieut. Rodger, RN., is strongly recommended to general adoption, when anchors are required, and especially in fitting out new ships.

JOHN ANDERSON, *Sec.*

North Shields, 3d Feb., 1841.

Friendly Association.—That this meeting being convinced of the superiority of the Patent Small-Palmed Anchors, invented by Lieut. Rodger, RN., do earnestly recommend them to the members of this association.

JOHN TAYLOR, *Sec.*

South Shields, 4th Feb., 1841.

Unanimous Association.—That it is the opinion of this meeting, that the Patent Small-Palmed Anchors, invented by Lieut. Rodger, RN., are superior to the common made anchors now in use, and that the members of this insurance are strongly recommended to adopt them.

JAMES W. ROXBY, *Chairman.*
GEORGE POTTS, *Sec.*

South Shields, 14th Feb., 1841.

Nautical Policy.—That it is the opinion of this meeting, that the Patent Small-Palmed Anchors, invented by Lieut. Rodger, RN., are superior to the common made anchors now in use, and that the members of this insurance are strongly recommended to adopt them.

JAMES W. ROXBY, *Chairman.*
GEORGE POTTS, *Sec.*

Newcastle, 5th Feb., 1841.

Total Loss Association.—That this meeting being convinced of the superiority of the Patent Small-Palmed Anchors, invented by Lieut. Rodger, RN., do earnestly recommend them to the members of this association.

JAMES POTTS, *Sec.*

Newcastle, 8th Feb., 1841.

Provident Association.—That this meeting being convinced of the superiority of the Patent Small-Palmed Anchors, invented by Lieut. Rodger, RN., do earnestly recommend them to the members of this association.

ROBERT STOCKS, *Sec.*

North Shields, 9th Feb., 1841.

British Association.—That this meeting being convinced of the superiority of the Patent Small-Palmed Anchors, invented by Lieut. Rodger, RN., do earnestly recommend them to the members of this association.

JOHN STOKER, *Sec.*

South Shields, 9th Feb., 1841.

Sun—Cargo, Freight, and Outfit Association.—The general meeting of the members, recommend the adoption of Lieut. Rodger's Patent Small-Palmed Anchors, in fitting out new vessels, or in replacing anchors that have been lost or become unserviceable.

C. A. WAWN, *Sec.*

The following are the recommendations of Committees.

South Shields, 17th Nov., 1840.

Maritime and Mercantile Policy.—The committee recommend the adoption

of Lieut. Rodger's Patent Small-Palmed Anchors, in fitting out new vessels, or replacing anchors that have been lost or become unserviceable.

JOHN W. LAMB, *Sec.*

South Shields, 12th Jan., 1841.

Sun Association.---The committee recommend the adoption of Lieut. Rodger's Patent Small-Palmed Anchors, in fitting out new vessels, or in replacing anchors that have been lost or unserviceable.

C. A. WAWN, *Sec.*

North Shields, 20th Jan., 1841.

Equitable Association.---The committee and such members of this association, as have used Lieut. Rodger's Patent Small-Palmed Anchors, recommend them to the notice of those who are unacquainted with their merits.

THOMAS ATKINSON, *Sec.*

North Shields, 4th Feb., 1841.

Star—Cargo and Freight Insurance Office.---SIR, I have the pleasure to inform you that at a meeting of the committee of the above insurance, held this day, it was resolved to recommend to the members of this association, your Patent Small-Palmed Anchor. I am, &c.,

To Lieut. Rodger. J. ARMSTRONG, *Sec.*

When we inform our readers that the above associations possess an invested capital of £1,100,350, we think sufficient will have been said to show that Lieut. Rodger's anchor is tolerably well known in the mercantile marine; the number supplied to our merchant shipping amounting to considerably more than three thousand, although a very few of Her Majesty's ships are yet supplied with it. But the extraordinary holding powers of the kedge which appears to be a mere pickaxe renders it especially desirable that every ship afloat should have one of them as heavy as her boat can lay out; as in the event of her getting ashore she might heave off by it without using a bower anchor.

ASCENSION.

THE Island of Ascension is of an elliptical form, its greatest diameter from east to west being seven miles and five-eighths; and its shortest from north to south, five miles and a half. The area of its base at the surface of the sea is thirty-eight square miles, and its circumference about twenty-two miles.

Ascension is of volcanic origin, and of comparatively recent formation, its surface being exceedingly irregular, and presenting, from the sea, a barren and forbidding appearance. The highest peak on Green Mountain is elevated 2,805 feet above the sea, and may, therefore, be seen from a frigate's deck, at the distance of sixty-five miles. The latitude of the summit is, from several observations, 7° 57′ 22″ S., and if the longitude of the fort be 14° 24′, that of the peak will be 14° 19′. From the summit of Green Mountain, about forty tumuli may be seen of different magnitudes, being extinguished craters, which have at different periods of the volcanoes actually given vent to its fires. From many of these craters one may trace distinctly the direction of the lava currents on their way to the sea.

All the different varieties of the lavas of Vesuvius may be found here apparently in a rapid progress of decomposition, so that at some future period this island, like other volcanoes, will be one mass of rich mould. Many of the round conical hills are already fit for being planted with vines; their soil being composed of ashes and a ferruginous earth, a decomposition of calcined ores of iron: of this description is Red Cross Hill, near the anchorage, having an elevation of 870 feet above the sea; but so dry and porous is the soil, that no sooner does the rain fall than it is absorbed and disappears.

The principal cultivation is on and about Green Mountain, where it rains more frequently than on the less elevated parts of the island. The principal garden is 2,500 feet above the sea: here the climate is delightful, the temperature during the day time being generally about 74°, that at the landing place near the fort being 85°. The temperature on the peak is still lower; my thermometer exposed to the current of air sweeping over the peak fell to 60°, this was at one P.M., the instrument being in the shade, and the sun shining at the time. The summit of Green Mountain is covered with rock roses and several species of fern and mosses, indigenous to the island. There may be about 100 acres of land already cultivated, (1830,) and about 1,000 more fit for cultivation by the plough, on and about Green Mountain, independent of many ravines and hollows containing a rich soil, where no doubt fruit and other useful trees will be planted, so soon as the different fortifications shall be complete.

The climate of Ascension is perhaps as healthy as in any part of the world, and its salubrity is no doubt owing to the constant trade wind blowing in a moderate breeze, ventilating and cooling every part of the island; the dryness of the air, and the absence of marsh or moist soils, contribute to the elasticity and buoyancy of the air, and renders the island a most desirable spot for an invalid, who might be transported from Tartar Stairs to the mountain in two hours, the distance being seven miles, from a temperature of 84° to one of 74°.

Abundance of purslane grows among the rocks, stones, and crevices of the cliffs; this vegetable is eaten by the cattle, and is capable of keeping them alive and in tolerable condition, as was evident from a bullock making his escape, and being absent five or six months, during which time he had nothing to eat but purslane.

The animals that are found in a wild state are rats, cats, goats, and land crabs: the cats are numerous, but instead of destroying the rats, they take up their abode in the neighbourhood of places frequented by the different species of sea fowl that visit the island. The goats, rats, and land crabs are great enemies to farming, destroying all sorts of plants and fruit; they are, therefore, killed in great numbers by the garrison, and may ultimately be extirpated.

The weather side of the island is high and inaccessible, with an iron bound coast, and deep water. No part of the coast is accessible from South-west Bay round the south point of the island, and as far as North-east Bay.

From the south point of South-west Bay, and along the lee side of the island to English Bay, there is an excellent anchorage in from ten to twenty fathoms water, sand and mud, within the distance of six

miles, three hundred sail might be anchored at the distance of 100 fathoms from each other, for although the coast from the fort round to South-west Bay be rocky with foul ground extending about half a mile into the sea, as marked on the chart, yet I found the bottom perfectly clear, without the depth of ten fathoms.

I have already stated that upwards of forty craters have in former times been in a state of activity. Now the island lying within the limits of a constant brisk south-east trade wind, the ashes and pummice dust, &c. ejected by the volcanoes, have been carried by the wind into the sea to leeward of the island, and formed an excellent anchorage: the bank thus formed has in the course of time been augmented by vast quantities of small shells ground up together, and polished by the action of the waves; and it is those fine pieces of shells that form the various beaches on the lee side of the island where the sea-turtle deposits her eggs to be hatched by the heat of the sun.

Wherever there is a prevailing current in the air or ocean, at an island, the dust in the air, or the mud in the sea, is carried by the current and deposited to leeward, where a bank is formed on which ships may anchor; this is the case at St. Helena, Ascension, the Madeiras, the Canaries, and Cape de Verd islands, &c.

Ascension is visited by the sea-turtle between Christmas and Midsummer, and it is supposed that during the above period each female makes three or four nests. The animal remains on the coasts of the island till fifty or sixty eggs are fit for being deposited in the sand. She then lands on the beach, between ten o'clock at night and four in the morning, and going sometimes 150 or 200 yards above high-water mark, digs a large pit about eight or ten feet in diameter, and two or three feet deep, where the eggs are deposited and carefully covered with sand; she then leaves them to Nature. In about nine or ten weeks the young turtle breaks its prison, and working its way upwards through the sand gains the surface, and proceeds directly to the sea. Should this journey happen in daylight many of the young animals are picked up and devoured by the man-of-war bird, who may be seen hovering over the turtles' nests. For this species of warfare in destroying the young turtle, the man-of-war bird is shot, or otherwise destroyed by the officers of the garrison.

There are abundance of excellent fish to be caught among the rocks throughout the year, such as rock cod, conger, cavalhois, &c.; they are so plentiful that a boat's crew may catch enough for a frigate's ship's-company. The best place for fishing is on the reef near the anchorage, beginning with a piece of salt pork for a bait, and afterwards cutting up fish for bait. Cray fish are also caught near the mouths of caverns among the rocks towards English Bay, the method is as follows:—Hang a piece of fish or pork by a string a short distance below the surface of the water at the mouth of a cavern, the cray fish observing it will rise to the bait, and may be taken by hand.

The coast to leeward of the island is bold and clear from English Bay to the fort near Tartar Stairs. About a mile to the north-east of the fort there is a small bay with a spot of sand on it, on which a boat may land among wild and irregular climpers: this spot has been dignified by the name of Comfort Cove, and extolled very much above its

real merit. From the foot of Fort Cockburn round to the westward as far as South-west Bay, the coast is, as has been already observed, rocky. The reef runs out about seven-tenths of a mile from the fort in a north-west direction, it is composed of uneven masses of hard pointed lava with spots of white sand in the hollow places; there are many of these pointed rocks on which a ship would strike, and on some of which ships have actually struck; and to prevent such accidents for the future a large buoy is now moored near the extremity of the reef on a rock having thirty feet water on it—the following are its marks:—The flag-staff on the fort in a line with the north-east corner of the jetty, near the crane at Tartar Stairs, and the peak of Green Mountain just touching the edge of Red Cross Hill. Should the buoy be gone by keeping in ten fathoms a ship will avoid all the dangers on the reef.

It sometimes happens that a very heavy swell sets in from the south-westward occasioned by gales of wind without the limits of the trade winds in the South Atlantic. The long swell rolling in *against* the wind, and meeting with shoal water, and the uneven rocky bottom of the reef breaks high, and with violence, sweeping away thousands of tons of sand from the beach into deep water: this sand is again thrown on shore in fine smooth water.

These *rollers** are heaviest when the sun is in the Northern Hemisphere, and storms and tempests in the South Atlantic, in the neighbourhood of Cape Horn.

Two pair of moorings are laid down near the landing-place for the use of H.M. ships: one pair abreast of the middle of the sandy bay to the eastward of the fort, and as near the weather shore as possible. The groundwork is line-of-battle ship's chain, and the bridles are tapered from line-of battle ship's chain to sloop's; the small end being suspended to the buoy for the convenience of being taken *without lighters*. The other pair is laid down near the edge of the reef, one of the anchors being among the rocks, thereby leaving the best of the anchorage unoccupied.

At the inner mooring, in case of necessity, one vessel might be hove down by means of another.

About half a mile inland from South-west Bay, and behind the lava currents, lying near the beach, there is a tract of land of comparatively smooth surface, and of considerable dimensions; the soil is very rich, but so dry and dusty as seldom to exhibit any other verdure than a little purslane. A little further to the south-eastward, and behind some high conical hills there is a sandy plain having an area of, perhaps, twenty or thirty acres. This level is surrounded by the above mentioned conical hills on the north, and on every other side by high ridges of lava, through which the rains have worn finmari, or water courses, by which considerable quantities of sand and pummice have been discharged into the plain. I could trace very distinctly a line of pummice and other floating materials on the foot of the hills along the

* An interesting account of these rollers will be found in the Voyage of H.M.S. Chanticleer, Capt. Foster, by Mr. Webster, her surgeon, who attributes them to the weak south-east trade being unable to keep the surface water of the ocean from flowing down from the northward, and being interrupted by the islands, washing up their beaches.—Ed.

lee side of the plain, left as the *last high-water mark*, and shewing most clearly that at times there has been a depth of several feet of fresh water in the valley, a quantity sufficient to supply the island for many years. This affords the strongest proof of the occasional heavy rains that must fall at Ascension, and points out the propriety of constructing tanks in eligible situations.

The principal supply of fresh water is obtained on the Green Mountain, where there are several drips of water, which yield from 500 to 1,500 gallons daily, according to the wetness of the season. The rain falling on the mountain is absorbed by the porous and light soil, and descends by its gravity till it meets with a thin stratum of pummice dust, which, in the course of time has been in a manner petrified: this arrests the water in its progress downwards, and being generally inclined to the horizon, the water glides along and appears on the surface of a cliff in the shape of a spring. It is to be regretted that the strata above mentioned are *faulty* in so many places that much water passes through the rents, and is lost in the soil below.

There are two very good stone tanks built in the mountain, in contact with and parallel to rocky cliffs. The surface of the rock has been cleaned and gutters cut, by which means all the water that is not absolutely absorbed during rains, on a very considerable surface, must run into tanks. The tanks in the mountain are to be connected with others below, near the landing place at Tartar Stairs, by means of cast iron pipes, the distance between them being five miles.

There are at present tanks of solid masonry, capable of containing 2,400 tons of water, so that the time is not far distant when a ship may obtain a supply of water, vegetables, fruit, fish, and turtle, together with good and wholesome provisions, for the air is so dry and pure that *no condemnation of provisions has yet taken place*, a circumstance highly favourable for the island as a victualling depôt; and if we estimate the value of her anchorage by the degree of security afforded to shipping, then, that of Ascension will be one of the very best, for here the constant south-east wind blows in a moderate breeze. There is neither calm, gale, squall, nor change of wind; so that a ship might lie at single anchor with half cable for any length of time, in perfect safety.

WILLIAM WALKER.

Queen's Harbour-Master, Plymouth.

THE VARIATION OF THE COMPASS.

Royal Observatory, August 28th, 1841,
Magnetical and Meteorological Department.

Mean Magnetic Variation for July 1841=23° 15′ 34″.

MEAN MAGNETIC DIP.

At 9 A.M.	At 3 P.M.
1841—July 69° 9′	69° 14′

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

The Skerries Light.

It will be remembered that, in December last, an action was brought in the Court of Queen's Bench, Dublin, by Messrs. Richardson and Boyce, against the proprietors of the Skerries light-house, for trespass. The latter having seized the steamer Mercury, the property of the plaintiffs, for the non-payment of dues which it was alleged had been incurred by that vessel on a voyage from Cork to Dublin. The plaintiffs obtained a verdict; and we refer to the case because, in the course of the trial, it was clearly shown that under the royal grant which empowered the levy of one penny per ton on shipping by the owners of the Skerries, a large revenue was produced, which was every year augmented; and that it was highly necessary that commerce should be relieved of the tax. The Trinity Board, taking this view of the matter, have since (acting upon the authority given them by an Act of Parliament,) called upon the owners of the Skerries to transfer their right to the corporation; and, as might have been anticipated, a question arose about the value of the rock, light, and revenue, so to be transferred. To decide this question a precept was issued by the High Sheriff of Anglesey, and a special jury was empannelled on the 26th instant, when the property was assessed at 444,000*l.*, this sum being estimated as twenty years' purchase.

This is purchasing the destruction of an imposition at a very heavy rate; but heavy as it is, we had rather, even at this price, have the purchase made now, than suffer such a property to remain longer in the hands of irresponsible possessors, without hope of a reduction in the charges levied on shipping.

The value fixed, by the verdict of the jury, on the Skerries light-house, may be referred to hereafter as a positive lesson on the evils of procrastination in matters which concern commerce; and it is an example of the injustice of granting, without the protection of ample provisionary considerations, the right to private persons to exact toll or tax for anything contrived, and necessary for the public convenience. The Skerries light was erected in the reign of Queen Anne, 1713, by one William Trench, who received a patent for sixty years, which enabled him to collect one penny per ton from certain vessels. This right was made perpetual, seventeen years after, by George the II., a monarch dear to memory, as the introducer of the excise system of taxation, and other grievous impositions; but neither the king nor his minister, Walpole, could by any possibility have contemplated that the profits to be derived from the grant, would ever have increased to the vast sum they at present amount to. It was proved, that during the last year 20,000*l.* was received as light dues for the Skerries;—this led to the verdict. Eight years ago, the value would have been adjudged, by the very same process, at something more than half the sum; the net annual revenue arising out of the Skerries, taking the average of seven years ending 1833, being 12,524*l.* 15*s.* 2*d.*

At the end of the last war, when trade began to increase, and merchant ships to multiply, the Trinity Company should have acquired possession of all private lights; and the trick of granting patents to the projectors of new ones should have ceased. But the Brotherhood of that day had no forethought; they did not possess the intelligence and energy that an efficient discharge of their important duties required of them; there are few of these left now; and it will be for the corporation itself, and for the shipping interest especially, if at future Trinity elections those candidates are always rejected who are described in the *Nautical Magazine* as "Dead-reckoning,—this-here-buoy men,"—and whom we consider as the ordinary seamen of the establishment; for we are persuaded that all the good that has lately, or may be hereafter achieved, will, as it has, originate and be accomplished by the superior officers connected with the corporation,—who alone save it from falling into impotence and ridicule. A naval and an East India officer delivered a judgment in a case the other day in the Admiralty Court, as Trinity masters, which the fraternity may refer to, and be gratified in exhibiting so good a proof that there are some sailors amongst them;

while the general body of shipowners and masters may take it as earnest of better things to come.

Had the same ability, and the same desire, to benefit the marine existed five-and-twenty years ago, amongst the members of the Trinity Corporation, that has begun to develope itself now, its funds would have been the richer, and there would have been some million or more of money saved, merely by the timely purchase of private light-houses, to be expended now in the execution of other improvements.—*Shipping Gazette.*

The following brief report of the proceedings in the important matter to which we have referred, we take from the *North Wales Chronicle* :—

"On the morning of the 26th instant, in virtue of a precept issued to the High Sheriff of Anglesey, a court was held at the Shire-hall, Beaumaris, to adjudicate and decide between the owners of the Skerries light and rock and the Trinity Board, pursuant to the act of parliament, empowering the Brethren to purchase and govern all light-houses within the United Kingdom.

"The question was one of considerable importance, involving property to the amount of 4 or 500,000*l.*; and from the circumstance of the first men of the bar being employed, the inquiry attracted a very crowded court, amongst whom there was a very fair sprinkling of ladies.

"Mr. Earle presided as assessor; and there appeared as counsel for the plaintiffs, (the descendants and residuary legatees of the late Morgan Jones, Esq.,) the Attorney-General, Sir Thomas Wylde, Mr. Fitzroy Kelly, Mr. Jervis, and Mr. Vaughan Williams. For the Trinity Board,—Sir William Follett, Sir Frederick Pollock, Mr. Cresswell, and Mr. Frederick Roby.

"The precept having been read, the following special jury was sworn :—Hon. William Owen Stanley; William Pritchard Lloyd, Esq.; John Hughes, merchant; Edward Jonathan, merchant; John Davies, merchant; James Treweek, Esq.; John Williams, Esq.; Nicholas Treweek, Esq.; Hugh Beaver, Esq.; and John Boggie, Esq.

"The Attorney-General, in an argumentative and effective speech, stated the case for the plaintiffs, in support of which he called the collectors of the Skerries light dues at the ports of Liverpool, London, Dublin, and their outports, from whose testimony he proved that the net receipts for the last year exceeded 20,000*l.*; also several surveyors and land agents, who agreed that from twenty-eight to thirty years' purchase was a fair equivalent for the property in question, —adding one year's income for compulsory selling.

"The greater number of the witnesses were cross-examined, but the re-examination tended to do away with very little impression made by the gentlemen on the other side.

"The plaintiffs' case closed at three o'clock, at which period the assessor granted an indulgence of a quarter of an hour for refreshment.

"Sir William Follett would address the jury for the defendants; and upon the effect of that address, we believe, the defendants meant to rely.

"[We understand that the verdict was for the owners of the light-house 444,000*l.*, and some odd pounds, being considered twenty years' purchase.]"

Chusan.

The following extract from a private letter, which has just been received here from one of the members of the Royal Artillery Corps, engaged in the China expedition, assigns a different cause for the sickness which prevailed than any yet made public :—

"We left Chusan on the 14th of November, in company with the Melville and Wellesley, and several smaller craft; and I may say, I was not sorry at leaving a place where sickness was making great havoc among our people,

especially amongst the troops on shore, several hundreds having died within the space of a few months, the average deaths being three and four daily, and I have since been informed increased to seven and eight. The sickness was also very prevalent on board the squadron, but I am happy to say it was not attended with the same fatality as that on shore; nevertheless, we lost a few men, and among them two out of our three doctors fell victims. The sickness was attributed to the bad quality of the water, but I think it was chiefly owing to the putrid atmosphere arising from one of the most filthy towns in existence, assisted by the circumstance of the very inefficient method the Chinese have of disposing of their dead, which merely consists of placing the coffin on the ground and building over it a light description of tomb, constructed with bamboos and matting; the end of the coffin frequently protruding through the end of the tomb, displaying in gilt letters on a red ground the name and particulars of the deceased. The wealthier of the Chinese build a more substantial kind of tomb, constructed with bricks and tiles, and others of still greater consequence are built (probably for mandarins,) with stone, not in the common burial ground, but on some favourite spot, where they are surrounded with trees and evergreens, forming very pretty and in some cases beautiful arbours, frequently resorted to by the friends of the deceased. There was also another circumstance which greatly contributed to the general cause of sickness; on the right of the town is situated a hill used by the Chinese as a burial-place, and it was considered necessary to fortify it to command the town. In order to accomplish this, it was necessary to remove a great number of the dead, which were chiefly disposed of by burning them; this, added to the foregoing, caused such an insufferable stench, that to any but a Chinese was death. The fortification, however, was never finished, owing to the sickness then prevalent."—*Shipping Gazette.*

Comparative Naval Force of England, France, and America.

The following table of the comparative force of England, France, and America, not very accurate with regard to France, but may be relied on for the strength of America.

	Foreign Tonnage.	Number of Merchant Vessels.	Number of Seamen.	Vessels-of-war of all descriptions.
England . .	3,347,400	27,895	181,642	565
France . .	647,000	5,391	35,000	350
United States .	2,000,000	16,666	108,000	68

Hence the mercantile interests of the United States have far less protection in proportion to their extent, than those of any other maritime country. Not only is the American navy difficient in numerous and well-appointed vessels but the very materials of a navy are wanting. The arsenals are most inadequately stored; the modern improvements in naval architecture have not been introduced into the dockyards, for no ships-of-the-line have been constructed since the war. Only three steamers have been built for the navy. Of the 68 vessels mentioned in the foregoing table, 36 only (including, as it would seem, the revenue-cutters,) are in commission. Of 11 ships-of-the-line, only one is in commission, and that is not in the American seas. The navy-list contains 17 frigates, of which five are in commission; and 21 sloops, of which 14 are in commission. Such is the total deficiency of a home squadron, that the only vessel-of-war above the size of a revenue-cutter, which has been seen

for many years in any of the great harbours is the schooner Experiment,—a wretched craft which could only cruise along the coast in summer weather; and some time ago, a report having reached Philadelphia, that the packet-ship Susquehannah had been captured by pirates off the Capes of Delaware, the only ship which could be sent out to her relief was a revenue-cutter carrying four guns.—*Times.*

St. Vincent and Queen.

A short time since a question arose as to the comparative merits of the St. Vincent and Queen, both first rate ships-of-the-line, the one being nearly similar to the Caledonia, the last on the improved construction of Sir Williams Symonds.

In order to enable our readers to judge of this matter, we place the most important items in juxta-position; at the same time remarking that St. Vincent has already performed a tour of service, and her sailing qualities have been ascertained to be tolerable, that is about equal to those of Britannia, Howe, &c., leaving room for the superiority we may calculate on the Queen's possessing, in this and other essential points, if she proves equal to the rest of her family, being on increased lines of Vanguard, &c.

	St. Vincent.	*Queen.*
Length .	205 ft. 0 in.	204 ft. 0 in.
Breadth .	54 7	60 0
Mean draught of water	25 3	23 8
Height of midship port	5 9	6 6
Displacement (load) .	4609 tons	4475 tons
Ballast . .	250	100
Water stowed .	418	541
Provisions .	439	497
Tonnage (new) .	2564	2733
Ditto builder's rule .	2604	3099
Cost of hull & fitting for sea	£99,220	£81,784

It will be seen that the Queen is superior in the essential points of capacity, stowing more provisions, while at the same time she draws less water, and carries her guns nine inches higher, a very important advantage, coupled with the greater stability obtained by increased breadth, enabling her to fight her lower battery when that of the other ship would be unavailable. It is remarkable, also, that a much finer ship is obtained at 17,000*l.* less cost, owing to the great saving of materials by the improvements in shipbuilding, particularly the introduction of iron knees and straps by Sir William Symonds. Since the above was in type we have received the following letter:—

"Sir.—It is suggested to you that when you show the comparative qualities of the St. Vincent and Queen you should show the breadth of beam of each, and the displacement when loaded, of the hull of each. If, as I suppose, the displacement of the Queen is either not more than that of the St. Vincent, or still more if it is less, it is demonstrable that she is the better ship; for, her breadth of beam being much greater, she unites greater stability with equal or greater facility of being driven through the water. To a man-of-war greater stability, and, consequently, greater power of fighting her guns when it blows hard, is of itself a superiority inestimable.—*Naval and Military Gazette.*

West India Mails.—The first and second reports of the select committee on West India mails have just been published. By the first it appears that they

have resolved that, notwithstanding the port of Dartmouth has been recommended by the Admiralty committee for the arrival and departure of the West India mail packets, they are not prepared to recommend the selection of that port. They state their opinion that no disadvantage is likely to arise to the public from the continued use of Falmouth, whether by the present packets or the larger class that are to be employed, until the merits of the other ports shall have been ascertained. Hence, considering it doubtful whether the public would derive any material advantage by the removal of the West India mail packets from Falmouth, they consider it would not be proper to incur the expense of providing accommodation for the establishment necessary for the performance of the service in any other port.

PORT PHILLIP.—*First Steam-vessel in Port Phillip. All Hail! "Clonmell!"*—The inhabitants of Australia Felix have at last another source whereon to congratulate themselves, namely, the establishment of a steam-vessel to trade between Port Phillip, Launceston, and Sydney.

This noble vessel, the "Clonmell," whose arrival here has been so anxiously looked for, was first seen about six o'clock on Saturday morning last, and at about eight she took up her berth alongside the "Samuel Cunard" store-ship. Upon enquiry as to the cause of her detention in Sydney so far beyond the time specified for her leaving, we learn that her owners finding that some part of her machinery would require alteration, owing to the smallness of the coal, determined on at once putting it into effective condition, rather than run any risk which might endanger the character of the vessel, and therefore kept her until perfectly satisfied that she was "all right."

The "Clonmell" left the Sydney Heads at six o'clock on Tuesday evening last, and anchored inside the heads in this bay at seven o'clock on Friday evening, having made the run from Heads to Heads in seventy-two hours, including six hours she was detained in Batemans Bay, to land passengers and luggage. She started from Sydney with a very strong head wind, which lasted until she rounded Cape Howe, against which her speed averaged seven and a half knots. Her machinery is of a most superior description, having been valued by two competent surveyors previous to her leaving England, by one at eighteen thousand and the other at sixteen thousand pounds. She carries three engines, with a crew of officers and men amounting in number to thirty-eight; her consumption of coals is about thirty tons per day. Her terms are precisely the same as the sailing vessels, namely, twelve guineas. Her fittings up are altogether of a most superb description, and the services and attendance equal to a first-rate hotel; and her larder is amply stocked. An address was presented by the cabin passengers to Captain Tollervey on their arrival here, thanking him for his urbanity and attention.

The "Samuel Cunard," which has arrived here as a coal depot, is to be converted into a store-ship, into which all goods brought by the "Clonmell" will be discharged.

The "Clonmell" sails for Launceston this evening, and returns here in time to leave for Sydney this day week.—*Port Phillip Patriot, December 7th.*

OBSERVATIONS OF PLANETS AT SEA DURING THE DAY.

H.M.S. Indus, off Cape Trafalgar, 20th Aug., 1841.

SIR.—It occurs to me that many practical seamen, readers of your admirable periodical, may be pleased to learn that they may often

obtain their latitude by the meridian altitude of Venus, and sometimes by that of Jupiter, in the day time, an advantage which may frequently be of considerable use in the navigation of a ship.

You will no doubt remember, that in the fine clear skies of the tropics, we were in the habit of using Venus for this purpose,—but you may perhaps not be aware that she is very often available in these northern regions. On the occasion of this voyage from England to the Mediterranean, I have amused my leisure, being a passenger, with observing the latitude daily both by Venus in the morning, and by the planet Jupiter in the evening, the sun being well above the horizon in both cases.

It will sometimes happen that these planets cannot be seen with the naked eye, and yet be quite within the range of the inverting telescope of a sextant. In these cases, the simplest method is to compute the altitude as near as the dead-reckoning allows of; then fix the index of the sextant to this angle, and by means of the back screw bring the telescope as close to the plane of the sextant as possible. If the telescope be then directed a little to the eastward of the meridian the planet will be seen dancing along the horizon like a brilliant spot, and its altitude may be obtained with great precision.

While I am writing on this subject I may call the attention of nautical men to the great advantage of determining the latitude by the meridian altitude of the stars during that portion of twilight in which, both they, and the horizon are to be seen with distinctiveness. People too often wait till it is so dark that the line of the horizon becomes indistinct; whereas the true time to take the Pole Star or any other star whose time of meridian passage suits, is after the sun has set, or before he rises.

You will remember, too, I am sure, how often we profited by the period in question to take sights for time by the stars, and thus, not only to get the latitude, but the longitude by chronometer nearly at the same time—both in the morning early and late in the afternoon.

As almost every ship now carries a sextant, I may give it as a good rule that, whenever the horizon is sufficiently distinct to be seen clearly with the inverting telescope, the altitudes taken, whether for latitude or for time, may be safely relied on.

I am well aware that there is nothing new in this communication, but possibly it may not be the less useful on that account, for practical men who wish to do their business in the best way, are generally glad to interchange information of this kind with persons who have had much experience.

I remain, &c.,

BASIL HALL,

To the Editor of the Nautical Magazine. *Captain R.N.*

[We would direct the attention of masters of ships to the foregoing useful suggestions of Capt. Basil Hall, as it must at all times be desirous that they should lose no opportunity by which they may obtain a correct latitude; and such opportunities, we apprehend, have frequently been lost even by inadvertency. In a journal of the Ship Florentia written by her intelligent Commander Capt. W. Goodwyn, a part of which we have printed, he says on the 22nd of October when between the Cape and St. Helena, "The

planets Jupiter and Venus are in conjunction; they afford a very splendid sight," and on the 26th "the evening was remarkably calm and clear, not a cloud in the sky: the new moon (thirty-six hours old) the planets, Mercury, Jupiter, Venus, and Saturn all near each other (within 26° of the horizon) make a very remarkable appearance, and shine with remarkable brilliancy;" and no doubt affording good opportunities for a meridian observation which seamen should look out for.—Ed. N.M.

Notice to Mariners.

We have collected the following notices, and insert them as being useful to seamen, reserving our own remarks on them for another occasion.

Light at Winga.—Swedish and Norwegian General Consulate, Sept. 4—The light on the coast of Winga, at the entrance to Gothenburgh, as also the auxiliary lights on the Buskaret and Botto, situate in the channel up to the said town, will be exhibited for the first time on the 1st of November next, and the light on Winga will be continued the whole year, but the lights on the Buskaret and Botto will only be exhibited from Aug. 15 to April. 15. *Shipping Gazette.*

Trinity House, London, August 10, 1841.

Coquet Light-House, Northumberland.—Notice is hereby given, that the works connected with the establishment of a Light-house upon Coquet Island, off the entrance to Warkworth harbour, on the coast of Northumberland, being nearly complete, a light will be exhibited in the said Light-house for the first time on the evening of Friday, the 1st of October next, and thenceforth continued every night from sunset to sunrise.

Mariners are to observe, that at this station a fixed bright light will be exhibited, visible in all directions seaward from N.by E. ½ E. to S. by W. ½ W. by compass.

Notice is also given, that buoys of direction for the anchorage within the said island will also be forthwith placed, in respect of which all necessary particulars will be published in due course.

By order, J. Herbert, *Secretary.*

Coquet Light and Buoys.—The Buoys for the anchorage within the Island, referred to in the above notice, have now been placed in the undermentioned situations, and with the following marks and bearings, viz.:

A Red Beacon Buoy, marked "N.E. Coquet," in five and a half fathoms water:—

The south end of Morwick trees in line with the house on Amble Point, bearing W.b.N,

A slated roofed house at Bondicar, in line with Hauxley Point, S.W. ½ S.

Coquet light-house, S.S.W. ½ W.

A Red and White Buoy, painted in Circles, marked "N.W. Coquet," in two fathoms:—

The southernmost of two clumps of trees on the south land, its apparent width on Bondicar Point, bearing S.W.b.S.

The west end of a long wood, in line with the east end of the sand hills next west of Alnmouth, N.b.W. ½ W.

North-east Coquet Buoy, E.N.E.

Coquet light-house, S. ½ E.

A Red Buoy, marked "S. W. Coquet," in three fathoms: —
The east end of Shilbottle trees in line with the tower of Warkworth Castle, bearing N.W. ½ W.
A cluster of trees inland, apparently midway between two houses at Bondicar, one having a red tiled, and the other a slated roof, S.W.
Hauxley Point Buoy, S. ½ E.

A Black Buoy, marked "Sand Spit" in nine feet, upon the extremity of a Reef running from the main land towards the Island: —
The west end of Warkworth Castle in line with Amble Point. N.W.
Bondicar Point in line with the southernmost of two clumps of trees to the southward, S.W.b.S.
Hauxley Point Buoy, S.b.E. ½ E.

A Black Beacon Buoy, marked "Hauxley Point," in five ½ fathoms, on the extremity of this dangerous reef: —
A Farm House, having a lofty chimney on its west end, in line with the house on Amble Point, N.N.W. ½ W.
Earsdon Windmill in line with a slated roofed house at Bondicar W.b.S. ½ S.
Coquet Light House. N. ½ E.

A Black and White Chequered Buoy, marked "Pan Bush," in two fathoms, on the south-east part of the shoal so called: —
The south part of Morwick Trees in line with the North end of Gloster Hill, W. ½ N.
A Red tiled House within the Sand Hills, its apparent width open north of Radcliffe Colliery chimney, bearing S.W. ½ S.
Coquet Light House, S.S.E.
North East Coquet Buoy, S.E.b.E. ½ E.

Mariners are to observe, that the safest approach to this Anchorage is north of the Island, between the north-east Coquet and Pan Bush Buoys, there being but eight feet water in the south entrance; viz. between the south-west Coquet and the Sand Spit Buoys.

N.B. The above bearings are magnetic, and the depths of water those of Low Water Spring Tides.

Sept. 3, 1341. By order, J. HERBERT, *Secretary.*

Trinity House, London, Aug. 24, 1841.

LIGHT VESSEL AT THE SEVEN STONES.—Notice is hereby given, that the floating light vessel referred to in the advertisement from this House, bearing date the 10th inst., has now been placed at its station near the rocks called Seven Stones, lying between the Land's End of Cornwall and the Scilly Islands.

This vessel is moored in 40 fathoms water, about 1 ½ mile E. ½ S. from the Pollard Rock of the Seven Stones, and about the same distance E. by N. northerly from the South Stone thereof.

At this position the angle between the north and south extremes of the Scilly Islands is 22°.; and the day mark at St. Martins bears by compass W.b.S., and the Longship's Light House E.S.E.

The lights on board this vessel will be first exhibited at sun-set of the evening of Wednesday the 1st of September, and will consist of two bright fixed lights; one on the mainmast, burning at an elevation of 38 feet from the surface of the water; and one on the foremast, burning at an elevation of 20 feet above the same level.

N.B. Vessels navigating between the Scilly Islands and the Land's End should endeavour to bring the light vessel to bear to the westward of south, when coming from the northward; and those approaching the light vessel from the southward should keep her to the westward of north.

By order, J. HERBERT, *Secretary.*

SCHULAW.—The Port Deputation of Hamburg has made arrangements, that from the 1st of September there shall be placed below Schulaw, between the two black buoys Nos. 9 and 10, south side of the channel and north of the Portuguese ship Isabella, sunk two years ago, a vessel with flag flying in the daytime, and a lanthorn at night, for the security of navigation.—*Shipping Gazette.*

FLUSHING ROADSTEAD.—On the 6th July the Minister of Marine and Colonies gave notice that in the middle of the channel in the roadstead of Flushing, an elevation has formed itself of about two cables' length in a S.S.W. and N.N.E. direction, which, on account of the shallow water thereby created in the channel, may prove dangerous to the navigation; and therefore it has been marked with a red buoy, placed at the following bearings, taken by compass, viz. the Steeple of Middelburg N.E. ½ N.; Fort Nollen N. by W.; the Steeple of Hoopdplaat S.E.; the Mill of Briskins, S. W. ½ S.; in a depth of 13 Amsterdam feet, or 37 palms at ordinary low water. It is at the same time to be observed, that at the distance of two cables' length north and south of this elevation, there is sufficient water for ships of any draught to pass without the least danger.—*Shipping Gazette.*

As the drifting of vessels on Spittal Point during the winter month is of very frequent occurrence, we may record what has been stated to us by a competent authority in such matters, that there is always a risk in taking Berwick harbour with a strong wind from the north because as soon as a vessel turns round the pier head, she generally loses the wind and steerage way, and if she does not borrow very close to the pier, and immediately let go an anchor, there is every chance of her being drifted on Spittal Point, especially if there should be a roll of the sea and much fresh in the river.—*Warder.*

LIGHTS ON SOUTHAMPTON ROYAL PIER.—Two new lights have this week been fixed on the new pier; and by the plan adopted they are rendered much brighter than the two old coloured lights. The following direction must be observed; bring the red light under the tall white light in one perpendicular line, and the channel is open from the bar end to the pier.

BEACON.—The Swedish and Norwegian administration give notice that a beacon of wood has been erected on the Rock Understen, situated at the southerly Quarken, at lat. 60° 16′ 15″ N., and long. 37° 4′ 30″ E. of Ferro, for a guidance to mariners who pass this narrow and dangerous channel. The beacon or landmark alluded to is of a quadrate form, built of sparwood; a third part of the top covered with planks, which roof, as well as the palings on which it rests, is painted white, but the rest red. This mark is thirty-six feet high, stands on an elevation of forty-two feet, and therefore is altogether seventy-eight feet above the level of the sea, and in clear weather can be seen at a distance of three nautical miles.

RIVER DOURO.—The following is a copy of a notice issued by the Portuguese Admiralty, which has been transmitted to Lloyd's by their agent at Oporto, respecting the soundings found in the River Douro and on its Bar during the month of July, 1841.

Soundings on the bar. By W., W.S.W., and W.N.W. of the Lages above the Banco the soundings are found 26 to 27 palmos at flood of Spring tides. E. W. with Filqueiras, between the rock, Bezerra, and the extreme point of

the Banco, close to the Filqueiras, soundings 29 palmos during Spring tides; but this channel is not navigable, by reason of its extreme narrowness. From the extreme point of the Cabodello, to the course of the channel which lies between the Labe d' Abre, and the rock Afagamanadas, the soundings are 26 palmos and over at low water.

In the River. From the Arrabida mountain to the Lobeira do Ouro, there runs a narrow channel along the rocks on the northern side, of 17 palmos, and close to the Lobeira, of 18 palmos at low water, and this depth is found as far as the Lobeira de Sobreiras.

Between the Arribadouro, and the Cruz de Ferro the soundings are 18 palmos, and from thence to the extreme point of the Cabodello 20, 22, and 30 palmos.

The sand bank still exists close to Posta Nobre, which runs over to the south side about a third of the width of the river.

Note. The Portuguese names are preserved as in the original, as when they are made use of by the natives they will be understood. Lages, Filqueiros, Labe d' Abre, Lobeira do Ouro, Lobeira de Sobreiras, Arribadouro, and Cruz de Ferro, are rocks.—*Times.*

Kingstown Harbour Lights.—The Corporation for Preserving and Improving the Port of Dublin, hereby give Notice, that on the evening of the 1st of October next, the appearance of the Light hitherto shewn from the East Pier Head of Kingstown Harbour, will be altered from the present revolving white Light to a revolving Light shewing white and red Lights alternately, and seen at shorter intervals of time. A small fixed red Light will also be exhibited from the West Pier Head. The Lights so to be shewn will thenceforth be continued from sun-set to sun-rise.

Specifications given of the appearance of the Tower, &c., by Mr. Halpin, the Inspector of Light-houses:—

The Light at present shewn on the Kingstown East Pier Head is a revolving white light, shewing once in each minute. That to be exhibited on the 1st of October next will also be a revolving light, presenting white and red lights alternately, attaining their greatest brilliancy at equal intervals of thirty seconds.

The light will be shewn from the present timber building (which is coloured brown), and will be open to the harbour and to seaward, as heretofore. The lantern is elevated thirty-four feet above the level of high-water springs, and forty feet above the mean level of the sea.

A fixed red light, will, at the same time, be shewn from the Kingstown West Pier Head.

The Kingstown East Pier Light-House bears from the Kish Bank Floating Light W. by N. ½ N. distant 6¾ nautic miles, and from the Poolbeg Light South, distant 2 ⅝ nautic miles.

The bearings given are magnetic. Var. 26° 30′ W.

By Order, H. Vereker, *Secretary.*

Ballast-Office, Dublin, August 1841.

Removing a Lighthouse.—From the improvements now making in Sunderland harbour it has been found requisite to appoint another site for the light-house; but in order to avoid the trouble, delay, and expense of taking it down and rebuilding it, it has been decided to remove it as it stands, which we find is now being attempted. The stone work has been cut out at the base, and a tram way and carriage erected, on which the light-house now stands; it was moved by screw power a distance of 21 feet to the north on Monday, in which situation it will remain for some time, till the railway is reversed, when it will be removed to its new site, at the east end of the north pier.—*Newcastle Chronicle.*

FLORENCE AND VENICE.—*Extract of a letter.*

"WE were charmed with that deservedly-famed city where nature and art strive to outdo each other in works to delight the senses and gratify the mind. There the people looked happy, and well fed and clothed; and there the squalid poverty is not found, which at Rome wanders under the Pope's license, although the people pay a seventh of their rent to support the poor. Alas! the King pockets the money, and the streets of Rome are filled with beggars.

"After Florence came Venice, where ten delightful days were passed in wandering and admiring. If you have ever read Cooper's Bravo it would give you the best description of this strangely beautiful city, now comparatively deserted. The palace of the Doges is uninhabited, and the visiter hears nothing but the echo of his own footsteps, as he passes through its spacious halls, admiring the matchless works of art which adorn its walls. The "Bridge of sighs" is closed as a passage, but we stood upon it like our illustrious bard, and the dungeons are happily thrown open. It fortunately happened while we were at Venice a boat race took place; the first that has been known since the time of the Doges, and it is difficult to give an idea of anything half so beautiful. The evening was such an one as you must go to Venice to see, a sky of gold and purple, reflected in the clear still waters upon which were ten thousand boats decorated with every possible color and vying with the nautilus in grace and elegance. The costumes were those of centuries back, so that one might have imagined oneself in the days of the Falieri. Every window and balcony was filled with gaily dressed people, and hung with draperies of more colors than the rainbow, some of the costliest velvet, damask, tapestry, and carpet, from the seventh story down to the waters' edge. The Rialto was a blaze of color and peopled like a beehive. Bands of music and triumphant songs, and to complete the romance an ancient fued was revived, and vivas for the Nicolotte and the Castellani were echoed as the various boats went by. It was such a sight as few travellers ever had the privilege of seeing and one that I shall keep in my memory to brighten sombre things that dwell there. As for the gondolas, they are like floating coffins, painted quite black and when the black house is on they only have room for two persons, so we substituted an awning, which gave us better opportunity of seeing.

"There are a few planks of the old Bucentaur,* and a gilded model kept in the arsenal, which once sent forth its conquering fleets, but which has now only a few small boats building in it, but I am sure when one saw the instruments of torture preserved as relics of what was done in its prosperity, one could not help rejoicing in the destruction of such power.

"From Venice we travelled through the Tyrol, surpassing everything I had ever heard of it, in romantic beauty. We stopped at Trent,

*An elegant model of this relic of antiquity is preserved at the Polytechnic institution in Regent Street, and the description of our correspondent was vividly before us, as we contemplated the picture of the Doge's palace in the dissolving views, exhibited daily in that excellent institution.—Ed.

Inspruck, and then Munich, where we were glad to rest nearly a fortnight, and had the comfort of going to a little quiet English Church, which is such a refreshment as those only can appreciate who have been travelling long in Roman Catholic countries. There is an English Chapel, at each of the large cities. At Naples, it is just tolerated in the house of our Consul, but at Rome his Holiness will not allow the odour of his sanctity to be intruded upon by heretic worship, within the walls of the city; so the chapel is established outside the gates; but there, even, no strain of psalmody is permitted, lest the sound should fall upon the ears of the faithful! George the fourth, in his abundant toleration, sent 10,000*l.* towards the building of the Roman Catholic Church of St. Paul's at Rome, which was burnt down, and is rebuilding in a style of splendour that we protestants here have no idea of; but thanks be "to Him whose Altar is all space," the prayers from our humble parish Churches go as direct to the throne of grace as from those gorgeous fanes. But to return to Munich, which is the finest city I have seen in Europe, the broad spacious streets and fine houses, and beautiful public gardens are really superb. There is no appearance of commerce, but the people seemed to be thriving and happy, and it was a relief to have well scrubbed floors and clean chambermaids after the dirt of Italy.

"From Munich we went by railroad to Augsburgh, thence by Stutgard and Darmstadt, both fine towns, to Heidelberg where we were delighted with the far-famed Chateau, and the tun of monstrous dimensions, holding 283,200 bottles! Journeying on we came to Frankfort which has not half the bustle or population I expected, but is, as all the world knows, one of those important free towns which the Germanic powers look so sharp after, that no one in it can say a stone is his own.

"At Heidelberg and indeed in other parts of Germany the fame of a curative system by cold water had reached us, its powers almost surpassing the waters of the Brunnens of Nassau, celebrated by three editions of Sir Francis Heads "Bubbles": so, hearing that there was one of these establishments at Boppard an insignificant place on the Rhine between Mayence and Coblentz, it was determined our next stop should be there, so after admiring all the works of it which lay in our way, we now determined to view those of nature, and to witness the sanative effects of cold water. Dr. Schmidt who is the manager, had purchased an old convent of immense size at Boppard, in which he has above 200 patients, undergoing ablutions of every description, shower baths, hip baths, flowing baths, fountains and rivers of cold water to be drunk. The system was first practised at Graafenberg near Vienna, by a man named Priessnitz, to whom thousands flock yearly, who it is said wash and are clean. There are now sixty establishments of the kind in Germany: this one is well conducted, and the cures are surprising, and every one there is satisfied with the progress made towards recovery. The system is efficacious in rheumatic gout."

Grant's Patent Fuel for Steam Boats.

We learn with great satisfaction, that this important invention of our ingenious townsman is at last to be brought into general use. The Admiralty, after a long series of experiments made under their directions, by Mr, Grant, and followed up by frequent trials of his fuel in her Majesty's steam vessels, instructed him some time ago to take out a patent, chiefly, we suppose, to secure themselves and the public against the interference of any pretenders to the invention. This point being settled, it became the wish, as it was the obvious duty of government, to extend the benefits of Mr. Grant's labours to the country at large.

Numerous applications having been made to Mr. Grant, by the various steam vessel companies, for permission to make use of his patent, the Admiralty, in a spirit of enlarged policy, have, as we understand directed that gentleman to refer all persons to them who desire licenses, to manufacture his fuel, and we have no doubt that their Lordships' sanction will be given accordingly. But we trust, the terms will be so moderate as to render it the interest of those extensive companies, whose vessels now cover so many seas, to employ this new agent for the production of their steam power.

A word or two on the nature and properties, as well as the practical advantages of Mr. Grant's fuel, will probably not be unacceptable to our readers generally, and may prove useful to such persons as are engaged in steam boat enterprises on the large scale.

It is not our purpose, nor would it be proper, to describe minutely Mr. Grant's process, it will be enough to say, that his fuel is made of coal dust and other ingredients, mixed together, in certain definite proportions, and then fashioned, by a peculiar process, into the shape and size of common bricks. The advantages of Mr. Grant's patent fuel over even the best coal may be said to consist—First, in its superior efficacy in generating steam, which may be stated in this way,—200 tons of this fuel, will perform the same work as 300 tons of coal, such as is generally used. Secondly, it occupies less space, that is to say, 500 tons of it may be stowed in an area which will contain only 400 tons of coal. Thirdly, it is used with much greater ease by the stokers or firemen than coal is, and it creates little or no dirt, and no dust: considerations of some importance when the delicate machinery of a steam engine is considered. Fourthly, it produces a very small proportion of clinkers, and thus is far less liable to choke and destroy the furnace bars and boilers, than coal is. Fifthly, the ignition is so complete, that comparatively little smoke, and only a small quantity of ashes are produced by it. Sixthly, the cost of the quantity of Mr. Grant's fuel required to generate in a given time a given amount of steam, is so much less than that of the quantity of coal which would be consumed in effecting the same purpose, that, even if the advantages of stowage, cleanliness, and facility of handling, were not to be taken into the account, the patent fuel would still recommend itself to the attention of all steam boat proprietors.—*Hants. Telegraph.*

Neglect of the Lead.

Calcutta, June 12th, 1841.

Sir.—Permit me to remind your correspondent, who signs himself "An Old Tar," that he has not mentioned, neglect in not keeping the lead properly hove on approaching land in dangers, and which I am of opinion is the cause of more losses at sea than all those contained in his long list put together. Some short time ago, a fine new ship run on shore at Coveling, (I shall not mention the ship's name,) through the lead not being properly hove; and again, a fine ship with troops on board run on Point Palmyras reef, without even sounding at all. I have only mentioned these two instances, and which are quite sufficient evidence to convince my brother officers of the merchant service, that they should be more careful, and not place too much confidence in themselves when they are approaching dangers. I actually saw a sailor, in the chains of a ship 500 tons, heaving out a small hand-lead, while running into the anchorage on the west side of the "Car Nicobars," where it is not prudent for a ship of that size to anchor under fifteen fathoms, which is got at the second cast. I cannot conceive the reason of the officers in the navy, as well as in the merchant service, treating the use of the deepsea-lead with so much contempt,—for my part, although not an old sailor, I cannot rest when I know it is time to have a "cast."

Yours, &c.,

To the Editor, &c. Rodney.

Admiral Crowe.

Smith-square, Westminster, 20th Sept., 1841.

Mr. Editor.—Observing in the Nautical Magazine, No. 9, for September, a biographical notice of Admiral Sir Robert Crown, I beg leave to say his name was Crowe not Crown. In the year 1798, I was in the Blonde, (troop ship,) sent to Revel for Russian troops to co-operate with the British in Holland, Admiral Crowe we found lying in Revel Bay with a large Russian fleet; and Admiral Gregg with eight sail of the line, full of troops, sailed two days after our arrival, we having been detained with contrary winds, prevented us from joining him.

Admiral Crowe's nephew, the late Capt. Crowe, was a constant visiter at my house until he sailed for Sydney, New South Wales, and there recently lost his life through carelessness, in not putting the gratings of the hatchway properly on. In the act of crossing over, the hatchway gave way, he fell into the hold, a depth of twenty feet, and was killed on the spot.

Both Admirals Crowe and Gregg I was acquainted with, and also with part of Crowe's family, who are now in England; I merely state this to correct the name of Crown to Crowe.

Your's truly,

C. E. Houghton,

To the Editor, &c. *Com., R.N.*

(Continued from p. 271.—CL crew lost. cs crew saved. D drowned.

VESSELS.	BELONG TO.	MASTERS.	FROM.	TO.	WRECKED.	WHEN.
Adm. Benbow 325	———	Bruce	Hull	Campo B.	B. Funday	May 24 cs —
Africaine	———	Salmond	R. Kowie	———	Africa S. C.	5
Azra	———	Mearns	Mauritius	Calcutta	P. Palmyras	May 22 cs
Albion	———	Lamb	Newcastl	Perth	Dundee	Mar. 23 cs
Albion	Newcastle	Harrison	Newcastl	Mirmichi	long. 20 W.	Apl. 15 cs
Amelia 330	Sligo	Swaine	London	Liverpool	Reculvers	Feb. cs
Australia	Dundee	Yule	Leith	S. Aust.	by fire	
———	destroy'd by	fire about	600 miles	frm Cape	pass. saved	Feb. 3 cs
Breeze	———	O' Donell	Limerick	Quebec	Scattoria P.	May 12 cs —
Caledonia	———	Ainswrth	Llanelly	———	B. Channel	Apl. 25
Catherine	———	Evans	———	———	Carimata P.	Dec. 17 cs
Charles 335	St. Johns	Knight	Sealing	schooner	Bonavista	Mar. 13 cs
Douro	———	———	Sundrlnd	———	Gironde	Apl. 2
Earl Percy	———	———	by fire	at	Maranham	Mar. 14
Elizabeth	———	Davison	Fal mo'th	Mirmichi	C. Breton	May 12 4 —
Ferguson	———	Virtue	Sydney	Madras	G. Barier R.	Apl. 27 cs
Friends of Liberty	Kinsale	———	———	Kinsale	Cork Coast	Mar. 16 cs
Golconda	supposed	founder'd	Madras	China	in typhoon	Sept.
Hector	———	———	Culcutta	———	off Tercira	Feb. 19 3 s
Hirondelle	iron steam'r	Wilson	Hull	Selby	Collision	Mar. 9 cs
Hope & Athlon	Sunderland	Blacket	Sundrlnd	Petrsbrg	Gothland	May 17 cs
Isabella 345	———	Meredith	London	Quebec	Iceberg Atl.	May 9 1 L
Isabella	Hull	Dickins'n	Calcutta	Australia	Kings I.	Dec.
Isidora	———	Serjeant	parted	cables at	Vizagaptam	May 22 cs
John	———	———	Halifax	Jamaica	Silver Cays	Feb. 27 cs
Kincardine	her wreck	run agst.	in lat. 49°	long. 16°	3d. May, by	Kate Grnok
Lion 350	———	McAllum	Glasgow	Belize	Glovers R.	Mar. 31
Louisa	London	Elliot	———	———	Terceira	Mar. 7 cs
Majestic	Shields	Tait	———	———	Tyne	Apl. 2 4 D
Majestic	Liverpool	reported	seen on	the Colo	rados Reef	Apl. 22
Margaret	Newcastle	Pringle	Esdale	Berwick	foundered	June 1 cs
Margaret Brown	———	Shaw	Irvine	Ballina	Rathlin I.	Mar. 14 cs
Mary Ann	abandoned	struck	by a sea	200 miles	east of St.	Micls. Mar.
Mary Ann	———	Heppell	———	———	P Escumiac	May 18
Melrose	———	Nichols'n	Sydney	Manila	Solomon I.	Nov. 11 cs
Memnon	———	———	Bombay	Liverpool	Bombay	June 16 cs
Minstrel 360	———	Outrbrdg	Limerick	Quebec	St. Lawrnce	May 18 14 2L —
Myrtle	Plymouth	Martin	———	———	Terceira	Mar. 7 cs
Napoleon	———	Sherman	Liverpool	———	Mobile	Mar. 23 cs
Nicholas	———	Hethrntn	Newcastl	Hamburg	Schaarhorn	Mar. 7 cs
Norton	whaler	for Sydny	founder'd	off Ocean	I. before	29 Dec.
Paragon 365	———	Auld	Liverpool	Halifax	run down	May 8 —
Picton	———	———	Halifax	St. Johns	Newfland.	Mar. 15 cs —
Premier	Sunderland	Mildrum	Petrsbrg	Hull	I. Faro	June 10 cs
Recovery	———	Conway	emigr'nts	Quebec	Sligo	Apl. 24
Rose	———	Baigrie	London	———	Musqto Sh.	Feb. 12 cs
Rosa 370	———	Hill	Plymo'th	Malta	C. de Gatt	Mar. 5 cs
Rothsay	Rothsay	McDonld	Glasgow	Havana	New Prood	Mar.
Samuel Gould	Jamaica	Smith	Savana	Norfolk	C. Henry	Dec. 19 cs
Sir W. Heathcote	———	Murison	———	Table B.	Brede R.	Apl. 15 cs
Stadarona	———	Robinson	Liverpool	Montreal	Icebergs	Apl. 24
Thos. Greene 375	———	———	Sundrlnd	———	Gironde	Apl. 2 cs
Tory	———	———	Singapor'	China	Palawan P.	Jan. 23 cs
Victory	———	Colin	Halifax	Antigua	———	Mar. 16 cs
Wallace	———	———	Liverpool	St. Johns	Gr. Manan	May 23 cs —
Xanthus 379	———	Bennet	London	Liverpool	Stag Rocks	Mar. cs

(To be continued.)

THE GOODWIN LIGHTHOUSE.—Much interest has been occasioned at the town of Deal, by the preparations of Mr. Bush, (a skilful civil engineer,) to make the interesting experiment of establishing a light-house on the Goodwin Sand,—an operation at once involving a great outlay of capital, at a great risk of total failure; but the benefits of which, if it succeeds, will be felt by vessels of all nations, and may at no distant date, become the means of recovering those long submerged and dangerous sands. We must reserve our description of Mr. Bush's plan for another number; but we may briefly observe, that he proceeds on the principle of the caisson to obtain a foundation on the sand, and then by large iron cylinders placed one upon another to construct his light-house. At the time we write, the machine is about to be towed out to its station by her Majesty's steam vessels Fearless and Shearwater, the former commanded by Capt. Bullock, whose beacon we are glad to find still preserves its position. We cordially wish Mr. Bush success with his enterprise, as must every friend to commerce and to seamen, and we shall watch and report his progress with lively interest.

ICEBERGS OFF THE CAPE.

Calcutta, 14th March, 1841.

SIR.—Should you deem the following extract from my journal, worthy of a place in your Magazine, I shall feel obliged by your inserting it, as it may call the attention of my brother commanders to the necessity that exists of a good look out being always kept, whilst running down their eastings in a high southern latitude.

I am, &c.

R. THORNHILL,

To the Editor, &c. *Com., "Thomas Grenville."*

"*December 18th*, 1840.—At 2h. 45m., P.M., a sail was reported on the lee bow, but which I immediately made out to be an iceberg; kept away for it; and at 5h. 45m. passed about three hundred yards to windward of it, firing three 32-pounder shot at it, without much effect; the height of this mass was about 140 or 150 feet, and the circumference about a quarter of a mile: the beautiful and varied shape it assumed, as the bright sun shone on it, I feel that any description would fail to give even a faint idea of, the sea was breaking in awful grandeur on one end of it, and a few detached pieces were floating about, between two of which we passed. The latitude of the iceberg was 40° 24′ south, and longitude 29° east, and was distant about eighteen miles when first seen from the deck. Ther. 67°, bar. 29·90, symp. 29·16."

[See our May number, p. 341, for further accounts of these dangers.—ED.]

Jerusalem Coffee House, August 1st, 1841.

SIR.—I beg to refer you for the benefit of all Commanders of ships, that on my passage out to New South Wales this last voyage, in command of the ship Royal George, on the 3rd of October, 1840, at 9h. 30m. A.M. saw two large icebergs, one bearing S.E. ½ S. and the other E.b.S. At 11h. 15m. A.M. passed between them, distant from the northern berg about 15 miles, and from the southern berg about 9 miles, thermometer on deck in the shade 60°; observed at noon in latitude 36° 57′ S., lon-

gitude 13° 47′ E. This I consider an extraordinary circumstance for the time of year, and very dangerous to ships running in dark nights, therefore perhaps you will readily give it publicity through your valuable journal.

I am, &c.

G. Richards.

Biographical Memoirs.

Vice-Admiral Sir Thomas Harvey, K.C.B., Commander-in-chief of H M. ships and vessels on the North American and West India Stations, expired at Bermuda on the 28th of June. The deceased admiral, who was born in 1775, was second son of the late late Sir Henry Harvey, who commanded the Ramilies, 74, in Lord Howe's action, on the 1st of June, 1791, and at the early age of twelve years entered the navy. He was actively engaged in Admiral Howe's action; and when lieutenant, distinguished himself in Lord Bridport's brilliant victory. At the reduction of Trinidad he commanded the Pelican, and in 1797 was captain of the Prince of Wales in the attack on Porto Rico. He accompanied the squadron under Lord Hugh Seymour to Surinam in 1799, and displayed great bravery at the capture of that strong fort, when in command of the Lapwing; and was also at the capture of the West India Islands. In 1801 he was in command of the Unite, and was at the taking of the Danish and Swedish Islands. At the passage of the Dardanelles, in 1807, he commanded the Thunderer, and gallantly took part in the destruction of the Turkish squadron. Subsequently he served with great credit on the coast of Egypt and in the Adriatic, where he made several valuable captures. His commission was dated as follows:—Lieutenant, 8th October, 1794; Commander, 3rd July, 1796; Captain, 27th March, 1797; Rear-admiral, 19th July, 1821; and Vice-admiral, 10th January, 1837. In consideration of his eminent services, he was nominated a Knight Commander of the Order of the Bath, 26th April, 1833. The remains of the gallant admiral were interred with military pomp on the 31st of May, at Ireland, Bermuda, near the remains of Admirals Sir E. Colpoys and the Hon. Sir C. Paget.

Rear-Admiral Sir Robert Barrie, was the son of Mr. Robert Barrie, of Sanquhar, N.B., and the youngest daughter of Col. Gardner, and sister of the first Baron Gardner, was born 1774, and entered the navy before he completed his fourteenth year. In 1801, when lieutenant of the Bordelois, was wounded in an action with a French squadron, and from 1806 till 1811 commanded the Pomone in the Mediterranean, under Lord Collingwood, during which period he directed several daring exploits, particularly the destruction of a convoy near Sables d'Olonne in 1807, and succeeding in capturing five transports with provisions, and captured a vessel in which was Prince Lucien Bonaparte, with his family, and all his valuables; all claim to which the officers and crew of the Pomone surrendered as belonging to an individual. In 1811, when in company with the Unite and Scout, destroyed three ships-of-war, though they were protected by strong batteries in Sagorre Bay. During the American war, from 1813, he rendered great service to his country. He was then in the command of the Dragon, and directed the taking of Bangor and Hampden, and assisted at the capture of Cumberland Island. For some time he held a temporary command in the Chesapeake. The late admiral was generally esteemed by the officers under him, and at the close of the war the officers of H.M.S. Dragon presented their gallant commander with a splendid piece of plate as a mark of their respect. In 1819 he was appointed by the government resident commissioner in the Canadian lakes, and was commodore at that station from 1827 until the naval establishment was broken up in 1834. The deceased married in 1816, Miss Ingilby, fourth daughter of Sir John Ingilby, Bart., who died in 1836. In his early days the late admiral sailed round the world with Vancouver, on a voyage of discovery. His commission was dated as follows:—Lieutenant, Nov. 5, 1795; Commander, Oct. 23, 1801; Captain, April 29, 1802; and Rear-admiral, Jan. 10, 1837. The late Sir Robert was nominated a companion of the Bath June 4, 1815, and a knight commander in 1840, and on Oct. 24, 1834, was nominated a knight commander of the Royal Hanoverian Guelphic Order.

MERCHANT SERVICE UNIFORM.—Sir,—Seeing in your last month's Nautical, an article on the uniforms of the Merchant Service, and being of your opinion as to "red coats and salt water," I beg leave to suggest the following.

A plain blue frock coat with brass buttons, and the anchor engraved on them, and blue trousers with a gilt stripe down the seams; and as it is necessary to make some alteration for the Mates, the gilt seams on the trousers, might be dispensed with.

A CONSTANT READER.

P.S.—I prefer blue, both, as to its being very generally in use among seamen and sailors, who are generally averse to anything gaudy, which in their opinion is only fit for the "swaddies"

BRIGHTON.—It is said that the inhabitants of this fashionable watering place are resolved, to dispute the right of the sea, any longer to exhaust its fury at pleasure on their beach, by means of a fabric of timber to act as a floating breakwater, the invention of Capt. Taylor, RN. The structure it is said is to be moored by chains so as to form a harbour between it and the beach, for the reception of vessels in smooth water, as long as the sea will permit it to remain in its place. As it is the first trial of the kind that has taken place, some speculation is abroad as to the power of the timber to resist the fury of the waves, the force of which at Plymouth was sufficient a few years ago to lift 8,000 tons of stone from their places on the outside of the breakwater, and throw them over it into the Sound. The people of Brighton who from long observation of the surf from the Esplanade, understand these matters as well as any one else, have backed their determination with 500*l*., and other parties it is said will assist them. We much applaud the determination to make the experiment. The best of all ways to learn is by experience.

A NEW ISLAND.—For a long series of years, an island has been gradually forming between Witton-ness and Oyster-ness, in the Humber, and its present extent, if we are correctly informed, is not much under 300 acres. Mr. Read, of Button Stather, has taken it from the Woods and Forests, or in other words, the Government, and on Thursday week entered into possession. Several steamers were plying between it and the adjacent coast the whole day, and many of the neighbouring gentry visited "Read's Island," the name by which the new settlement is to be henceforth distinguished. The surface is covered with a fine crop of grass, and about a hundred head of cattle are already feeding where nothing but fishes ever fed before. There is, as yet, but one house, the occupier of which is the person appointed to look after the rest of the inhabitants.—*Hull Rockingham.*

AZORES.—In our last number we gave an account of the volcanic eruption which occurred off the east end of Terceira, in June last. We

understand that Capt. Vidal is directed to examine the locality of it in H. M. Steamer Styx as it is considered that a dangerous shoal, is likely to have been left, which will be prejudicial to navigation. In our next number, will be found an account of the submarine volcanic eruptions about the Azores.

NEW BOOKS.

DESCRIPTIVE TOUR IN AUSTRIAN LOMBARDY, *the Northern Tyrol, and Bavaria*, 1840.—*By John Barrow, Esq.* London, Murray.

The name of Barrow, (both father and son,) is so well known to the literary world, that we have been for some time anticipating the volume before us, as the result of another of those extensive tours of the author, during his release from the toils of office. His "Remark Books," have already been given to the public, which we have noticed on former occasions; and though the present ground is not quite so novel as was his visit to Iceland, or his excursions in the North of Europe, nor even as those wild districts of Connamara and Joyce's country (described in his tour round Ireland,) yet we can venture to assure our readers it abounds in interesting and graphic description and incident.

The tour was made in company with Sir James Graham's eldest son, and comprised a journey over the Splugen, to the Lake of Como, a visit to Milan, and thence through the Valteline into the Tyrol, over the Stelvio, "the highest of the Alpine Passes;" by the valley of the Inn, to Insbruck, (the little capital of the Tyrol,) Salzburgh, Munich, Augsburg, Ulm, (on the Danube) Stutgardt, and by the Rhine to England.

In our limited space it is quite impossible to do more than notice the work; but in compliance with the usual custom of reviewers, we subjoin an extract, which, perhaps, may serve to show the lively tone of the writer.

"At Insbruck," Mr. Barrow says, "we were curious to look at the Capuchin convent, connected as it had been with two German emperors, Maximilian and Francis. It stands in the main street, towards the upper end, its front occupying a considerable extent. We were admitted without difficulty, and were immediately struck with the general neat comfortable appearance of the building. The walls were carefully white-washed, pure as snow. The corridors into which the several cells, or apartments of the monks open, being of great length, and kept purely and perfectly white, have a cheerful and pleasing effect. The apartments in which the monks sleep and pass their time when they wish to be alone, were all locked but one, which had the key in it, but we were prevented from looking in by being told that the owner was unwell, and most likely in his room. The rest of the fraternity were at supper, and we were told that from the *cuisine*, (an excellent one, fit for any of our clubs,) we might see them seated at table, unknown to them, and unobserved.

"Accordingly we went thither, and looking through a small hole in a sort of revolving dumb-waiter in the wall, by which the dishes are passed into the dining-room, smoking hot from the kitchen, we could see what was passing. This luxury, I was going to say, had not reached the refinement of modern days, in our country, but I recollect breakfasting with the late Sir W. Curtis, on board his yacht in Plymouth Sound, and we had mutton-chops sent into the cabin from the kitchen, by a similar kind of roundabout, one at a time, hot and hot: Sir William observing, that a mutton-chop was not eatable unless served up broiling hot from the gridiron."

Wonderful improvements have taken place during the peace in our own messes, and the midshipmen's mess is now no doubt, very superior in all respects to what the captain of olden times would have set down to; but this great refinement of the roundabout has yet to be introduced!"

INCIDENTS OF TRAVEL *in Central America, Chiapas, and Yucatan.—By J. L. Stevens, &c.; in Two Volumes.*—Murray.

Such a title as "The incidents of travel" wears a most seducing aspect, but

our readers here will not be disappointed with the narrative of such incidents, given as this is, in a familiar, easy strain, dictated by a mind at once well stored and well regulated. Selected for a diplomatic mission, Mr. Stevens has availed himself of the opportunity thus afforded him, of visiting a comparatively new country, and making his observations which will hereafter be referred to, as an only authority, at a time when it was distracted by political convulsions; giving him the opportunity of placing a description of the horrors of civil warfare, in contrast with the beauty of nature in all her grandeur. We must content ourselves at present, with following Mr. Stevens through his first volume. Landing at Ysabel, in the Gulf of Dulce, he proceeds by the Motagua river through Gualan, and Chiquimula, to the ruins of Copan, and with his friend Mr. Catherwood succeeds in surmounting all obstacles in the way of exploring, and making elaborate drawings of these most extraordinary monuments, which have defied the powers of the Antiquarian to assign even the date of their existance. To appreciate them fully as also the pains bestowed upon their representation, we must refer our readers to the work itself, assuring them they will be repaid by attending to our recommendation. Leaving his friend Mr. Catherwood in his interesting pursuit of sketching, Mr. Stevens proceeds to Guatemela arriving at the very crisis of its civil dissensions when the hostile Generals Carrera and Morazan, were disputing its possession. This part of the work forms a lamentable trait in the history of the country, and it is somewhat extraordinary, that no sooner does the volcano of civil commotion rest awhile, than parties are formed, pic-nics are the order of the day, and Mr. Stevens travels on to the Pacific, after as a matter of course enjoying them with his new friends. The port of Istapa is the first point he arrives at on the Pacific, and we afterwards find him at Sonsonate and the Gulf of Nicoya, from whence he proceeds to Nicaragua. This important inland lake, some account of which Mr. Lawrance of Her Majesty's surveying-vessel Thunder, gave in a few of our recent numbers, appears to have formed one of the main objects of Mr. Stevens's attention, as he gives a plan of its level above the Atlantic and Pacific with considerations of the method of forming the communication between these oceans by a canal. But we must reserve this important subject for another number, and shall endeavour to give our readers a more satisfactory view, than the foregoing, of Mr. Steven's very interesting and useful work.

A Code of Signals, *for the use of the Mercantile Navy,—By J. Walker, R.N. Two volumes.* Allen, Leadenhall-street.

There is, perhaps, as much variety of opinion on the subject of signals, as there is on several knotty points of seamanship; and yet the object is nothing more than to make known from one ship to another a message, be it long or short, with the greatest economy, this of course involving the least number of flags with the most comprehensive expressions. There have been various attempts to supply a Code of Signals to our merchant shipping, and Marryat's have long taken the lead, and so far established themselves as to be found in our men-of-war. Not long ago, Phillips's signals for the merchant service appeared, and subsequently a Code of Signals, which were to be used by ships of all nations, were brought forth by Capt. Rohde, of the Danish navy; nevertheless, we believe, neither of these displaced their earlier rival in Capt. Marryat. The perfections and imperfections of the latter are long since known, and we believe that a new edition has lately appeared, in which the author has done his best to improve them. Lieut. Walker however appears to consider them so imperfect, as to induce him to produce the code before us.

The principle on which the present code has been drawn up, appears to have been to avoid a long string of flags, which is no doubt objectionable, and to effect this Lieut. Walker has divided them into sections and numbers in sections. The former amount to 234, but the latter never exceed 99, so that a single signal, although at two mastheads, may after all consist of five flags, indeed as the system of sections is adopted throughout, no signal can be made without its two component parts at *different* mastheads. All this we consider objectionable,

nor are we more satisfied that the Union Jack has been made a cypher to be used promiscuously with the other flags. Surely it was entitled to more respect than this.

Again, setting aside the objection to the use of two mastheads, or conspicuous parts of a vessel to make one signal from, we apprehend there is no small danger of mistake, in considering the superior flags to denominate the section, a mistake which would be fatal to the whole signal. But Lieut. Walker has carefully specified, in the order of their succession the mastheads, yardarms &c., which are to be considered in the order of rank, so as to distinguish the section in the pair which forms the signal, a very necessary precaution in putting forth his plan.

We like a "substitute" in a code of signals, although Capt. Marryat denied it to us. But Lieut. Walker by way of making up, has given us no less than three! which we much fear will eventually lead to confusion. Example No 5, in p. 17 of the introduction is of this tendency, and we are at a loss to know the use of the jack in the example No 6, when the section to be made, is 100 and the number 40 at the superior masthead. A pendant represents 100 and the jack is placed beneath it, making it as we supposed 1000, but there is no such section: then comes at the other masthead No. 4, with the flag signifying the upper flag substitute; alluding, perhaps, to the jack, and denoting the 0 to make 40. So that the second flag of the section may have nothing to do with that part of the signal, but simply have reference to the number in the section to be made by substitutes. But we disapprove of the system of thus dividing the component parts of a signal, and foresee that confusion will result from it. The body of the work is divided into sentences and vocabulary, to which there is great facility of reference from its alphabetical arrangement, although there is a redundance of single words in the latter which can never possibly be required.

Notwithstanding our objections, we recommend Lieut. Walker's signals to a fair trial, and we highly commend that spirit of enterprise which originated his code, and the perseverance which completed it.

Promotions and Appointments.

(From the Naval and Military Gazette.)

Whitehall, Sept. 6th.—The Queen has been pleased to direct letters patent to be passed under the Great Seal of the United Kingdom, constituting and appointing the Right Hon. Thomas Earl of Haddington, the Right Hon. Sir G. Cockburn, GCB. Admiral of the White squadron of her Majesty's fleet, Sir W. H. Gage, knt., Vice admiral of the White squadron of her Majesty's fleet, Sir G. F. Seymour, knt., Captain in her Majesty's navy, the Hon. W. Gordon, Captain in her Majesty's navy, and the Right Hon. H. T. L. Corry, to be her Majesty's Commissioners for executing the office of High Admiral of the United Kingdom of Great Britain and Ireland, and the dominions, islands, and territories thereunto belonging.

Downing Street, Aug. 24th.—The Queen has been pleased to appoint Rear admiral F. Mason, companion of the most honorable Order of the Bath, to be a Knight Commander of the said order.

Windsor Castle, Aug. 21st—The Queen has been pleased to confer the honor of Knighthood upon Captain George Rose Sartorious, Royal Navy.

PROMOTIONS.

Captains—F. R. M. Crozier, the Hon. J. Denman, G. G. Loch, G. S. V. King, J. P. Parkin.

Commanders—E. J. Bird, B. Fox, H. G. Shute, P. Fisher, Sir F. W. E. Nicholson, Bart., E. N. Troubridge, E. Dixon, W. N. Russell, R. D. Pritchard, W. L. Sheringham, W. Loring, A. Lowe, E. G. Fanshawe, A. D. Fordyce.

Lieutenants—A. J. Smith, J. Palmer, E. J. B. Clarke, P. Cracoft, H. Caldwell, R. B. Æneas M'Leod, A. Royer, D. Robertson, G. P. Mends, D. H. Senhouse, A. G. Edye, W. Motley, P. M Godfrey, R. Moorman, H. Bernard, F. W. L. Thomas, F. W. C. Hickey, C. W. Hallet, H. A. Norman.

Masters—R. O. Stuart, H. Paull, R. Godden, J. Ashton, J. Jarvis.

Deputy Inspector of Fleets and Hospitals—I. Ryall.

Surgeons—G. Doak, C. White, W. Graham, J. C. Bowman, R. Scott, W Bayne, J. M. Deas, MD.

PURSERS—S. Lord, E. Moubray, R. Godson, J. Millingham, W. Farror.

APPOINTMENTS.

REAR ADMIRAL—Sir F. Mason, CB., to hoist his flag for service in the Mediterranean.

CAPTAINS—Sir E. T. Troubridge, Bart. CB., (1807) to *Formidable*—J. Clavell, (1808) to Greenwich Hospital—W. H. Shirreff, (1809) to *Poictiers*, as superintendent of Chatham dockyard—Sir W. O. Pell, Knt., (1813) to be superintendent of Deptford victualling yard—R. Smart, KH., (1837) to *Howe*, as flag captain to Sir F. Mason—Right Hon. Lord C. E. Paget, (1839) to *Aigle*—The Hon. C. G. J. B. Elliot, (1841) to *Spartan*—Sir E. Tucker, KCB., (1807) to have a good service pension—F. E. Loch, (1814) to be superintendent of quarantine establishment, Stangate Creek—C. Hope, (1826) to *Thalia*—The Hon. G. Grey, (1834) to *Belvidera*—W. H. Henderson, CB., (1838) to *Victory*—Sir W. Dickson, Bart, (1837) to *Volage*—Sir J. E. Home, Bart., (1837) to *North Star*—The Hon. H. Keppell, (1837) to *Dido*—W. A. B. Hamilton, (1828) to be private secretary to the Earl of Haddington, first Lord of the Admiralty—A. T. E. Vidal, (1825) to *Styx*, for particular service.—J. Parker, (1838) to *Vestal*—T. W. Carter, (1831) to *Winchester*.

COMMANDERS—H. Boys, (1835,) to *Vixen*—S. F. Harmer, (1837) to *Driver*—E. Ommaney, (1840) to *Vesuvius*—C. H. Seale, (1826) to *Serpent*—J. M'Donnell, (1838) to *Malabar*—C. C. Otway, (1839) to command *Victor*—E. N. Troubridge, (1841) to command *Wanderer*—W. C. Phillott, (1838) to *Impregnable*, v. A. Forbes, (1838) to *Illustrious*—H. Henry, (1838) to *Devastation*.

LIEUTENANTS—T. D. Stewart, (1815) to command *Heroine*—W. P. Crozier, (1837) to command *Pantaloon*—E. Simmons (1811) to be director of police in Chatham dockyard—W. T. Petch (1814) add. to *Victory* for packet service, Weymouth—T. Scriven (1822) to *Ocean*, for packet service, Dover—T. Prior (1829) to be agent on board contract steam vessels carrying the mail between Liverpool and Kingston—J. Carter (1815) to command *Viper*—C. Jenkin (1829) to com. *Avon*—J. Sanderson, *b*, (1840), G. C. Mends (1829), A. P. Ryder (1841) to *Malabar*—W. Maclean (1830) to be flag lieutenant to Sir F. Mason—R. B. Rowley (1837) J. F. Warre (1841), T. Mitchell (1841), and Hon. G. D. Keene to *Formidable*—W. W. Hornby (1833), F. W. Horton (1889), T. Baillie (1837), J. C. Dickson (1839), and J. A. Gordon (1838) to *Warspite*—E. Smith, E. S. Sotheby (1835) to *Madagascar*—Mottley to *Wasp*—W. N. Boyce (1815) to *Vixen*—F. W. P. Bouverie (1839) to be flag lieutenant to Rear admiral Hon. D. P. Bouverie—E. Hogge (1841), A. Royer (1841), and E. Tatham (1838) to *Belvidera*—C. H. Caldwell (1841), and H. S. Hawker (1838) to *Aigle*—T. Downes (1838) to *Driver*—J. Day (1808) and T. Hall (1816) to *Victory*—J. Thurburn (1841) to *Queen*—C. R. Johnson (1840) add. to *Powerful*—D. A. Buchan (1841) to *Vixen*—J. Sibbald (1837), and H. G. Morris (1837) to *Syren*—George Winsor (1826), and A. S. Austen (1841) to *Cambrian*—Jenkins to *Avon*—C. P. Ladd (1815) to *Redwing*—J. Barnes, *a*, (1813) to command *Nightingale*—A. Parks (1815) add. to *Victory* for packet service, Weymouth—J. Day (1808) add. to *Royal Sovereign* yacht for packet service, Port Patrick—J. Wise (1815) to be director of police in Chatham dockyard—E. Ramsay (1810) to be do. in Sheerness do.—J. West to command *Volcano*—R. Lowcay (1815) to *Poictiers* for Chatham Ordinary—C. M. Mathison (1827) and W. Robinson (1841) to *Malabar*—R. M. Fould (1840) and T. Lysaught 1841) to *Spartan*—W. Houston to *Illustrious*, as flag lieutenant to Sir C. Adam—H. E. Winthrop (1839) add. to do.—R. Ellis (1841) to *Electra*—W. G. Luard to *Belleisle*—T. Christian, (1830) to *Excellent*—A. Farquar to *Southampton*—C. C. Grey (1839) to be flag lieutenant to Sir E. Codrington.

MASTERS—J. Hutchins (1838) to *Belvidera*—R. O. Stuart (1841) to *North Star*—J. Jarvis to *Driver*—P. Wellington (1840) to *Thalia*—T. Laen, (1812) to *Rhadamanthus*—J. N. King (1829) to *Cambrian*—A. Vanzetti (1837) to *Warspite*—J. C. Barlow (1835) to *Malabar*—H. J. London to *Spartan*.

MATES—L. U. Hammet, E. Inglefield, O. Borland, W. Lambert, H. Foote, and C. Wood to *Illustrious*—W. Connolly, E. Lloyd and T. Girdlestone to *Madagascar*—O. Cumberland, F. D. Yonge, to *Caledonia*—A. Wilmhurst to *Spartan*—J. Palmer to *Royal George*—L. Pigot, J. Ballard, W. Parkinson, and F. Simkinson to *Cambrian*—M. Connolly to *Lightning*—W. Wardrop, C. Simpson, and F. Porteus to *Malabar*—W. B. De Blaquiere and D. Gordon to *Excellent*—F. Sleeman to *Driver*—T. Pakenham to *Warspite*—J. Spencer to *Isis*—W. Hood to *Seaflower*—J. Taylor to *Ardent*.

SECOND-MASTERS—T. Hart to *Lynx*—W. Mills to *Royal George*—J. Pasco, *Rhadamanthus*—S. Spain to Heroine.

MIDSHIPMEN—C. Rowley to *Madagascar*—F. Warren, H. Grant, J. Henderson, and W. Lapidge to *Illustrious*—F. Marryat to *Excellent*—H. Molineux to *Impregnable*—E. Leeds and F. Lloyd to *Warspite*—D. Herbert to *Electra*—R. Beale to *Queen*—G. Ridge to *Scout*.

VOLUNTEERS 1st Class—W. B. Urmston to *Queen*—Paisley to *Electra*—C. Simpson, and L. A. Whymper to *Malabar*—T. L. Hallowes to *Isis*—E. Stone, T. Ramsey, W. Elphinstone, W. Hepburn, and J. Elliot to *Illustrious*—F. Protheroe, and Hexham to *Madagascar*—E. P. Owen, C. B. Hope, J. Ward, and Newport to *Warspite*—G. R. Packin, and T. Bates to *Howe*—P. Lethbridge to *Wellesley*—F. Herbert to *Vestal*—A. Kingston to *Calcutta*—J. Trevenew, W. Davey, and E. L. Vernon to *Belvidera*—J. Burgess to *Pique*—J. Rowley to *Magnificent*—P. Lakin to *Formidable*—H. Sainsbury to *Cambrian*—F. E. Boyce to *Driver*—St. John Coventry to *Powerful*.

SURGEONS—T. Miller to Plymouth division of Royal Marines—J. B. Hatton to *Malabar*—D. Geddes to *Belleisle*—J. Smith *(c)* to *Cambrian*—H. Goldney to *Spartan*—A. Allen, MD., to *Belvidera*—King, MD., to *Pique*—J. M. Brown to *North Star*—W. Houghton to *Driver*—J. Drummond to *Queen*—C. T. S. Kevers to *Heroine*—J. Laud to *Syren*—J. Campbell to *Astræa*.

ASSISTANT-SURGEONS—W. Dickson, MD., and M. Burton, MD., to *Queen*—A. M'Donald, (acting) to *Belvidera*—T. Keoun to *Pantaloon*—C. A. Anderson, (add.) to *Camperdown*—C. T. S. Kevern to *Heroine*—J. Lind to *Illustrious*—R. Hayward, and E. Elliott, (acting) to *Malabar*—W. M'Mahon (add.) to *Spartan*—H. L. Dolling, (add.) to *Cambrian*—J. W. Fletcher to *Harlequin*—H. Graham to *Aigle*—F. Graham, MD., and H. D. Mason to *Warspite*.

PURSERS—T. Hookey to *North Star*—D. Simpson to *Belvidera*—W. Lawes to packet establishment at Liverpool—R. Wilson to *Isis*—J. Hobbs to *Harlequin*—J. Jacobs to *Warspite*—G. Harrison to *Malabar*—J. Reid to *Cambrian*—J. Greaves to *Spartan*—J. Ozzard to packet service, Weymouth—W. Wilkins to *Hecate*—E. Hooper to *Queen*.

CHAPLAINS—J. Hill to *Malabar*—E. Ritson to *Ceylon* for service of Dockyard and Naval-hospital, Malta—P. Somerville to *Warspite*—A. Fielding to *Illustrious*—G. Hall to *Malabar*—F. Gallway to *Formidable*.

NAVAL INSTRUCTORS—J. Laverty to *Warspite*—A. W. Lane to *Illustrious*—T. Eastman to *Formidable*.

CLERKS—J. M. Jefferson to *Impregnable*—W. Donald in charge of Jamaica Yard—H. Wiseman in charge of stores at Valparaiso—C. Jones to be clerk in charge of *Pantaloon*—R. Godson to *Excellent*—J. Cleeve to *Pique*—H. Bateman to *Rhadamanthus*—G. Singer add. to *Belvidera*—T. Wise to *Serpent*—E. Atkin (in charge) to *Lynx*—W. De Carteret and J. M. Hobbs to *Queen*—T. Gilbert to *Volcano*.

COAST GUARD.

COMMANDERS—C. Parker and A. Kellet, to be Inspecting commanders.

LIEUTENANTS—E. Hennah, J. Clark, T. S. Coppinger, and P. Bissom, to be chief officers.

Mr. J. Reid to Registrar of Vice admiralty court, Cape of Good Hope.

Mr. M. Costello to be advocate and proctor of Vice admiralty court, Gibraltar

Mr. Price to be secretary to Vice-adml. Sir F. Mason, KCB.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ALBAN, st. v., Mr. J. King, 10th Sept. arrived at Portsmouth from Hull, with depot of 73rd regt.

APOLLO, (tr. sh.) Mr. A. Karley, 17th Sept. arrived at Portsmouth from Quebec with 32nd regt.

ATHOL, Mas.-Com. C. P. Bellamy 16th Aug. left Portsmouth for Barbados.

BELLEISLE, 72, Capt. J. T. Nicolas, KH., 1st Sept. at Cork, 4th sailed, 5th arrived at Plymouth.

BITTERN, Com. Hon. G. B. Lary, 20th Aug. sailed for South America from Portsmouth.

DEVASTATION, (st. v.) commissioned at Woolwich by Com. Henry.

DIDO, 18, Capt. L. Davis, CB., 18th arrived at Chatham, paid off, recommissioned 4th Sept. by Captain the Hon. H. Capel.

DUBLIN, 50, Capt. J. J. Tucker, 20th Aug. left Portsmouth, 21st arrived at Plymouth, 28th sailed for S. America.

FORMIDABLE, Capt. Sir E. T. Trou-

bridge, 25th Aug. commissioned at Sheerness.

Hastings, 72, Capt. J. Lawrence, CB. 13th Aug. sailed for Mediterranean.

Heroine, 10, commissioned at Woolwich by Lieut. Stuart.

Illustrious, at Portsmouth fitting.

Impregnable, 110 Capt. T. Forest, CB. 3rd Sept. left Portsmouth for Mediterranean with flag of Rear-admiral Thomas, 10th at Plymouth.

Isis, 44, Capt. Sir J. Marshall, 21st Aug at Sheerness fitting.

Melville, 72, Capt. Hon R. S. Dundas, 21st Aug. paid off at Portsmouth.

North Star, commissioned by Capt. Sir J. E. Home, 9th Sept at Portsmouth.

Pique, 36, Capt. E. Boxer, 3rd Sept. left Spithead with flag of Admiral Sir C. Adam for West Indies.

Rose, 16, Com. P. Christie, 16th Sept. arrived at Plymouth from Brazil.

Samarang, 26, Capt. J. Scott, 17th Aug. arrived at Portsmouth from China, 20th moved into harbour.

Sapphire, (tr. sh.) Mas.-com. G. Cole, 16th August, left Portsmouth for Quebec.

Scout, Com. J. Larcom, 20th Aug. left Sheerness for Portsmouth, 23rd arr. 3rd Sept. left Plymouth for Mediterranean.

Styx, (st. v.) 12th Aug. commissioned at Sheerness by Com. A. T. E Vidal.

Viper, 6, commissioned at Portsmouth by Lieut. J. Curtis.

Wolverine, 16, Com. W. Tucker (*b*) 21st August arrived at Plymouth from Africa, 22nd passed Deal from westward.

Portsmouth—*In harbour*—Excellent, Queen, Victory, Illustrious, Warspite, Madagascar, Belvidera, Royal George, North Star, Driver, Rapid, Pantaloon, Viper, Avon; Alban and Echo steamers; Sylvia surveying-vessel.

Plymouth—*In the Sound*—Belleisle, Impregnable, Nightingale—*In Hamoaze*—Caledonia, San Josef, Malabar, Cambrian, Spartan.

ABROAD.

Albert, Capt. Trotter, 5th Sept. in Monserado roads, coast of Africa, all in good health in the expedition.

Arrow, 10, Lieut.-com. W. Robinson, 8th July at Rio Janeiro.

Beagle, (st. v.) Acting com. J. L Stokes, 1st April, at Sydney.

Britannia, 120, Capt. J. Drake, 19th Aug. left Corfu for Malta, 26th arrived, 5th Sept. remained.

Calcutta, 84, Capt. Sir T. Roberts, CB., 23rd July off Alexandria, 22nd Aug. sailed for Beyrout.

Cambridge, 78, Capt. E. Barnard, 24th July at Beyrout.

Cockatrice, Lieut. J. Oxenham, 8th Rio Janeiro.

Columbine, 16, Com. G. Elliott, 11th May arrived at Macao from Chusan.

Comus, 18, Com. E. Nepean, 24th July at Jamaica from the Havana, with 270,000 dollars, 5th Aug. left Barbados.

Cornwallis, 72, Capt. P. Richards, 9th July arrived at Madeira in ten days from the Lizard.

Cyclops, Capt. H. T. Austen, 5th Sept. at Malta.

Endymion, 38, Capt. Hon. F. W. Gray, 12th June arrived at Aden leaky, having struck on a reef off I. Juan de Nova in Mozambique channel May 18.

Erebus, Capt. J. C. Ross, 20th April at Hobart Town.

Espoir, 10, Lieut.-com. J. T. Paulson, 10th Aug. in the Tagus.

Fair Rosamond, 2, Lieut.-com. A. G. Bulman, 20th July arrived at Halifax.

Ganges, 84, Capt. B. Reynolds, 22nd Aug. left Corfu, 20th arrived at Malta.

Gorgon, (st. v.) Capt. W. H. Henderson, 5th Sept. arrived at Malta.

Grecian, 16, Com. W. Smyth, 5th June, arrived at Rio.

Hazard, 18, Com. Hon. C. G. J. Elliott, 24th Aug. arrived at Malta from Zante.

Hornet, 6, Lieut.-com. R. B. Miller, 5th Aug. left Barbados.

Howe, 120, Capt. Sir W. O. Pell, 19th Aug. left Corfu for Malta, 26th arrived, 5th Sept. remained.

Implacable, 74, Capt. E. Harvey. 3rd Sept. at Tunis.

Inconstant, Capt. D. Pring, 24th of July at Beyrout.

Indus, 84, Capt. Sir J. Stirling, 22nd August passed Gibraltar.

Modeste, 18, Com. Eyres, 15th July at Canton.

Partridge, 10, Lieut.-com. W. Morris, (*a*) 8th July at Rio Janeiro.

Phoenix, (st. v.) Com. R. Stopford, 24th July at Beyrout.

Pilot, 16, Com. G. Ramsey, 25th July arrived at Bermuda, with flag of Com. Douglas.

Powerful, 84, Capt. C. Napier, 24th July at Beyrout.

Revenge, 76, Capt. Hon. W. Waldegrave, 3rd Sept. at Tunis.

Sappho, 16, Com. T. Frazer, 17th July at Barbados.

Savage, 10, Lieut. J. Bowker, 4th Aug. arrived at Gibraltar, and sailed to westward.

SERINGAPATAM, 42, Capt. J. Leith, 7th Aug. arrived at Halifax from Barbados.

SOUTHAMPTON, Capt. Sir W. Hillyar, 8th July at Rio Janeiro.

STROMBOLI, Com. W. J. Williams, 24th July at Beyrout.

TALBOT, 26, Capt. H. J. Codrington, 19th Aug. arrived at Malta from Palermo.

VANGUARD, 80, Capt. Sir D. Dunn, 19th Aug. left Corfu for Candia.

VERNON, 50, Capt. W. Walpole, 8th Aug. left Gibraltar, 19th arr. at Malta, 5th Sept. at Malta.

VICTOR, Com. W. Dawson, (a), 2nd July at Jamaica, 5th Aug. sailed from Barbados.

WASP, 16, Com. G. Mansell, 24th July at Beyrout.

WATERWITCH, 10, Lieut -com. Henry Martin, 11th July arrived at St. Helena, (captured the Donna Eliza, a Brazilian vessel on the 20th of June.)

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 15th Aug. at Thornton heath, Surrey, the lady of J. R. Sterritt, Esq., surgeon, RN., prematurely of twins, still born.

At Brighton, the lady of Capt. T. Martin, RN., of a daughter.

On the 9th August, at Edinburgh, the lady of Lieut. the Hon. Charles St. Clair, RN., of a son.

August 17, at Batheaston, the lady of Capt S. C. Dacres, RN., of a daughter, still born.

Sept. 1st, at Stoke, Devonport, the wife of Mr. J. Rogers, master RN., of a son.

On 2nd Sept. at Trematon, the lady of Capt. J. Tucker, RN., of a daughter, still born.

On Sept. 6th, at Stonehouse. the lady of Lieut. J. Somerville, RN., of a son.

Marriages.

On 16th Sept. at Bath, the Rev. John Strickland, AM., to Emma, youngest daughter of Emeric E. Vidal, Esq., RN.

At Prince Edward Island, the Hon. K. Stewart, commander of the Ringdove, to Mary, only daughter of Sir C. Fitzroy

On 7th Sept., C. Fane. Esq., to Harriet Anne, only daughter of the late Vice admiral the Hon. Sir H. Blackwood, Bart., KCB., GCH.

On 31st August, at Fareham, Hants, Lieut. S. Y. Brown, RN., to Barbara Whalley Smythe, second daughter of Sir J. W. S. Gardiner, Bart.

At Southampton, the Rev. E. D. Tinling, son of late Rear admiral Tinling, to Catherine, daughter of C. A. Elton, Esq.

On 18th Aug. at Sidwells, Mr. Way, RN., to Elizabeth, daughter of the late Dr. Pierce.

On 26th Aug. at Woolwich, William Hamilton, Esq., RN., to Catherine Eliza, daughter of B. Pidcock, Esq. Woolwich.

At Plymouth, Mr. J. Scott, master of Thunder, to Miss Simpson, of Torpoint.

On 9th Sept. at Bishopstington, Devon, Edward, son of late Vice admiral Young, to Frances Eliza, daughter of T. M. Baker, Esq., of Totness.

At Littleham, Devon, Henry Ingles, Esq., to Susan, daughter of Capt. H. W. Scott, RN., of Exmouth.

Deaths.

Off Cuba, July 11th Lieut. Alexander Derbishire, (1839), lieutenant of the Victor, lent to the Comus.

At Newtownbarry, Ireland, Sept 13th the Hon. R. T. Maxwell, late mate of H. M. S. Asia, in his 24th year.

At Port Royal, July 4th of fever, Mr. J. E. Hayes, youngest son of Captain G. Hayes, RN., aged 28 years.

At the Naval Hospital, Stonehouse, on the 11th inst., Mr. D. Sullivan, purser, RN., (1806), late of H. M. S. Hastings, leaving 7 orphans to deplore their loss.

At Iffley, Mrs. Nowell, relict of Vice-Admiral W. Nowell. aged 78.

Lieut. M. T. West, RN., (1814).

At the Royal Hospital, Plymouth on the 22nd inst., Capt. Nurse, RN., late of Iris, and commanding on the coast of Africa.

At Stoke, on the 19th of August, Mr. William Scott, master RN.,

Recently in Canada, W. Cannon, Esq., on the retired list of surgeons of the Royal Navy.

In Upper Stamford-street, Mrs. Eliza Hill, aged 45, widow of the late lieutenant Mordaunt Hill, RN.,

In Lisson Grove North, August 14th, aged 58, Margaret wife of Capt. Daly, RN.

At Lowestoft, August 29th, J. Mathies, Esq., Lieut. R N.

METEOROLOGICAL REGISTER.

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

From the 21st of August to the 20th of September, 1841.

Month Day	Week Day.	Barometer, In inches and Decimals		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In. Dec	o	o	o	o						
21	S.	29·66	29·74	65	71	59	72	SW	SW	4	4	bc	bc
22	Su.	29·94	29·97	59	64	49	66	SW	S	4	4	bcp (2)	bcr 4)
23	M.	29·85	29·90	55	64	54	65	SW	W	2	2	bcp (1)	bc
24	Tu.	30·05	30·12	53	64	45	65	W	NW	2	3	bcr (1)	bc
25	W.	30·10	30·05	55	61	46	63	SW	SW	2	2	or (1)(2	bc
26	Th.	30·21	30·25	62	73	59	74	SW	SW	2	2	o	b
27	F.	30·30	30·30	67	77	63	79	SW	SW	2	2	bc	bcm
28	S.	30·21	30·22	63	69	55	71	SW	SW	3	2	bcm	bm
29	Su.	30·21	30·16	65	80	54	81	NW	SW	1	2	bm	b
30	M	30·02	29·96	66	76	55	75	SW	SW	2	3	bmw	b
31	Tu.	29·79	29·79	64	72	60	73	SW	W	3	3	bc	or (4)
1	W.	30·02	30·02	56	66	51	67	SW	SW	2	3	o	bcm
2	Th.	29·88	29·81	59	67	44	68	SW	SW	3	3	bc	b
3	F.	29·71	29·65	62	74	50	76	S	S	3	4	b	bctlr 3)(4
4	S.	29·52	29·72	50	49	47	51	SW	NW	6	6	qor (1)(2)	qor (3)
5	Su.	29·81	29·80	50	51	41	52	W	W	3	3	bcp 2)	bc
6	M.	29·70	29·70	51	58	35	61	NW	NW	1	1	bcf	bcm
7	Tu.	29·73	29·58	50	57	37	59	SW	S	4	5	bc	or (3)
8	W.	29·77	29·88	58	66	51	67	SW	SW	4	2	bc	b
9	Th.	30·03	30·03	57	65	53	68	SW	S	2	2	bc	o
10	F.	30·04	30·03	63	69	59	71	SW	SW	2	4	bc	b
11	S.	30·07	30·09	58	72	56	74	SW	NE	2	2	o	b
12	Su	29·97	29·93	65	77	59	79	E	E	1	3	bw	b
13	M.	29·90	29·92	64	76	56	77	E	E	2	2	b	b
14	Tu.	29·86	29·84	63	75	59	76	E	SE	4	4	bc	bc
15	W.	29·92	29·94	63	73	59	74	SW	SW	2	4	bc	b
16	Th.	29·87	29·87	62	68	55	70	SW	SW	4	4	bcp (2)	bc
17	F.	29·96	29·98	53	64	44	65	W	W	2	2	b	b
18	S.	29·91	29·92	51	66	42	67	NW	SW	2	2	bm	bc
19	Su.	30·01	30·06	55	68	42	70	NE	E	2	2	b	b
20	M.	30·13	30·15	61	67	58	72	NE	NE	2	2	o	o

August—Mean height of barometer = 29·902 inches; mean temperature = 60·9 degrees; depth of rain fallen = 1·70 inches.

*** On the morning of the 6th of September we had a hoar frost.

TO OUR FRIENDS AND CORRESPONDENTS.

Our friend "A Well-wisher and Subscriber," is informed that we have not lost sight of our intentions respecting the chart. The data for currents being rather meagre originated the delay. Since then, it has been increasing, and we hope to see the chart in an early part of our next volume.

Southampton Docks.—Extract in our next. We congratulate the Company on the success they have already gained.

Lieut. Raper's Longitudes will be continued in our next, which will contain an important discussion on that of Madras.

Winds and Weather, *on the western coast of New Holland.—By Com. J. C. Wickham, of H.M.S. Beagle.*

[In the present dearth of Nautical information, concerning the western coast of Australia, we have great satisfaction in publishing immediately, for the use of seamen, the following judicious and well digested account of the weather on that coast, by Commander Wickham, lately employed surveying it in her Majesty's ship Beagle. We have already availed ourselves of his excellent account of the Abrolhos, a part which obtained additional terrors from our general ignorance concerning those dangers. With the knowledge however thus imparted, and the chart of them which will be hereafter published by the Hydrographic Office, they will become useful to our whalers as supplying water, which is so difficult to be obtained on the Australian Coast. Our next will contain the remainder of the present paper, treating more on the North Western Coast, and will be followed by descriptions of the coast from the same intelligent and experienced officer. Our last number contained a chart of a small portion of the coast to the southward of Swan River, and in our present number is a plan of Peel harbour, in Warnborough Sound. We regret that these are not accompanied by any description, and although we have not yet met with any, these plans convey sufficient information in themselves, to afford valuable assistance to vessels on the coast.—Ed. N.M.]

The winds on the western coast of New Holland, are for the most part from some southern point, chiefly between S.S.W. and S.S.E.

During the summer, or from the early part of October to the beginning of April, they are almost constant from this quarter; but in the winter their regularity is broken in upon, by occasional winds between north and west, that at times blow with great violence, and are accompanied by heavy rain and thick dirty weather.

Near the shore, land and sea breezes appear to be regular, the former generally dying away towards the middle of the day, after having reached as far as east, from about south-east at sunrise; then follows a short interval of calm; after which the sea breeze sets in mostly at S.S.W., and draws to the eastward of south in the evening.

At times the land wind veers round the compass, and is then generally stronger than usual, blowing fresh for a short time from north-east, and bringing a parching heat from the land; upon these occasions the sea breeze comes in from a more western point, and is lighter.

At Swan River, in the months of December, January, and February, the sea breezes are very strong for intervals of from three to five days, during which time they blow fresh throughout the night, drawing to the southward after midnight, and towards sunrise to S.S.E. and south-east, but more moderate. In the middle of the day they back again to the southward, and soon to S.S.W., from which quarter they blow very fresh until midnight.

Intervals of such weather are from three to five days duration, and are followed by the like number of days of moderate weather, with winds mostly off the land; sometimes strong gusts from east for a few hours, with oppressively hot weather.

I have noticed, that when the sea breeze sets in from a point to the westward of south-west, it does not blow so strong, and generally lulls at sunset; but if more southerly, or from S.S.W., it is a firey breeze, and often lasts until midnight.

During the prevalence of these strong sea breezes, communication between Gages Road and the shore is very inconvenient, particularly for laden boats.

In March, the sea breezes are not nearly so strong, but are generally moderate, and not unfrequently bring in thick misty weather from seaward with drizzling rain.

Generally speaking, when the sea breezes are the strongest, the land winds are light, and vice versa.

I cannot speak from experience of the winds or weather during the month of April at Swan River, but I have been told, that the sea breezes are moderate, and the land winds of longer duration; calms are frequent, and the weather altogether seems to indicate the breaking up of the summer season. Light winds are occasionally felt from the northward, with a dull gloomy appearance between that point and south-west.

May is the month in which the winter weather fairly sets in, and it rarely happens that the middle of this month passes without the rains having commenced. This season seems to vary but little as to the time and manner of setting in,—it is ushered in by blowing weather from about N.N.E., the wind gradually veering round to the westward as it increases in strength. The first of this weather usually lasts from a week to fourteen days, then comes an interval of fine weather, generally of a fortnight's duration, and sometimes a month; after which the rains set in more constant, and the intervals of fine weather are shorter:—this weather lasts until October, and at times throughout that month.

During the intervals of fine weather the climate is delightful, and the country has a fresh and pleasing appearance; land and sea breezes are as regular as in summer, with the exception that the latter are much more moderate.

The north-west gales that occasionally occur during the winter months, on the southern parts of the west coast of New Holland, are probably felt as far north as Sharks Bay. They blow with great violence, and are accompanied by dark gloomy weather and rain. It is then unsafe to be near the land, as the gale that commences at N.N.E., invariably veers to the westward, making a lee shore of the whole line of coast, and between W.N.W. and W.S.W. blows the hardest.

Fortunately these gales give ample warning,—the barometer always foretells their approach, and generally begins to fall three or four days before the commencement of the gale; besides which, there are other never-failing indications of a northerly wind, such as the change of the current, which, (owing to the prevailing southerly winds,) usually sets to the northward, but runs strong to the southward during northerly winds, frequently preceding them, and giving more timely notice than the barometer.

A rising of the water is likewise a certain prognostic of a northerly

wind, and has been invariably noticed at Swan River to precede all gales from that quarter; this, of course, can only be observed while at anchor on the coast.

Another, and perhaps equally certain sign of approaching bad weather, during the winter season, (and which is almost certain to be from the northward,) is the strength of the north-east winds. As it has been observed, that when the land winds blow strong, particularly from the north-east, and the sea breezes are light, with a falling barometer, a gale from the northward will follow. Perhaps these latter remarks are only applicable to that distance from the shore, where a ship will be within the influence of the land and the sea breezes, but as I conceive the limit of that distance to be full thirty miles off shore, a notice of such a symptom of approaching bad weather may not be altogether useless. I am of opinion, that land winds are at times felt as far off shore as the edge of soundings, which is not less than thirty miles, and generally between that and forty.

In latitude 30° 25′ southward, and sixty-five miles from the land, soundings were got from the Beagle with 185 fathoms of line, upon a coral bottom. Between Swan River and Houtmans Abrolhos, soundings may be had at a greater distance from the land, than off any other part of the west coast.

The north-west gales are of longer duration, in the latitude of Swan River and south of that, than they are to the northward. They do not appear to be entirely confined to the winter months, as I am told that a very heavy one was experienced at Swan River early in March, 1832; and on the 13th of December, 1839, the Beagle experienced a strong breeze from the northward, while at anchor in Gages Road, in consequence of which, it was considered necessary to let go an extra anchor.

As it may be satisfactory to know more particularly the progress of these gales, and the effect they have upon the barometer and sympiesometer, I give the details of two that were experienced in her Majesty's ship Beagle,—one at Swan River in the beginning of June, 1838, the other at Houtmans Abrolhos in the beginning of May, 1840. They may be taken as fair criterions of the strength and duration of these gales, the latter having been experienced, probably, within 5° of their northern limit, and the former near the southern extreme of the west coast.

As our barometer had been broken in March, 1838, the register of a sympiesometer will be given in describing the gale of June in that year; but as this instrument had been found, (by comparison with the barometer,) to act exceedingly well, it will be sufficient for our purpose; the *general* use of a marine barometer being merely that of a weather-glass, for which purpose, a sympiesometer is equally good, and more sensitive.

For the gale of 1840, the register of a barometer is shewn, which, although nearly 0·2 too low, will serve to shew the effect upon the mercury.

At Swan River on the 24th of May, 1838, the wind was strong and squally from N.E.b.N.,—sympiesometer standing at 30·74. During the day the oil commenced to fall, and continued falling slowly until

the 30th, when it was 30·16; during the greater part of this interval, the winds were light, generally from some eastern point in the morning, and going round the compass by north and west during the day; the nights were mostly calm,—a heavy bank of clouds was collecting between N.N.E. and south-west, and the whole western horizon had a gloomy appearance. On the evening of the 30th, the water had risen considerably at the anchorage, and the stream ran to the southward. A fresh breeze also set in from north-east, and gradually veered to the northward, as it increased in strength. On the 31st, it blew hard all day between N.N.E. and N.N.W., with dark squally weather,—much lightning in the south-west, and heavy rain, that continued all night. On June the 1st, the gale was at its height, and at 8 A.M. (the sympiesometer having fallen to 29·93,) was blowing a hard gale, with heavy squalls and rain from north-west; towards noon the wind veered to west, but still blew very hard. The sympiesometer now began to rise, and in the evening the wind was W.S.W., and had moderated considerably; the weather was also clearer, although heavy clouds still hung on the western horizon.

The next morning, (the 2nd,) the sympiesometer had risen to 30·26, but this was much too sudden a rise, (0·33 in 24 hours,) to allow us to suppose that the favourable change in the weather was to be of long continuance. During the day the oil began to fall again, and the wind veered to west and north-west, and on the 3rd blew harder than ever, with heavy rain, thunder and lightning, and with the exception of occasional intervals, when the wind moderated, this weather continued until the 10th. The wind during this time was variable, between N.N.W. and W.S.W. Sympiesometer between 29·81 and 30·16, falling with the north-west winds, and rising as the wind veered to west and W.S.W.*

This gale, which may be said to have been of ten days' continuance, caused a heavy sea upon the coast:—the oldest residents at Swan River said they had never experienced so heavy a sea before. On the 10th, the glass commenced to rise steadily, and the weather was fine, with light variable winds, until the Beagle sailed on the 20th.

Owing to the security of Owens anchorage, and the good quality of the bottom, the Beagle rode out this bad weather, without causing the slightest apprehension to any one on board; but had a merchant vessel been in Gages Road, in all probability she would have added one more to the list of wrecks, that have already done too much in prejudicing strangers against the Swan River settlement.

The gale of May, 1840, at Houtmans Abrolhos, commenced in a similar manner with that already described, but being in a lower latitude, was of shorter duration, and the indications did not precede it such a length of time, still they were in every respect similar.

This gale commenced on the 2nd of May, in the evening, and lasted until the evening of the 4th.

On April the 29th, the barometer stood at 30·17, (having been some

* It will be seen that these gales have all the character of the usual hurricanes of the Atlantic, and the typhoon of the China Sea, but being in the *southern* hemisphere the shifts of wind draw round to the *left* instead of the *right*, in each case going with the sun, and confirming the theory of Mr. Redfield and Col. Reid.

days steadily high,) it then commenced to fall, and on the evening of May the 2nd, was 29·86; during this interval, we daily experienced strong E.N.E. and north-east winds, they generally commenced after midnight and lasted until noon. A bank of clouds was also collecting in the north-west, and there was occasional lightning in that quarter. The early part of May (the 2nd) was nearly calm, and there was a heavy bank of clouds between north and south-west. After noon, a light breeze sprang up from north-west, which gradually freshened, and during the night the barometer fell 17-hundredths.

At sunrise, on May the 3rd, there was a fresh breeze from N.N.W., and the weather had a very dull and gloomy appearance, the wind increasing rapidly, and by noon it blew a heavy gale at W.N.W.; the barometer had fallen to 29·58, at which it continued until midnight, when the wind drew to the southward of west, and the mercury began to rise. The gale continued unabated, with squalls and rain until noon of the 4th, although the barometer had been rising since the previous midnight;—in the afternoon the wind moderated, and the weather became fine.

From this, it would appear that the barometer gives ample warning of an approaching north-west gale, as it had been falling nearly four days before the commencement of the bad weather; this alone ought to be sufficient to put a man upon his guard, if near the shore. Between April the 29th, (the first day of the fresh north-easterly winds,) and May the 3rd, (when the gale was at its height, and the wind began to draw to the southward of west,) the mercury had fallen 6-tenths. The change of current did not precede the wind, but changed with it. When the gale was strong from north-west and W.N.W., the current ran a knot an hour to the south-east, and when the wind changed to south-west, it ran with the same velocity to the north-east.

The west coast of New Holland is at times visited by sudden squalls, resembling hurricanes; as I was told by the master of an American whaler, that in March, 1839, when in company with several whalers off Sharks Bay, he experienced some very bad weather, which came on suddenly without having given any previous warning, but it was not of long continuance:—the gusts of wind were very violent, shifting suddenly to all points of the compass. Some of the ships suffered considerable damage, in loss of topmasts, &c., others in sails, but all more or less. I think the first squall was from north-east, off the land.

The American whalers that resort to the west coast of Australia, are upon different parts of it at all seasons of the year; their range is between the parallels of 10° and 50° of south latitude. In the summer they fish to the southward, and at that season visit Swan River and King George Sound for refreshments, but during the winter months they are rarely to the southward of Sharks Bay;—numbers are to be met off the north-west Cape.

Between the parallels of 40° and 45° they meet much bad weather, as it is generally blowing strong with a heavy sea; but between 45° and 50° the weather is much more settled and finer. November is said to be generally the finest of the summer months, the winds are mostly moderate, and the weather more settled than at other periods.

Two gales that were experienced by the Beagle in November, 1837, between the islands of St. Paul and Amsterdam and Swan River, will serve to shew the different effects upon the barometer, by gales from opposite quarters, one being from north-west and the other from south-east.

On November the 1st, the barometer stood at 29·90, having been gradually rising for some days previous to that, and the wind had been fresh between north and west. After 8 P.M. on the 1st, the mercury began to fall, and on the 2nd the wind was strong from N.N.W.,—barometer falling all day. During the night it blew a heavy gale, and the barometer fell to 29·34. On the morning of the 3rd, the wind veered to the westward, and the mercury began to rise, the weather also became more moderate and gradually fine.

On the 8th of the same month, the barometer was 30·05: at 8 P.M., with fine weather, wind S.E.b.E., it then commenced to fall, and at 8 P.M. on the 9th, was 29·80, and blowing a heavy gale at south-east, which continued all night, and until 8 P.M. on the 10th, at which time it became more moderate, and the barometer began to rise.

What a different effect these gales had on the barometer, that from the north-west causing the mercury to fall nearly 6-tenths, whereas, the last from south-east, only lowered it 2-tenths and 5-hundredths. They were of equal strength and duration, and both accompanied by heavy rain.

Mr. Ogle in his account of the colony of Western Australia, says, "This colony is in a position highly advantageous, whether considered in relation to Europe or Asia. It is nearer by one month's voyage to the former than Sydney, and only twenty-five days sail from Madras; and when steam communication has been established, less than half that time will be necessary to convey the exhausted European from the enervating climate of Hindostan to the invigorating and healthful air of Western Australia; also those productions in the East which may be in demand. So healthful a clime will constitute a home for the wives and children of those, whose avocations require their attendance in Hindostan, and who will become profitable consumers in the colony. In the seas adjacent, the prevailing wind is from the westward throughout the year. During the summer, the difference of temperature produces the land and sea breezes with great regularity. From the absence of marshes and decomposed vegetable substances, and consequent miasma, the land breeze bears no injurious air to the coasts and bordering seas."

[In consequence of the unfavourable reports which have got abroad respecting Swan River, its harbour, resources, &c., Captain Wickham, who has just arrived in England invalided from Australia, has supplied us with the following return from the Resident at that place, shewing the port clearances for a few months to the latest date. This is an important document, and we lose no time in placing it before our readers.—Ed.]

FREEMANTLE SHIPPING REPORT FOR 1840.

Date of Arrival.	Names of Ships.	Names of Masters.	From Whence.	Date of Sailing.	For what Port.	Cargo Imported.	Remarks.
1840.							
Jan. 2	Westmoreland,	Brigstock,	London,	Feb. 13	Batavia,	General,	
5	Samuel Wright,	Coffin,	Whaling,	Jan. 16	Whaling,	Casks and Provisions	Just from home six months, 100 barrels.
7	Palestine,	Cuinblish,	do.	9	do.	do. do.	do. 200 do.
22	Com. Preble,	Elridge,	do.	25	Boston,	Sperm and Blk. Oil,	Full ship, eighteen months out.
27	Bengal,	Jackson,	do.	Feb. 4	Boston,	do. do.	Full ship, two years out.
31	Beagle, H.M.S.	Wickham,	NW. Coast				
Feb. 1	Chelydra,	Small,	Bristol,	Feb. 10	Launceston	General,	Put in for refreshment.
5	Planter,	Morrison,	Leith,	Mar. 1	Launceston	do.	Mr. Schoales left.
9	Christina,	Bell,	Sydney,	Feb. 17	Batavia,	do.	Discharged part of her cargo at South Australia.
9	Marcia,	Moshei,	Whaling,	18	Whaling,	Casks and Provisions	Just eight months out.
12	Pysche,	Stephenson	Ballie,	18	S. Australia	Rice,	Brought five ponies, sold very high.
16	Washington,	Conel,	Whaling,	Mar. 1	Boston,	Sperm and Blk. Oil,	Full ship, twenty months out.
22	Stephania,	Bonnie,	do.	1	Whaling,	Oil and Provisions,	1,150 barrels, only out eight months.
26	Palladium,	Prentice,	do.	12	do.	do. do.	1,600 barrels, do.
26	Friendship,	Taber,	do.	15	do.	do. do.	1,150 barrels, do.
26	Honqua,	West,	do.	16	do.	do. do.	2,000 barrels, do.
28	Lady Emma,	Buckland,	Launceston	15	Launceston	Stock,	Colonel Hazlewood, arrived passenger.
Mar. 4	Newark,	Winslow,	Whaling	18	Whaling,	Oil and Provisions,	1,330 barrels, eight months out.
4	William Baker,	Bowen,	do.	18	do.	do. do.	100 barrels, do.
10	Condor,	Harding,	do.	23	do.	do. do.	500 barrels Blk. and 100 bar. Sperm, 8 months out.
22	Draper,	Howland,	do.			do. do.	800 barrels Blk. and 100 sperm, eight months out.
April 2	Elizabeth,	Back,	Launceston			Stock,	Left Launceston 21st of February, 1840.
3	Huntress,	Hull,	Whaling,			Oil, Bone, and Provisions,	1,100 barrels oil, 10,000lbs. bone, five months out.
3	Minerva, sch.		K G. Sound				

RD. M. B. BROWN, Resident.

REMARKS ON THE BAY OF ACRE.—*Coast of Syria*, 1840.—*By Mr. G. Biddlecombe, Master H.M.S. Talbot.*

CAPE BLANCO to the northward of Acre is moderately high and white, is easily distinguished at fifteen miles distance; to the southward the coast becomes low, forming a small bay to a point about three miles from the cape, when it continues nearly in a direct line with sandy beach the whole distance to the fortress of Acre, which stands on the northern part of the bay, and is easily distinguished twelve miles at sea, having a citadel on its northern side, and a large mosque near its centre. Mount Carmel forms the northern part of the bay, the mount is moderately high and regular, with the convent of St. Elias on its western height, and the town of Kaiffa on its northern shore. The land from Kaiffa to Acre is very low, with a sandy beach all round the bay.

The southern and western faces of the fortress of Acre stand in the sea, and on the south-east side is a sea gate, just inside the old Mole. The sea faces, previous to the action, were said to have from 160 to 200 pieces of cannon of different calibre mounted; the land faces are much stronger, having two immensely wide ditches and a great many outworks, with a great number of cannon mounted, all in a good state; and it is generally supposed, if properly garrisoned, it would be impossible to take it on the land side.

Numerous shoals lie in the vicinity,—the first is a shoal continuing in the direction of south-west, (true) from the southwest extreme of the fortress, to a distance of 950 yards, of two and a half to four and a half fathoms, (sand and gravel,) when it deepens to five and five and a half fathoms for a short distance, where another shoal commences of four and a half fathoms for a distance of nearly a mile from the fortress, when it deepens to seven fathoms immediately.

The outer shoals, the north end of which lies about three-quarters of a mile north 60° west, (true,) from the north-west extreme of the fort, extend nearly two miles in the direction of south 20° west, (true) with channels between them, and in some places are patches of four and a half and four fathoms rock and gravel.

To go in to the northward of the shoals, bring the large mosque on with the north-west angle of the fortress, bearing south 45° east, (true) run in with that mark on until you are within half a mile of the fortress, when you will have seven fathoms, then keep away in the line of the fortress at the same distance off shore, until you bring a remarkable white house (a little inshore and to the northward of the fortress,) on with the north-west angle of it, bearing north 49° east, (true,) or until the Mole Rock opens to the southward of the fortress, when you may haul in gradually: but avoid losing sight of or shutting the north-west angle of the fortress in by the south-west angle, (as that keeps you clear of the shoal extending from the south-west extreme of the fortress,) until you see the wooden jetty or landing place, which is inshore of the Mole, between the two Mole rocks; which mark just takes you along the south-east edge of the shoal, in five fathoms, and you may anchor in five and a half fathoms, sandy bottom, about two cable's

from the Mole Rock, with it bearing north. Small coasting vessels go inside the Mole, but there is only little water.

To go to the anchorage between the shoals, bring a remarkable hill with two peaks in line with the south extreme of the Mole Rock, bearing north 89° east, (true,) run in with that mark until you bring the white house on the north-west angle of the fortress, bearing north 49° east, (true,) then proceed as before described.

To go in to the southward of the shoals, after passing Cape Carmel, it is necessary to give an offing to clear the shoal ground off Kaiffa, when you should haul in to the Bay of Acre, and shut Cape Bianco in with the fortress, and as you get to the northward, open the wooden jetty before described of the easternmost Mole Rock,—steer up by it, and anchor as before.

Latitude observed of the south-west extreme of the fortress of Acre, 32° 54′ 41″ north. Longitude of do. by chronometers, 6° 52′ 18″ east of the Arabs Tower at Rhodes, or 35° 7′ 18″ east of Greenwich.

Longitude of Seraglio Point, eastern extreme, by chronometers, 0° 45′ 32″ east of the Arabs Tower at Rhodes, or 29° 0′ 32″ east of Greenwich.

G. BIDDLECOMBE,
Nov. 1840. *Master H.M.S. Talbot.*

THE ESCRETIS ISLANDS.

WE left Marmorice with a southerly wind, and stood to the W.S.W. for Candia, but the wind coming from the south-west off the islands of Escretis, we were obliged to bear up and run back to the island of Kos, where we anchored till the weather moderated.

The island of St. John, which is clearly seen at thirty miles distance, appears quite safe, (having passed close to it,) on its northern side between it and the Safrania Islets; but to the south-eastward are the Escreti Islets, which are very dangerous, being very low, and a reef extending some distance to the south-east of the southernmost islet; there appear five in number, and midway between St. John and the Escretis is a very small and low islet, with a reef about a mile distant from it, bearing S.W. ½ W. (magnetic,) from the islet, with some of the rocks about the height of a small vessel's hull above water. Another similar reef we observed about two or three miles south-west (magnetic,) from St. John, but the weather would not admit of lowering a boat to examine it, but great care should be observed in nearing the Escreti Islets, particularly at night.

G. BIDDLECOMBE,
21*st April*, 1841. *Master H.M.S. Talbot.*

A VOYAGE ALONG THE WESTERN COAST OF SUMATRA.

London, 26th September, 1841.

SIR,—I beg leave to communicate you some brief remarks, made during a coasting voyage for Pepper, on the west coast of Sumatra, from

Padang northward as far as Cape Felix, in the Frankland, of Liverpool, under my command, from August to November, 1840.

On my outward voyage to Padang, I made South Poggy:—wind light from north-west with fine weather,—stood in for the south point of the island. At noon, of the 19th of August, the extreme point bore E. ½ N., by compass three miles and a half; latitude obs. 3° 20′ 15″ south, longitude by chromometer 100° 32′ east, by ☉ and ☾ 100° 31′ 15″ east, which make that part of the island eleven miles farther south, and fifteen miles more east, than the situation assigned on Norie's chart. The channel round this part of the island appeared quite clear of dangers, as nothing could be seen from the masthead at a considerable distance around. I intended to have taken that channel, but the wind veering more to the north, with some easting, induced me to work up along the west side, and adopt the channel between the North Poggy and South Pora, which I found safe and open, with a distance across about eleven miles. On my homeward voyage, I came through this same channel in a dark squally night, and would, at all seasons, adopt it, particularly if bound to the northern ports of Sumatra; care, however, should be taken in shaping a course through in the night, to guard against the south-easterly current in the north-west monsoons.

Arrived at Padang on the 21st of the month, and sailed for the Pepper coast on the 1st of September:—coasted up to the northward by the inner passage, (which I found tedious and perplexing, owing to strong north-westers, lee current, and calms,) at some risk of being set upon some of the surrounding dangers, which made frequent anchoring indispensible.

On the 12th of the month, I reached Nattal, or Onjong Carracura; making no progress to the northward, I was induced to stand out for Pulo Nyas. In approaching that coast, I found the wind more variable, and less current, which enabled me to work up to the northward pretty briskly along the east side. I made Samsama, a small island contiguous to the coast, in latitude 0° 53′ north, longitude 97° 48′ east, being eleven miles farther south than laid down on the chart. The south-east end of Pulo Nyas, 0° 30′ north per bearings; the coast along this side of the island is clear, except close inshore,—in working along the coast, a ship may borrow in with the land, in order to benefit by the land breeze at night.

N.B. The long range of reefs that stretches to the southward from Paulo doa, as lay down on the chart, must be further to the north-eastward than the situations assigned on Norie's chart, as no danger of any description could be seen from the masthead at a considerable distance around, when, by actual observation, the ship was within one mile of the southern extreme of that shoal, observed in 0° 57′ north, longitude 98° 13′ east. The chart lays down that part of the shoal in latitude 0° 58′ south, longitude 98° 13′ east.

Pulo Lacotta I made in latitude 1° 28′ north, longitude 97° 51′ east, by meridian altitude and chronometer. Pulo Doondoon, or Bird Island, bears N. ¾ W. from Pulo Lacotta, distant twenty-one miles, which places it in 1° 48′ north, and 97° 49′ east, whereas, the chart makes the distance between the *two, only four miles*,—the sand bank is about four miles S. ½ W. from Bird Island. S.S.W. from Bird Island,

at the distance of two miles, there is a small coral patch, not more than eighty or ninety feet in extent, with five and six fathoms on it; the ship passed over it quick, got only two casts of the lead; saw another small patch of discoloured water in a north-east direction from the island, about three or four miles distance.

The north-west end of Pulo Mansular I made 1° 40′ north, longitude 97° 18′ east, per bearings from Bird Island. On my return to Padang from the Pepper coast, I adopted the same route, and I found the positions of the above places to correspond as laid down on my outward passage, having passed close to them in both routes. Javo Javee, or Passage Island, I made in latitude 2° 22′ 15″ north, longitude 97° 24′ east. This island may be seen six leagues off in clear weather, and is about a large quarter of a mile in circumference, with many large cocoa-nut trees upon it. I rounded the east side at less than a quarter of a mile off, carrying from eleven to thirteen fathoms, rocky bottom. This channel is perfectly safe with a commanding breeze, as the flats that shelve off the east side can be distinctly seen, and be avoided in daylight, but it would not be prudent to attempt it at night, as the tides hereabouts are very irregular, being somewhat deflected by the contiguous shoals, which I found to be the case when at anchor in the neighbourhood of the island.

In coming from the southward, I made Linkel Point, which I would always advise to do; the point may be easily known by a large clump tree on the extreme. With this point bearing north-east, per compass nine miles, I steered for Passage Island N.W. ½ N.;—endeavoured to get through before dark, but the wind failing upon a southerly current, I was obliged to anchor with the stream in sixteen fathoms, the island N.N.W., distant three miles. On my return to Padang, I had occasion to anchor for the night, the island bearing S.E. ½ S. five miles, in twenty fathoms, coarse bottom; in both instances whilst at anchor, (which happened near the full and change,) I found the tides during the whole of the night, from S.S.E., south-west, and E.S.E., nearly two knots; their greatest rate was, when setting S.S.E., which I conclude was occasioned by the northerly wind that blew during that night.

On the 15th of September anchored in Tampat Tuan Bay; the best anchorage in this place is in twenty fathoms soft ground, the point bearing W. ¾ S., distant one mile. You will then be about the same distance from the reef, that lies E.S.E. of you in the bay; with the point at that bearing, you will be a little sheltered from the north-westers. There are two rocks off the point above water, that appear like a boat at a distance, one about a quarter of a mile S.S.W.; the outer one is nearly two miles distant, bearing S.W. ½ S. from the point, with heavy breakers on them in blowing weather. Good water can be easily procured with your own boats here, as the river is not more than ninety yards from the beach,—roll the casks up, and fill them and tow them off. The anchorage I made in 3° 16′ north, longitude per chronometer 97° 7′ east. In going from this place to Allo Pawko, the ship passed over a coral bank, with five fathoms on it with this bearing on,—the white rocks off Tallo Pau Point, N.E.b.E. three miles and half. There is another shoal with from five to seven fathoms, bearing S. ½ W., distant five miles from the Bluff Head at Allo Pawko. The

best anchorage here is with the Bluff Head E. ½ S., three-quarters of a mile off shore.

There is a shoal, I was informed by the native fishermen, with only eleven feet on it, S.S.W. from Mackie Point, six or seven miles distant. The anchorage at Mackie is in seventeen fathoms soft ground, the point on the village side bearing north-west, a quarter of a mile off shore, which will place you about the same distance from the reef, south-east of the point.

In sailing from Mackie, northward, care should be taken not to approach too near the reef off Mangin Point in light winds, as there is a strong indraught upon the point, caused by the under surges of the breakers, which I found by experience in passing to the northward.

In sailing from Sooso, northward, it would be advisable to stand to the south-westward four or five miles, and work up at that distance, until Rio Point bears north-east, and Quallo Moodah N. ½ E. to clear the shoal that lies three miles off the latter, called by the natives Carrang Jadang. Having cleared that reef, you may work up to Cape Felix, at any convenient distance, as circumstances and prudence require.

I am, &c.,

To Capt. Beaufort, R.N. JOS. PEARCE.

THE NIGER EXPEDITION.

EXTRACT of a letter from an officer, on board her Majesty's steam-vessel "Albert," dated Madeira, the 21st of May, 1841.

"After full a fortnight's detention by contrary winds at Plymouth, we started, all things smiling upon us, and had a delightful passage to this place of eight days and a half, when using wind and steam, beating everything we saw,—but two days we ran five and five and a half knots, under canvass alone. The vessel answers admirably with one boiler, yet is not the gain of fuel equal to the loss of time and speed, under general circumstances, as we burned six tons with one boiler, nine tons with two. The prints don't do the vessels justice, they are good sea boats, but at times a little unpleasant; this is inseparable from these shallow flat bottoms. The ventilation answers admirably, besides making it more agreeable, the air is considerably drier, as shewn to the amount of three and a half degrees by the hygrometer."

Her Majesty's steam-vessel Wilberforce,
Sierra Leone, July 1st, 1841.

MY DEAR SIR.—I wrote from St. Vincent, giving you some account of our proceedings there; we completed our arrangements of clearing out, whitewashing, and re-stowing holds, taking in provisions from the transport, &c., all of which we were able to do with great facility, as the place Porto Grande is admirably calculated for the purpose; it is very safe, and though there is a constant swell, it may be avoided by anchoring very close to the custom-house. I found, where no line of

soundings was laid down in Vidal's chart of Porto Grande, ten fathoms one-third of a mile from Punta Botelha. I send you a sketch of the island of St. Vincent, (the outline traced from Vidal's survey,) shewing the elevation and direction of the mountain ridges, with the water courses, &c., which are rather different from his; it has been done for me by Mr. Roscher,* our German mineralogist, who will I think from his talent and energy, be of great use to the expedition. The Soudan and the transport sailed for Cape Coast Castle, and the Albert for Sierra Leone, on the 18th ult., and I was ordered to San Antonio for water. I arrived off Tarafal Bay in the night, and anchored on a bank, (where deep water has been supposed,) with seventeen fathoms, hard sand, bearings (true,) south point of San Antonio, south 38° east, and Tarafal Bay, north 63° east, three-quarters of a mile. We ran along at daybreak, looking for the bay, which does not shew itself unless when close inshore. The best directions would be, to anchor half a cable's length from the shore, at the only green spot. Although there is a sandy beach, I found that it would be impossible to roll the casks over it, as there are a great many stones. I shifted my berth therefore to the steep stony beach, abreast of *the palm tree*, at the foot of which we formed a pool and led the water to it, and could thus have a hose brought into the *paddle-box boat*, anchored close to the shore. These boats have been of the greatest use to us, in this as well as at St. Vincent, and our watering would have been very easy, but we were obliged to depend for our supply on the filling of an upper pool for another, and our pool below was in such a thirsty soil, that if we had not casks ready to fill, the water soon disappeared. Immediately on leaving Tarafal Bay we had a stiff breeze, and a heavy sea, and found the foremast sprung, which prevented our using the sails; I was also afraid one of the boilers was damaged, however, we got over all our difficulties, and joined the Albert at this place. The Soudan put in on the 29th ult., not having sufficient coals to carry her to Cape Coast Castle. As there are no soundings laid down on our line of approach to Sierra Leone, I had them taken frequently, and I send you a tracing of them. I apologised to you in my last, for not having sent you my magnetical observations, I now have the pleasure of transmitting those I have made for dip with Fox's needle, for intensity with Hansteen's apparatus, and for variation with the committee compass, and with the declination magnetometer. In observing with the latter instrument, many difficulties arose, I had no precise direction for much that I required to know, such as the position of the theodolite, and I only determined its distance from the needle, in the three last experiments for declination. Indeed, I was so annoyed at constantly finding a different reading, after the reversal of the needle, that I frequently shifted the instrument, in order to take out the error; thus, after great labour, I found all my work to do over again; but when at length I resolved to allow for the error, I found that in the examples given by Weber, the same and greater differences existed before and after reversal. Scientific men will smile at my difficulties, but at this distance, with none to dispute it, I take no small share of satisfaction at having

* Mr. Roscher's description follows.

so far succeeded. As there was a very strong wind the whole time, I was obliged to observe in a tent, and to have the true bearing of the *mark* taken with another theodolite outside, but near me, and in a line with the theodolite of the magnetometer; the tent was I believe sufficiently removed from any magnetic influence: it was a spot where there were formerly salt-pans, and had a considerable depth of alluvial deposit and clay beneath. I hope to be able at Cape Coast Castle, to practice with the horizontal force magnetometer, so that when we arrive at the field of our operations, I trust I shall be able to make good use of the instrument.

We have been detained here as elsewhere longer than we expected, but as yet we have no reason to complain of the weather, which is beautiful, with an occasional tornado or squall to improve it, and we are all in good health and spirits. We have prepared a little schooner which was bought here, to assist in carrying our stores, though she will do no more than take those of the model farm. We are now on the point of sailing for Cape Coast Castle, from which place, I will do myself the pleasure of writing to you again.

Yours, &c.,

To Capt. Beaufort, R.N. WILLIAM ALLEN.

THE island of St. Vincent, on the western coast of Africa, is situated between 16° 28′ and 16° 56′ 30″ north latitude, and 24° 39′ 23″ and 25° 21′ 20″ of west longitude. The general aspect of it is generally mountainous, with sharp peaks, the coast is rocky and rises abruptly, but the tide ebbing leaves a sandy beach. No doubt can be entertained that the general character of the island is volcanic; the interior is formed by ranges of hills of different heights. The surface of the country is undulating, and in the interior and loftier parts, has a tendency to table lands.

With regard to the geological formation of the island, consisting of feldspathic basalt, the soil is rich, in the valleys sandy, generally as well in the plains as on the sides of the valleys, which on the south side are fertile, particularly in the rainy season, where the ground is wooded and in some places cultivated. At the depth of seven or nine feet below the surface of the valleys, the soil becomes loamy, and abundance of water may be obtained, which may render the island capable of cultivation hereafter, with sugar, indigo, cotton, bananas, oranges, sweet potatoes, &c. Springs of water might easily be found by digging, that would yield a supply not only sufficient for the inhabitants, (about 560,) but also for the different ships that may arrive.

With regard to the physical divisions of the island, it is divided by a valley extending from west to east; in the southern division one range of mountains proceed from west to east; another from north to south, but both connected by a hill. The northern part of the island consists of mountain chains, lying north-east and south-west, and north-west and south-east. The general height of the mountains is 12,500 feet, but by barometrical observation, the loftiest point is 2,410 above the sea.

I observed cultivated ground on a table-land at the height of 2,400 feet; it produced beans and pumpkins, the former introduced from the West Indies. The only tree growing at this height is the Euphorbia, but at the loftiest part there is vegetation.

The water runs from the elevated parts to the sea coast, and loses itself in the sand, but the quantity of it is not capable to form in dry season a river; the principal valley is divided by a hill, which connected the northern and southern division. The water course running west, takes its rise 520 feet above the level of the sea; the bed is gravel covered with mud united by chalk. The coast forms a great number of little bays, in general capable of containing vessels; the chief port is named Porto Grande, situated on the west side of the island, and is a good anchorage for about 300 vessels;—water and provisions cannot be easily procured, the former defect might be remedied. The wind blows generally from the north-east, in the rainy season the south-east wind prevails, which commences in the month of July, and ends on the 15th of October. During the last years the rains have been regular in point of time, but sometimes not in quantity.

Those of the inhabitants belonging to the negro race, have from their intercourse with Europeans, lost much of their original character; they live generally to a great age, for amongst a population of about 560, some have obtained the age of more than 100 years. They are a very industrious race as far as regards the means of obtaining subsistence. They are in general handsome, and obliging in manner. The inhabitants are subject to the Portuguese, whose language predominates; there is not the least trace of the native language of the island. The only articles of traffic exported from this island are skins, fruits, and fish. The chief articles of food are vegetables, beans, and Indian corn, grown in the island; bananas are brought from St. Antonio;—fish caught on the shores. Tobacco and clothes appeared to be the most acceptable.

C. G. Roscher.

Extract from another letter.

"Porto Grande, St. Vincent. of the Cape Verd Islands, is well adapted for refitting in. as well as acclimatizing the crews of vessels going to the African station. There is no endemic disease there as at St. Jago: the climate resembles that of Ascension, whithout being so hot, and though there is scarcely any vegetation on the island during the greater part of the year, yet a sufficient quantity of live stock, vegetables, &c., for several vessels can be always obtained there, and at the neighbouring island San Antonio. It is deficient of water, (except for daily consumption,) but this can be procured at Tarafal Bay, St. Antonio, distant twenty-three miles.

"The variation in June, 1811, was 17° 17′ west, dip 49° 10′."

We annex the following letter from Mr. Bartlett, on the subject of the mail steam-boats to America, as it alludes to the African expedition.

SIR.—The Soudan, Capt. Allen, arrived here on Saturday last. The afternoon was wet, and the captain and I talked about steam-boats. I said, alluding to the President, that I was afraid that the smashing of the boats to the United States and Halifax, would not be unfrequent, and if so, such accidents would check, and perhaps put an end to steam-boats driving to the north in winter. We then talked about the West India boats, and the plan of going all through or touching at the Azores. The Azores are nice places to look at in the map, but if they "write their annals true," they are very bad to approach in the winter, and even when arrived at, communication cannot always be had. I remarked, that it appeared to me, that in England from the desire to attain extreme rapidity of communication by steam-boats, other considerations were lost sight of.—I suspect eventually *regularity* of arrival, and *security* of the vessels will become predominant considerations in their speculations, and if so, even if the traverse should be longer, you must look out for fine weather sea, and places to stop where you *may coal*, and make trifling repairs.

On the security and regularity plan therefore, I submit that the boats should call at Madeira, stop at Tenerife, go to Antigua, or some one of the leeward islands; from thence to start two boats, one to Jamaica and the Spanish main, the other to Puerto Rico, Havana, and Mexico. This island seems placed by nature to be the link of communication between the old and the new world. A hulk, with coals, properly moored, might lie here all winter in perfect safety; steam-boats can enter night or day without risk, and if the swell would sometimes prevent taking coals alongside, they might always be put on board with launches. Premises might easily be obtained for stores and workshops. The Spanish government are anxious to have a steam communication between this and Cadiz; if, therefore, a boat were to run between Lisbon, Cadiz, Madeira, and Tenerife, to meet the West India boats, the south of Europe, indeed the countries on both banks of the Mediterranean would be brought within a few days communication of the West Indies and America, and no doubt a great many passengers for America would take advantage of this facility; besides, of the two or three hundred that now stay at Madeira, a great many would probably go the round with the steam-boat. Here, therefore, you have the great desideratum for steam-boats, facility, security, regularity, and passengers. As far as going from England is concerned there is no difficulty, the tug would be coming back again!

May 19th, 1841.—The wind came round to the north yesterday afternoon; the Soudan and the transport got under way, and were out of sight by 7 o'clock.

Yours, &c., RICHARD BARTLETT.

Santa Cruz, 18th May, 1841. *British Consul.*

The following from the Soudan is also important.

"We are all in the best spirits. The Soudan, an admirable sea boat, she made better weather of the gales than the Harriet. I steamed all the way from Lisbon one boiler, and working expansively six knots average with a fair wind, and four calm!

"My consumption one boiler,—common coal was two ton in twenty-four hours. Ditto Grant's fuel, one and one-third ditto."

The above contains the latest accounts of the progress of the Niger Expedition excepting that it had reached Montserado Roads, as stated in p. 718 of our last number, and we shall look for farther intelligence concerning it with much interest. There is another subject connected with the physical welfare of our countrymen engaged in it, to which, through the attention of Sir John Barrow, this journal was the first to engage the public mind, and which has been since followed up by other periodicals: we allude to Professor Daniell's experiments on the various specimens of water from Africa along with the case of H.M.S. Triumph in 1810, especially pointed out by Sir John Barrow, in our number for January last. The subject has been fully investigated both by subsequent experiments as well as those to which we have alluded, and the following summary of a lecture delivered on it, by the professor, will form a satisfactory conclusion, while we are waiting for further accounts.

At the Royal Institution, on Friday evening last, Mr. J. F. Daniell read a paper "on the spontaneous evolution of sulphuretted hydrogen in the waters on the western coast of Africa and elsewhere." He commenced by observing, that this subject was now interesting on two accounts—*First*, because it would recall to the members of that institution the experiments of Sir Humphery Davy on the subject, and which led him to advise the adoption of ship protectors; and, *Secondly*, in consequence of the Niger expedition, fitted out to visit and endeavour to introduce civilization on the western coast of Africa. The effect produced on copper sheathing by the presence of sulphuretted hydrogen in the waters on that coast, was, he premised, well known to every one informed respecting vessels visiting it, and it was a fact that a cruize of nine months on the western coast of Africa injured the copper sheathing of a vessel as much as four years' wear in any other part of the world. The lecturer showed a piece of sheathing take from the bottom of a Government frigate that had not been many months on the African station, and also a piece from the Royal George, sunk at Spithead, and which had been under water 60 years; the former was eaten through in very many places, and so thin all over that he might push his thumb through it, while the latter was tough and in excellent condition. His attention had been directed to the subject by the Lords of the Admiralty sending him 10 bottles of water, from as many different places on that coast, extending from 8 deg. north of the Equator to 8 deg. south, to analyse, and to report on the component parts thereof, and the acompanying table was the result:—

Places the water was sent from.	Sulphuretted Hydrogen.		Saline Matter.
	Cubic		
	Feet.	Inches.	Grains.
Sierra Leone, per gallon . .	6	18	1,696·0
Volta	6	99	2,480·0
Bonny River	1	21	1,788·0
Mooney	..	..	2,104·0
Gaboon	..	..	2,169·0
Lobez Bay	11	69	2,576·0
Congo River (Mouth) . .	0	67	188·0
Congo River (35 miles inland) .	..	..	8·0
Bango	4	35	2,736·0
Lagos	14	75	1,920·0

All the bottles were hermetically sealed, and he had no doubt the water was

in every way as good as when taken from the rivers. On drawing the cork, he was immediately struck with the smell of sulphuretted hydrogen, and adopted the general idea that it arose from animal and vegetable decomposition, but it had since appeared to him that such was not entirely the case. The gas extended a distance of 15 or 16 deg., and in some places as far as 40 miles to sea, covering therefore a space of 40,000 square miles. Now what could the origin be? He thought that it arose from the action and reaction of vegetable and animal matter brought from the interior by the rivers upon the sulphates in the sea water. With this idea he gathered last autumn some leaves from a shrubbery and put them into three jars; into one of which he poured some plain New River water, into the second some of the same water in which three ounces of common salt had been dissolved, and into the third the like water, in which some crystallized sulphate of soda was dissolved. To the covers of the jars he fixed inside some some litmus paper, and placed them in a cupboard, the temperature of which varied from 70 to 100 or 110 degrees.

The effect was, that in the first the litmus paper was perfectly white, and the smell by no means unpleasant; in the second the paper was quite white, and the smell similar to that of a preserve; but in the third jar, in which a sulphate was present, the paper was nearly black, and the stench was horrible and nauseous in the extreme, as every one knew the smell of sulphuretted hydrogen gas to be. Now sea-water contained sufficient sulphates to produce this effect, under peculiar circumstances. But a more interesting part of the subject was the miasma, so injurious to life on the marshy shore of Western Africa. Some persons said that if science cannot point a remedy, it is useless to investigate the causes, but he did not so think; if science could not point out a remedy, still it could point to something as a palliation of the evil. The presence of the injurious gas was easily tested by the roughest hand, so that places in which it abounded could be avoided; and if imperative duty rendered it absolutely necessary to go to those places, then plentiful fumigations of chlorine gas would effectually destroy the sulphuretted hydrogen. The effect of this gas was not only visible on the Western coast of Africa, but in many places elsewhere, although not to so great an extent. Might not the jungle fever of India, the periodical fevers of New York and Charleston in America, and the minor diseases on the coast of Essex, be traced to effects of this deleterious gas? It was a well-known fact that the ships in the mouth of the Medway consumed more copper than the other ships. Chlorine gas then destroyed the injurious gas, and it was easily made, and the materials very cheap; the Government had plentifully supplied the African expedition with the materials necessary for the most perfect chlorine fumigations, and he had the pleasure of believing that his report founded on the analysis of the waters submitted to him, and the precautions taken, had imparted confidence, not only to the gallant men who composed that expedition, but also to those who had interested themselves in its welfare, and who had been actuated by the most Christian spirit. He hoped its success would be commensurate to its deserts.

The lecturer was continually applauded by the meeting, which was rather a full one. The treasurer was in the chair.

We understand that accounts of the Expedition have been received, dated 28th of July, off Cape Coast Castle.

THE FRENCH WHALE FISHERY.

Substance of the report of Capt. Cecille, of the corvette Heroine.

(Continued from p. 597.)

ON the 24th of November, Capt. Cecille departed in the Heroine from the Croxet Islands, and on the 21st of December reached Amsterdam

and St. Paul Islands, which are familiar to most of our readers. In our volume for 1838, p. 842, we inserted some remarks on the volcano of Amsterdam island, made by one of our ships, on which occasion we noticed the mistake which has obtained in the charts respecting the exchange of names of the two islands. The same appears to have been followed by Capt. Cecille. We shall, however, give the captain's description of the islands, cautioning our readers to substitute St. Paul for Amsterdam.

It is now about fifty years since Lord Macartney on his way to China, visited these islands, and in the account of his voyage will be found, not only the description, but a plan and view of these islands, and particularly of the break in the crater produced by the eruption of the sea. The same volcano was seen recently in action, as we have already alluded to, but we will give our readers Capt. Cecille's account of it: he says

"We ran along the eastern coast from north to south, at a short distance, and could plainly distinguish the trees and rich vegetation which covers a part of this island, giving it a cheerful aspect. We also plainly discerned the blackened craters of many extinguished volcanos, which, when M. Beautemps Beaupré surveyed the island, and even long afterwards, were subject to eruptions. Steep on all sides, and surrounded by a belt of weed abounding in fish, the island appears inaccessible, excepting in a single spot in the north-east, near to a flat rock, and not far from a small hut in ruins, which we discerned from the sea. There is water in many places, but whether it is plentiful and can be readily obtained I cannot say. Wood appeared also abundant. We cruized about this part of the coast the remainder of the day, and being satisfied there were no ships in this latitude, we directed our course for the island of St. Paul, which we reached the next day at noon. Arrived at the eastern side of the island, and having on our right an isolated rock, rendered somewhat remarkable by its pyramidal form, we found ourselves opposite an immense opening formed by the falling of a considerable portion of it into the sea. This opening narrow at its base, and increasing in breadth upwards, leaves a passage for the sea, which fills a crater, thus forming in the island a vast basin, where large ships might find excellent shelter, if their entrance were not interrupted by a ridge of rocks on which there is not more than five or six feet water.

"This lake without a strand, enclosed in an inverted cone, the steep inaccessible sides of which are from 220 to 250 yards above the sea, is not less than 1,100 yards long, and 350 wide. Its depth is from seven to fifteen fathoms water on a black sandy bottom, and four fathoms all round it at a cable's length and a half from the shore.

"The sides of this basin are covered here and there with large beds of moss and lichens, the varied hues contrasting with the burnt rocks beneath them; and a thin vapour escapes from amidst these humid plants, imparting to the whole a vague and unaccountable effect. The tranquil surface of the lake, occupying the place of an immense furnace in the midst of an ever-agitated sea;—the vitrified rocks heaped into every variety of form by former convulsions;—the very suspension of animated nature, where not even a tree or bush is seen, the profoundest solitude being broken only by flocks of sea birds, the sole inhabitants;—

the volcano itself, the sources of whose fire are seated beneath the immeasurable depths of the ocean,—everything indeed in the whole island, one of the most extraordinary in the world, tended to subdue the joyous effusions of the mind, and to lead it in spite of itself to solemn meditation."

The next place of importance visited by Capt. Cecille was King George Harbour, in Australind, long ago examined by Vancouver and Flinders, from whence he goes to Van Diemen Land, Hobart Town, and thence to New Zeeland; and we find the following observations on the river Kawa-kawa in the Bay of Islands:—

"Although at different periods distinguished navigators have already visited the Bay of Islands, and have added to its hydrography, the plan of this immense bay is only yet an outline. This is not to be wondered at when we consider the immensity of the work, and the time which would be required to complete with precision its numerous details, and compare these with the general short intervals which vessels remain there. More fortunate than my predecessors with respect to time, I have, nevertheless, shrunk from the execution of so great a work, persuaded that I should do it but imperfectly. I have preferred undertaking a small portion, and doing it as correctly as possible, reserving to myself to extend the limits of our work, if time permitted it. The greatest part of the task had been accomplished by Capt. Duperrey, hence it only remained to continue what the captain of the Coquille had commenced, it appeared to me that the port of Manawa had been surveyed by him with great care, while he had done nothing more than to indicate the position of the Kawa-kawa river, and the existence of a very dangerous mass of rocks situated on the western bank of this river, and making its entrance very dangerous. The Brampton was lost upon this bank, the Favorite touched on it, and more recently, 1838, the French whaler, Angelina, struck on it, and it was only by the greatest good fortune that she got off again. The principal European establishments of the Bay of Islands are built on the banks of the Kawa-kawa, and it is to this river that the numerous vessels go, which commerce or the want of refreshments attract to this part of New Zeeland. These considerations decided me it was evident that the river Kawa-kawa was more important than any other part of the Bay of Islands, and I gave orders that the most minute survey of it should be made from its mouth to the pass of Pomaré, where it is divided into two branches. I entrusted this work to Mr. Fournier and D'Ubraye who have executed it with the zeal and correctness which belongs to these officers.

"The limits of the Favorite bank have been carefully determined, and we have had the good fortune to discover in the interior of the river, a group of rocks, the more dangerous from appearing only at low water spring tides, and which were entirely unknown. I have given to this group the name of the Heroine Rocks, to record the visit of the Heroine to the Bay of Islands.

"During our second visit we surveyed that part of the bay between the Isle of Roa, and the northern coast, but I do not presume to say that there does not exist any unknown danger in that part which may have escaped our observation. Marion anchorage and all the islands to the north-west of it remain to be surveyed. Then the port of Tepouna

and the river Kiddi-kiddi, which will complete the documents necessary for a general plan of the bay.

"The river Kawa-kawa is in the south-west part of the Bay of Islands, to the west of the port of Manawa; it is easily made, coming from the sea, and having entered the bay, haul up along the western coast. Some black islands which are flat, and are remarkable from their dark appearance, may be seen; they are three miles and a quarter distant S. 30° W. from the high rock Tiki-tiki, the outermost off Cape Wiwika, to the right on entering the bay. Having arrived half a mile east from the southernmost of these black islands, (which may be approached much closer,) and altering the course to S.S.W. will take you directly up the river, passing at a proper distance on the left of the entrance the points Wayhihi and Tapeka. If the wind is fair the eastern bank of the river should be passed close, for there are no hidden dangers there, and the Favorite Bank will be avoided, which extends from the opposite shore half channel over. But if entering by night, which I do not recommend, unless acquainted with the river, and the wind fair, it would be necessary to be guarded against a reef of low rocks which extend two cables' length north-west from the high point of Wayhihi, that forms the north extremity of the eastern bank of the river. Those also outside the point of Tapeka.

"The entrance of the river Kawa-kawa presents no serious difficulty, except when it is necessary with a foul wind to beat up to the anchorage. Then the Favorite Bank becomes as dangerous as the rocks of which it is composed are steep, the depth changing suddenly from forty and thirty-five feet to twenty, fifteen, and twelve, and even less, the lead does not announce it in time, owing to the vessel's way; and with the winds from the land, which are very frequent, the sea being smooth, this bank does not show itself at all. It is from one to two miles in extent north and south, and eight-tenths of a mile from east to west. Its southern limit lies east and west from point Tapeka, and its easternmost part lies east and west from point Wayhihi. From this part it extends N.N.W. Situated thus to the west of the points Wayhihi and Tapeka, and extending to the opposite coast which is very low and marshy, in this part it leaves a channel between it and point Tapeka, not more than eight-tenths of a mile wide.

"It is in this channel that captains of vessels wishing to enter the river are obliged to beat. The whole difficulty of this manœuvre consists in judging well your distance from the eastern shore in standing towards the bank, so as to tack in time, and not to run upon it: this estimation of the distance becomes the more difficult, because, as I have already said, the opposite shore is very low and deceptive. It is very important then to have marks to distinguish the limits of the bank, and these Nature herself seems to have provided. In fact, a line from the western side of the rock Tiki-tiki to the eastern side of the southernmost of the black islets passes exactly the eastern and south-eastern limits of the Favorite Bank. It is only necessary then for captains entering the river to observe well these marks, and in standing towards the bank to tack a little before bringing the rock Tiki-tiki in contact with the southern and easternmost of the black islets.

"This extremity of the bank is indicative also by a line from the

outermost part of the western shore of Motou Maire to the last houses of the village of Pahia standing on the coast to the south of this island. A ship should tack generally when the Missionary Church is on with the eastern side of Motou Maire. I do not make this observation but as supplementary, because for strangers the church is difficult to distinguish from the other buildings of the town, nevertheless it is very useful when Tiki-tiki is concealed in fog. The north-east limit of the Favorite Bank is also well indicated by a line from the point Mangui Mangui Noui to the western point of Motouroa. The direction of this line is N. 31° W., and S. 31° E., thus by keeping always to the eastward of this line you are sure of avoiding the bank.

" Another danger exists in the interior of the river called the Heroine Rocks:—this group, two heads of which have dried at the level of the sea in the great tide of September, is about a cable's length across each way; its eastern extremity is nearly half a mile distant from the western coast, and at a little more than five cables' length N. 10° W. from the northern point of Motou Maire. Likewise when navigating on the line east and west of this danger, it will be necessary to avoid passing to the westward of a line north and south from the highest summit of Motou Maire. Between the Heroine Rocks and the western coast there are nineteen and twenty feet water at low water.

" There is also a rock at the waters' edge a good cable's length N. 30° W. from the northern point of Motou Maire, but as it dries every tide it is less dangerous.

" To conclude with the rocks at the waters' edge I will mention another danger of this kind at the entrance of the bay which leads to the port of Tepouna, and to the river Kidi-kidi, at two miles and a half S. 33° W. of Tiki-tiki, and at one mile three-tenths N. 20° E. from the southernmost of the black islets. It is at two cables' length from a line from Tiki-tiki to the southernmost, so that in keeping always to the east of this line the rock will be avoided. I am not aware whether this danger always shews itself, already known by some sailors residing at the Bay of Islands. Capt. Du Petit Thouars who visited this bay after me, was informed of its existence, and examined it; it is after his observations that I have laid it down on the chart.

" In former times when vessels frequented the river Kawa-kawa, they generally anchored in Kororareka, in front of the village of that name on the eastern shore, where at three cables' length from the land they had from twenty-three to twenty-six feet water, and excellent holding ground. Ships are perfectly safe at that anchorage, but after the serious and frequent disturbances occasioned by the numerous drinking houses established at the village, they have caused mutiny among the crews, and compromised the success of many vessels in their voyages. Many captains who have suffered personally from the violence of the masters of such drinking houses and their adherents, avoid this place, they prefer going further up the river, and anchoring to the southward of the islands Rangui and Tore-tore, where the anchorage is equally good; there they are nearer the stores of Messrs. Maire and Clendon, and the crews less exposed to the seductions of the bad population of Kororareka, who entice them to desert. At this anchorage there is thirty-five to forty-five feet water in the channel; a mile higher in

the river there is fifty to sixty feet; and a third of a mile to the northward of the pâ of Pomaré there is thirty to thirty-five feet depth.

"In all parts of the river vessels may careen and refit, and carry on those repairs that are necessary. On the little isthmus which connects the islet of Tore-tore with the main land we grounded the Cosmopolite, to stop a leak under the heel of the main-mast. Having laid her on shore in the high tide of September, the water fell nine feet, and enabled us to repair the leak.

"At the pâ of Pomaré the river divides into two branches, one which is more than half a mile across, takes the name of Waikadi, and runs from the east; the other, which preserves the name of Kawa-kawa, is about a third of a mile in breadth, taking a south-west direction. I have gone up these rivers in boats as far as the tide reaches, which is about six or seven miles from the junction. At this distance they cease to be navigable for the smallest boats. It was beyond these limits, that accompanied by a strong body of sailors, and guided by my deceased friend, the naturalist, Allan Cunningham, I collected specimens of the most remarkable wood in New Zeeland, for the Museum of Natural History at Paris.

"To the west of Motou Maire lies the river Waitangui, (the noise of waters,) it can only receive at its mouth vessels of small tonnage; beyond this there is but a very little water. At a mile and a half from its mouth in the interior is a perpendicular fall which forms a complete barrier. The sheet of water falls about six or seven metres, and twelve to fifteen metres wide.

"The watering place most abundant and commodious, on the river Kawa-kawa, is that close to the village of Kororareka; it was there where the tides were observed, and on the little islet Kairaro three cables' length from the anchorage of Kororareka, the following observations were made:—

Latitude	.	.	35°	16′	S.
Longitude	.	.	174	9	E.
Variation	.	.	13	30	E.

High Water at F. & C. 5h. 40m.
Rise of Tide, 6ft. 6in."

Eastern Dampiers Strait.

Ship Marshall Bennett, Strait of Mindoro, Mar. 12, 1841.

Sir.—It will be seen by referring to the chart that there are two passages in this Strait, one by keeping the New Britain shore on board, and passing on the north side of Rooks Island, the other on the south side of that island, between it and New Guinea. In the chart which I have, the tracks are all marked in the first of these on the New Britain side,—D'Entrecasteax being between shoals off the Low Islands, which lie to the south-east of Rooks Island. A continuation of these shoals I have been informed are interspersed across to New Britain. In passing through in the Marshall Bennett, I therefore adopted the New Guinea side, and found a clear, safe, and wide passage; keeping about six or seven miles from New Guinea, with the beach in sight; the surf broke against the cliffs, there was certainly no danger lying off the land on that side. To the northward we saw two or three of the Low Islands,

already spoken of, from the masthead, but could not bring them lower than the top, they were never visible from the deck; this is the narrowest part, and appears quite clear of every thing as far as our masthead horizon.

Proceeding to the north-westward there is an island inserted as Long Island, extending to the southward until within ten or twelve miles of New Guinea. No land exists in this situation; there is an island nearly in that longitude, the south end of which is about thirty-five miles from New Guinea. I should place it in from 5° 12′ S. to 5° 24′ S., and from 147° 10′ E. to 147° 24′ E.: although I had not an opportunity of observing nearer to it than twenty miles, yet having tacked between it and New Guinea all one night, and ran along the south and west sides next morning, these statements will be found near the truth. By the South-seamen, who like myself, have cruized about here, this is called Crown Island, having a remarkable mountain at the north-west end, about 4,500 feet high, and Long Island is expunged altogether.

Six miles to the N.W.b.W. of this, which I shall call Crown Island, lies a small and high island (about 2,000 feet high, and in circumference about three miles), around which the reefs extend half or three-quarters of a mile. There was also in sight at the same time a small and very high conical shaped island to the north-westward of Rooks Island. This island I was not very near, but it is to the southward of the parallel of 5° S., in about 5° 8′ S:, and 147° 35′ E.; *these*, including Rooks Island were all which we saw, although we hauled up to the north-east towards New Hanover, passing near the situations of two others, one of which is called Volcano Island, and is placed in 4° south; the other, named High Island, in 4° 35′ S.; neither of them have existence as laid down, or they must have been seen, the weather being so clear that New Guinea shewed distinctly when 100 miles distant in latitude.

The land near Cape King William, and to the westward of it is very high. I estimated it by rough computation about 13,000 feet; the other heights given here are also merely intended as approximations, the base being guessed at, but they will give a better idea of the comparative heights than the usual custom of inserting "very high" and "very lofty," as distinguishing features. An instance of this occurs with regard to Bournand Island, off the coast of New Ireland, which is in fact one of the lowest islands in the neighbourhood, something under 2,000 feet.

These remarks refer to Mr. Norie's chart, not having Arrowsmith's, I am unconscious how they may apply to it. It may also be requisite to state, that the longitudes here given, are measured by chronometer from Treasury Islands, and Cape Denis Troubriands Island; these with the Laughlan Islands, and Cape St. George, being the best points of coincidence hereabouts.

Islands in 3° 52′ N., *and* 154° 56′ E.—A group of small and low islands with an attached reef, containing a lagoon, was seen by me in the above situation, while making a passage from New Ireland towards the China Sea, December 10th, 1840, having been previously drifted to the eastward by a strong westerly monsoon and easterly current to the southward of the line. Having no account of any land in this situation, is my reason for calling your attention to it. That nearest to it

in Mr. Norie's chart is Monteverdeson Islands, called Montevarde Island, in the Epitome, and placed in 3° 27′ N. and 155° 48′ E. differing considerably in latitude as well as longitude. I have great doubts as to the existence of any island in that situation; it was but possible our passing without discerning it. With regard to the islands spoken of, we had them in sight three days, (in fact got a whale during the time,) the last of which was fine weather; I observed at noon in 3° 48′ N., with the land N.b.E., and the canoes alongside. For the longitude I had two chronometers, one of which was going, and had always gone well; and on the 1st of December we were *in with* Gardners Island, near New Ireland, making the east point in 152° 4′ E.; also had left Cape St. George, New Ireland, Nov. 14th, considering it in 152° 48′ E. The longitude will therefore depend on the accuracy of these points; lunars I leave entirely out of the question, sometimes coming near enough, and at others scarcely within half a degree; their introduction into matters of this kind seems to tend to confusion.

These islands, although very small, are well inhabited by a fine and handsome race, above the mean stature, of brown complexion, good hair and teeth, and resembling the natives of the Navigators Group. We had twelve canoes alongside, containing about fifty men, who were highly animated and pleased, I suppose at the novelty of seeing strange faces. Cocoa-nuts, small cord rope in considerable quantities, a few fish, and some other trifles were brought for barter, which were procured for iron hooping and a few knives. The canoes are cut from a solid tree of finely grained timber, and very neatly modelled, with outriggers,—some of them carrying twelve men. From the astonishment displayed at seeing our pigs, I conclude they have no warm-blooded animals fit for eating, and that their diet consists nearly altogether of cocoa-nuts and fish: the size of the islands being not more than twelve or fourteen miles around, reef and all, likewise favours the supposition. To be particular, however, I should state that we approached these islands on the south and west sides, therefore the reef in a north-east direction may extend farther out; but I think not; all the land was distinctly in sight, the whole group being at one time within our masthead horizon.

R. L. HUNTER.

ÆOLIAN RESEARCHES.—No. XIII.

[Of the seventeenth century.—Concluded from p. 669.]

HURRICANES are usually preceded by an extraordinary tranquillity of the heavens and seas: possibly, some counter-winds may for a short space ballance one another, and bring the air to an equal poise. So that, those who happen to be in the center of the whirl-wind are at first sensible of no disturbance; as we see in eddys or whirl-pools of water, that, while the circumference is violently agitated, in the middle it continues for some time, quiet and calme.

I have already too long digres'd from my first design, which was to contribute, what I could, to their history; and for this end, I have

collected severall relations which may be of greatest importance to make a fuller discovery of their nature, and the miraculous effects of hurricanes: the first is out of Battista Ramusio; and though I am assur'd, that the best accounts are to be had from Oviedo, and other Spaniards, and the descriptions they have made of the new world, yet their books are so rarely to be met with, that very few of the Spanish journalls come to our hands, but what were first translated into other modern languages, as this, of two severall hurricanes at the island of Hispaniola: I made diligent enquiry after Gonzalo D'Oviedo, which is a book fit to be consulted upon this occasion; which I at last found in the University library done into Italian by Gio: Battista Ramusio, with several other Portugal and Spanish journals, where I met with the following descriptions of these hurricanes in one of the Caribbe islands.

"Hurricane in the language of this island signifies properly a most excessive tempestuous storme: and in effect is nothing else, but an extraordinary great wind, and raine together.

"It happened on Wednesday the third of August, in the year 1508, (Don Francisco Nicola D' Ovando the great commendator, being governour of this island) very near midday, that there rose upon a suddain a very great wind, accompanied with rain; which, in one and the same instant, was taken notice of in many remote parts of the island; and hence, by reason of it, great losses immediately follow'd in the fields; and the country farmes remained utterly wasted and destroyed: in this city of St. Domenico it bore to the ground all the houses of straw which were in it; and some too which were built with stone were extreamly batter'd and endanger'd: nay in that country which they call'd the happy adventure, all the houses were levelled to the earth; from which accident the name of the misadventure was afterward given to it, by reason of the great numbers which there underwent a total ruine: and that which was worst, and most sensible afflictive, that in the haven of this city were destroyed more than twenty ships, pinnaces, and other vessels: the wind was north, and so strong that the mariners perceiving the suddain encrease, threw themselves into their boats, and went to cast more anchors into the sea, and to fasten and secure their vessels with stronger cables; but to such a height grew the tempest, that all provision which was made to resist it, proved useless, and ineffectuall, because every thing broke, and the wind with an incredible force drove all the vessels, both small and great, down the river, out of the port, and carry'd them into the sea, some it stranded across the shoars of that river; others were sunk and never appeared more: but afterward, the wind changing upon a suddain to the contrary point, the south wind, with no lesse violence and fury, rose to an equall height, with the former north wind; whence, beyond all apprehension, some vessels were furiously driven back again into the port, and as the north wind had forced them to sea, so this opposite drove them back again into the harbour against the stream of the river. These very vessels we afterward observed to move down the stream, without perceiving any more of them then the cages or tops of their masts, for their hulks sunk totally under water. Many men were drown'd in this calamity, and the extremity of the tempest lasted

twenty four hours, even till next day noon; but ceas'd not so, in an instant, as it began: such an one it was, that many who saw it, and are perhaps yet living in this city, do affirm, that it was the most affrightfull and horrid spectacle, that could possibly be look'd upon with human eyes: and they report the appearance to be such, that it seem'd as if hell had stood open, and the infernall spirits carried those vessels from one place to an other; the wind hurried away in a body together many men, divers bow-shoots through the streets, and fields, without any possibility to stop or help themselves; many of whose heads were miserably shatter'd and broken: it drew by force some stones out of the mid'st of the walls, it threw down and broke in pieces many thick woods turning them upside down; hurling the trees of others at a very great distance. In short, the losse occasioned by this tempest, was exceeding great and generall to the whole island. The Indians say, that at other times here have us'd to be hurricanes, but not any like this had ever yet happen'd; neither in theirs, nor their predecessors' times; so that by this horrible tempest many were slain, and their estates and goods ruin'd; both in this city, and in the greater part of this island, but chiefly their farmes in the country.

"The Admirall Don Diego Colombo came the year following, being 1509 into this city, the tenth of July, and on the twenty-ninth of the same month, there arose another hurricane, greater then that already mention'd, but yet it made not so much spoyl among the houses, though in the fields a much greater. There have been others since, but never such, nor so stupendious as these. 'Tis believ'd and asserted by the Catholicks, that since the most holy sacrament of the altar has been plac'd in the churches of this city, and in the other regions of this island, these hurricanes have ceased. Certainly, whosoever hath passed by some woods of great and thick standing trees, where the hurricanes have arriv'd, has seen things of much wonder and amazement. For one might then behold trees, innumerable, and those extream bigg, drawn up with their roots, which were as long as was the tree even to his highest top-branch, others cleft asunder in many pieces; and in such a manner placed one upon another, that it appear'd exactly a diabolicall operation. I myself have seen in some places the whole territorie covered with eradicated, and cleft trees; and plac'd one upon another with wonderfull entanglings. And because we were to goe from thence, and passe through those very countrys and woods, thus rent asunder and intricated, having no other way so safe to our design, the great rivers interposing us, together with the sharp craggs of mountains, the deep vallies, and the thorny, and close woods, and many other difficulties; beside the suspicion of the enemy, and the ignorance of the country, so that it was very observable to see how our men went clambring, eight or ten yards one higher then the other, from tree to tree, and from bough to bough, toyling themselves in the prosecution of their way; whence going on through all their molestations, they felt the most extream torture and anguish, with hope to attain the safest way, though by a passage so infinitely obstructed; and continually some of our companions came out from the trees thus plagued, crushed, and their cloaths wholly torn off, and the skin flead off from their hands; the trees were excessively bigg; and stupendious it was to see

them in this manner, and at so great a distance from the place, where they first grew, so heaped, intangled, and interwoven one within another, that, as we have said already, it appears no other then the work of the devill. I have many pregnant testimonys in the city of the two hurricanes, that I now describe, which in our times happen'd in this island, and there are yet some remains of the damage it did in my house; severall other persons throughout the island then lost most of their riches, as there are yet many more in Spain, who felt the fury of the first hurricane, to their utter ruine, and losse of their ships. In a word, such were these two tempests, that their memory will last, as long as those now living on the place, and therefore 'tis fit that some notice of them remain ever to posterity."

I have made choice of another account out of the history of the Caribbee Islands, written by an ingenious Frenchman: and I have lately met with severall other relations both of the French and English, who liv'd upon St. Christophers, miserably deploring the subversion of their houses, and the ruine of their families and estates by hurricanes; but I forbeare to insert them among the rest of my papers, because they contain no delightfull variety, being only the same tragedy acted over again; and, for the most, of the like nature with this which follows.

"Hurricanes are terrible and violent tempests, which may be term'd the true images of the last conflagration of the world: formerly they happen'd but once in 5 or 7 years; but they are now become more frequent, since the Antilles were inbabited, for there was one in 51, another in 52, two in 53, and two in 56: [Nay, in the island of Gardaloupe, lying about the 16 degree of N. latitude, there happen'd no lesse then 3 hurricanes in one year.] The manner of them is thus.

"Ordinarily the sea becomes calme on a suddain, and smooth as glasse: then presently after, the air is darkened, and fill'd with dense and gloomy clouds; after which, it's all as it were on fire, and opens on every side with dreadfull lightnings, that last a considerable time: after which follow wonderfull claps of thunder, that seem as if the heaven was rent asunder. The earth trembles in many places, and the wind blows with so great impetuosity, that it roots up the tallest and greatest trees, which grow in the woods; beats down almost all the houses, and tears up the vegetables; destroying every thing that grows upon the earth; and very often compels men, whilst this dreadfull tempest lasts, to catch hold of the trunks of trees, to secure themselves from being carried away by the winds; some lye in the caves of the rocks, or retire into the huts of the Negroes and Caribbians, which are built exceeding low on purpose to elude the shocks of these tempests. But that which is most dangerous of all, and which causes the greatest mischief, is, that in four and twenty hours, and sometimes in lesse space, it makes the whole circle of the compass; leaving neither road nor haven secure from it's raging forces; so that all the ships that are at that time on the coast, do perish most miserably.

"At the island of St. Christophers, severall ships in the harbour, being laden with tobacco, were all cast away by an hurricane; and afterwards the tobacco poyson'd most of their fish on the coasts.

"When these storms are over, a man may behold the saddest specta-

cles that can be imagin'd. There may be seen pieces of mountains shaken by the earthquakes, and forrests overturn'd; houses beaten down by the violence of the winds; abundance of poore families undone by the loss of their goods, and the merchandize in their cottages; of which they can save but very little. There one may see the poor sea men drown'd, and rowling in the waves, with many brave ships broken in pieces, and batter'd against the rocks. 'Tis a thing so wofull and deplorable, that should this disorder happen often, I know not who could have the heart or confidence to go to the Indies."

There came to my hands, the last winter, a more accurate account of an hurricane, which lately encountred one of his majesties frigates in the way to the West Indies; and after frequent converse with the ingenious captain at his return, he was pleas'd understanding my design, to send me a very handsome account of the particulars in a letter: the contents were these.

"Sir,—In answer to your request, concerning the hurricane, I can say little of it's effects more, then what concerns our particular damage and terrour. It happen'd upon the 18th of August last, 16 hours after the new moon, in the 14th degree of north latitude, about 90 leagues from Barbados; it succeeded a storme of 48 hours continuance at north-east; an unusuall way of it's appearing, for it commonly follows a calme: it's presage being a shifting of the wind about the compasse, with the appearance of a troubled skye, the only advantage we have to prepare for it's reception. The fury of it began about 10 at night, and continu'd till 12 the next day. It's observ'd that the hurricanes of the new moon begin at night, and those at the full in the day; as was noted two years since, when the Lord Willoughby perish't with 8 ships, and near a 1000 persons.

"During it's 14 hours fury with us, it shifted 14 points, from the N.E. to the S.S.W., keeping a method of changing one point an hour; and then shifted backward, and in it's retreat still abated, untill it returned to the originall point, where it wholly ceased.

"In the height of it, we had some hail, the stones whereof were very great, which seemed to be thrown upon us for the space of the twentieth part of a minute, and then an intermission of 5 or 6 minutes, before any more came. The sea in the night seem'd as a reall fire, and I believe we might have distinctly perceiv'd any object at a great distance: in the day time we seem'd rather to sayl in the air then water, the wind forcing the sea so high that we could scarce make a distinction of either elements.

"The terrour of it was such, that I thought it the emblem of hell, and the last dissolution of all things; especially the first two hours, which were attended with so much thunder and lightning, so astonishing, as if we had been wrapt up into the clouds, or the whole air set on fire.

"The strength of the wind was so great, that it blew a boat of 18 foot long (fast'ned to 4 ring-bolts, and each bolt through a ring of the ship) clear off the deck: it blew away a piece of timber of great substance and weight, called the crosse-piece of the bits, to which we fasten our cabels: it tore off the sayles from the yards, though fast furled; the yards from the masts, and the upper masts from the lower: it blew

away four men of five, who were upon the fore-yard, three of which, by a strange Providence, were thrown in again upon the deck by the sea, and saved. The last remain of its fury was a weighty grinding-stone, which it left fastned between two timber heads, but it blew away the trough from under it. I had severall accounts from particular friends how terrible it was in other places, but to me it seem'd beyond all expression.

"These hurricanes are most frequent between the æquinoctiall, and the tropique of cancer: they more rarely happen between the line and the tropique of capricorn. But that which is the greatest wonder to me, is, that they should be so terrible among the Caribbe Islands, that, in some of them, they have neither left house, tree, nor plant in the ground, beginning at St. John De Porto Rico, and so running eastward: but the islands of Hispaniola, Cuba, and Jamaica, are never troubled with them, though within few leagues of the rest.

"There are some old Indians that have given notice of them 3 or 4 days before their coming: by what rules, I was never curious to understand; it being enough for us to study how to defend our selves and ships from them, rather then by any nice enquiries to search into their cause. Only thus much I observ'd, that they have an influence upon the sea, as well as the moon, both upon them and it; for I found by observation of the sun and starrs, that there was a current tending so violently northwards, that in 24 hours it would force us as many leagues from our easterly course; which did so confound us, having neither card nor compasse left to steer by, which with severall other goods, were swept away in a breach which the sea made into our ship, that I think it was as great a difficulty for me to find out Barbados, this place being nearest for our relief, as Columbus, who first discover'd those countries. Sir, I have been as modest as I could in giving you this relation, because I know many who are unacquainted with the violence of these tempests, will be incredulous; but I should be sorry, that all who will not believe this account, should have the same confirmation which I had. If there be any thing in it worth your notice, it may engage me hereafter to recollect some more particulars; in all things I shall endeavour to assure you that I am, &c."

Were it not sufficient, that a relation much of this nature was presented to his Majesty; and that the ship, after it return'd, lay at anchor a long time in the river of Thames; not without signal marks of the hurricane, I might have been scrupulous enough, to have desir'd the subscriptions of severall others, who could attest the truth of this narrative. I should only wish that some of those reflexions, which the ingenious captain is pleas'd to make upon this occasion, were enquir'd into, by those who live upon any of the Caribbee Islands: whether the hurricanes of the new moon begin constantly by night, and those at the full in the day? which would be remarkable, though I never remember to have met with the like observation in any other description. However, we can by no means exclude the operations of this influentiall planet; which has a very great dominion over both the winds and tydes; whether from it's pressure, or by what means soever it produces these effects: some have thought that the moon has an atmosphere of its own, and sends out effluviums to the neighbouring

world; and therefore acts more powerfully in the perigæum, when it approaches nearest the earth.

That wonderfull light which appear'd during this hurricane, might be from the collision of the lucid salts, with which the sea-water is so deeply impregnated: light happily being nothing else but the motion of some subtil matter.

We have seldome heard of any hurricanes but in the months of July, August, and September, and the seamen hitherto have never been apprehensive of them at other times; yet the last year there happen'd one in October which was very unusual.

They are now become the subjects of our Gazets; and scarce a year passes but we have accounts from the American plantations, of the damages they have sustain'd by hurricanes. Not to mention the tragedy of my Lord Willoughby and his followers, we had severall of a fresher date: no less then five or six have happen'd within these three years.

The last advice was from Antego, the second of September; the most part of the new town of St. Johns was quite thrown down to the ground. Where diverse of our merchant ships richly laden, some from New England, and one Irish ship that came thither for shelter, perish't in the harbour; together with many more vessels that were cast away at Meavis, and other parts of the West Indies.

I also take notice of another passage, where he says Hispaniola has been exempt from hurricanes, when it's certain that at the first descent of the Spaniards upon this island, it was most obnoxious to them of all others, whereupon they afterwards took occasion to boast, that, since the holy sacrament, was expos'd in their churches, they wholly ceas'd.

We may likewise observe, that the seamen took the first presage of the hurricane, from the whifling of the wind about the compasse, which is ominous in those climates, where it hangs generally between the easterly points. They vary'd, no more then 14 points in this formidable hurricane, though it has been a vulgar errour that they shift through all quarters of the compasse. Not only the winds, but the currents are observ'd to change, and run round in eddys before the beginning of the tempest.

This hurricane was preceded by a storme at north-east, though it's universally agreed on, in the relations both of the English, French, and Spaniards, that they commonly succeed a calme: so that you shall have the sea, for some time placid, and even, and not so much as the least wrinkle to appear on the surface of the water. It's likewise esteem'd a sure prognostique, that the birds (led by an instinct of nature) come down before hand in flocks from the mountains to secure themselves in the vallies against the injurie of the weather.

I believe, there might be excellent use made of the barometer for predicting of hurricanes, and other tempests, especially at sea; since I am credibly informed, that a person of quality, who lives by the sea-side, (though happily there may not be so considerable alterations in the gravity of the atmosphere far off at land) can by the barometer almost infallibly foretell any great tempest for severall hours before it begins.

I find no mention of salt rains in any of the English narratives; but

the most Inquisitive of the French and Dutch have reckon'd it as a very infallible presage, 'that the rain, which falls a little before, is bitter, and salt as the sea-water: which happily may argue a collection of some saline and sulphureous spirits, in the regions of the air, that encountring each other, may by their violent displosion be principally concern'd in the production of hurricanes. My Lord Bacon just hints in his chapter [De imitamentis ventorum] that there are certain flatulent, and expansive spirits contained in some minerals, and then instances particularly in niter, that not only imitate, but exceede the force of most whirlwinds. But certainly nitre alone can effect no such wonders, though by the addition of sulphur it is soon inflamed, and capable of the most vehement agitation, for the sulphureous particles, being extreamly subtil, loose the textures of the salts, and render them of the most expansive nature; wherefore in the composition of gunpowder, the ignition is quicker, and the displosion more impetuous, accordingly, as the nitrous corpuscles have greater or lesse allays of sulphur or coale, which they use in a different proportion for fowling-pieces and canon-powder.

Thus from the expansion of these raging minerals, which after their rarefaction require an immense space, and are exploded with the greatest violence, we can only expect such wonderfull effects as those of hurricanes. For beside the subverting of forrests, and towns, they have in some of the French plantations, remov'd the rocks from the tops of mountains, and cast them into the vallies, as if they had been blown up with gunpowder; so that, since we have no better way to interpret nature, then from the sensible discoveries of art, we may with the greatest probability derive these tempests from some such nitro-sulphureous exhalations, then which, nothing in the minerall world, can be of greater force to occasion lightning and whirlwinds. I shall not undertake to determine positively the mode, only I thought good to insinuate thus much, that these miraculous emotions of the atmosphere can hardly be supposed from the agitation of common vapours or air; for so generall a conspiracy of the winds, and as it were a kind of paroxysme which so much disorders the frame of nature, must necessarily proceed from some very extraordinary cause.

VOLCANOES OF THE AZORES.

IN our September number (p. 631,) appeared an account of a severe earthquake which took place in June last, at the island of Terceira, destroying the town of Praya, at its eastern end, and otherwise affecting the whole island, besides being supposed to have left a dangerous shoal at sea.

Considering the importance of the subject, besides its interesting nature, we have selected from a valuable work,* a brief history of the various volcanic eruptions of the Azores from their first discovery. To this we have added an extract from the Philosophical Transactions,

* "Descripcion Phisique," &c., par Leopold De Buck.

containing an account by an English merchant-captain of an island thrown up from the sea in 1720, on which occasion the town of Angra suffered in the same manner as Praya in June last. The position given of this accords so closely with the assigned place of the principal explosion in June last, off the east end of Terceira, that there can be no doubt in concluding that they are one and the same volcano. We have also added a sketch of this island, and Capt. Tillard's account of the Sabrina, forming as it does a part of the subject, although in an entirely different position. We understand that the great importance to navigation of ascertaining the effects of the former at sea, off Terceira, will lead to a future investigation of its neighbourhood by that intelligent officer Capt. Vidal, R.N., commanding H.M.S. Styx.

"The peak of Pico is so high, that the other islands are low in comparison with it. Its height has never been perfectly determined. Fleurieu from approximate data and uncertain distance from which it may be seen at sea, estimates its height as 6,588 feet. Ferrer calls it 7,328 feet, and Tofino 7,561 feet. Fleurieu even adds that according to the height he assigns to this mountain, it can be seen at the distance of twenty-nine miles. Now it is certain that it may be seen from thirty-six to thirty-seven miles, which according to Humboldt will give it a height of 8,586 feet. The *Corriere de las Antillas* gives its height 7,275 feet. Fleurieu* gives a rough view of this peak, which he represents in the form of a dome, which appearance it has in all directions. But it is only in the account of John Webster on the Azores, that any documents are found on the volcano in the narrative of an ascent of the peak by G. Herriott of Fayal, which bears no date of when it was performed.

"After having ascended for six hours, Herriott arrived at the brink of the oldest crater, which appeared about a mile in circumference; the northern and eastern sides of it were destroyed, and those on the west and south only remained. In the middle of it was a steep cone 300 feet high, very difficult to climb, the sides of which presented many fissures from which vapour escaped. It was formed entirely of solid scales of lava, as hard as iron, and which originally were in a fluid state. The extremely sharp peak of the volcanic cone was only seven paces long, and five broad; the crater open on the northern side, and a little below the crest of the mountain was twenty paces in diameter, and continually emitted masses of vapour, although it was heaped up with solid matters and calcined rocks. On the eastern side, the peak was connected with a sharp ridge on which were a great number of craters of ancient volcanoes, but which now emitted no vapours. It was on this side that the great eruption happened in 1718, which destroyed the greatest part of the vineyards, situated at the foot of the volcano. The isle of Pico is elongated from south-east to north-west, in the same manner as all the other islands, St. George, St. Michael, and Terceira; and it is remarkable that all these islands, even to Flores and Corvo, lie exactly in the same direction. One cannot help observing in this arrangement a volcanic band similar to that which traverses Iceland; a

* One of the best representations we have seen of it is on a chart of the Azores published by Laurie, in Fleet Street.—Ed. N.M.

kind of immense ridge abounding in rocks, partly hidden in the depths of the sea.

"The Azores appear to be formed almost of trachytic masses; basalt is nowhere found among them except in the little islands of Corvo and Flores, which are yet imperfectly known. This kind of rock is described by Webster, and in the accounts which have been lately published on the eruptions of the islands of St. George. Mr. Dabney, American Consul at Fayal, has addressed a letter to the United States, in which he gives a description of volcanic phenomena of the Island of St. George. He says, "On the 1st of May 1808, the ground, three leagues to the north-east of Velhas in the north-western part of the island opposite the isle of Pico, was rent with a noise similar to the discharge of cannon, and formed in the middle of cultivated fields an immense crater of twenty-four acres in extent. In the space of two days this crater threw up such a quantity of scoria and pumice stones that the ground was covered with them from one to four feet in depth in an extent of three leagues long, and one broad. On the 2nd of May, another opening formed itself a league to the north of the former, and at a distance of two leagues from Velhas. This crater might be approached and was found to be formed of a great quantity of small fissures, often six feet wide, traversing the ground in all directions. The crater was about 150 feet in circumference. On the 5th of May, and following days, twelve or thirteen small craters were also formed in the same place from which a great quantity of lava flowed towards Velhas. It is very likely that this mass was formed of obsidian, for it was preceded by an eruption of pumice stones, and these two matters evidently indicate the presence of trachyte in this island.

"On the 11th of May the lava ceased to flow, and then a fresh and violent eruption took place from the first crater, and was seen at Fayal until the 5th of June emitting a burning current, which descended the sides of the crater and fell into the sea, after which it became tranquil. This immense crater is four English miles from the shore, and is nearly 3,500 feet above the level of the sea. Before its formation, no part of the island was so high as that."

"Fayal appears to be nothing more than a part of Pico, for the general direction of these islands and their shores perfectly corresponds. The island appears to have a crater in its centre. Webster says that the highest part of it is 3,000 feet, and that the sides of the mountain have a gentle acclivity up to the *caldera*, that it is five miles in circumference, with four to five feet of water in it. The Swedish Lieutenant Hebbe, considers it two leagues wide. It appears doubtful that this *caldera* was formed, as Adanson says in the last eruption of Fayal, in 1672. Labat also says, that in this year the eastern side of the mountain opened, and a stream of lava flowed from it, and destroyed 200 acres of the best land. Notwithstanding the numerous observations made on this island, the component parts of the rock of which it is formed are unknown.

"The island of St. Michael is notorious for the various islets which have attempted to raise themselves in its neighbourhood, on the side opposite to Terceira or St. George. On the 11th of June, 1638, an island appeared two leagues and a half in extent, and more than 360

feet in height. On the 1st of December, 1719, another was formed, which disappeared in 1723, this was twelve miles and a half from the land,—the same phenomenon appeared in 1811. In this year, the bottom of the sea was raised in two different places, which were little known. Previously in the month of August, 1810, the whole island of St. Michael, according to Webster, had been shaken by an earthquake. On the 31st of January, 1811, a violent shock, and a strong sulphureous smell, announced that a submarine explosion had taken place at the western extremity of the island, and at two miles distance from the shore, opposite the town of Ginetas, large volumes of smoke and cinders and water were thrown up from the sea, and formed a grand column several hundred feet high. The stones which accompanied the eruption, were thrown a considerable height nearly 2,000 feet. When first thrown up from the sea they appeared black, but scarcely had the mass of smoke passed away, than they became red and burning, evidently the consequence of a combustion in the atmosphere of the metallic matter of which they were probably formed. The eruption continued for eight days; when it ceased, a shoal was formed in the sea, on which the surf broke in a place where there was before from sixty to eighty fathoms water.

"On the 13th of June, a second eruption took place a mile and a half from the first, and a mile from the shore opposite the peak of Camarinhas. The result of this eruption was the island of Sabrina, about a mile in circumference, and 300 feet high. This island had a well formed crater, open to the south-west, and from which a current of hot water ran towards the sea. It was terminated by a ridge as other craters generally are. The opening was thirty feet wide. Captain Tillard who visited the crater on the 4th of July, and gave it the name of his vessel, has sketched it as seen from the shore. The plan and view are published on one sheet by Boydell, of London, May, 1812. In a note accompanying the plate, the author adds, that he learnt from the English consul, Mr. Read, that towards the month of October, the island commenced sinking gradually, and about the end of February, 1812, nothing more than vapour was occasionally seen issuing from that part of the sea where it had been formed.

"The remarkable island of Porto de Ilheo, near Villa Franca, is quite analogous to that of Sabrina, and has certainly the same origin. In the middle of this island is a crater, into which vessels may enter by an opening similar to those which especially characterize this kind of crater. Views are given of this island in the history of the Azores, 1813, (page 80-82, Thomas Ashe,) and on the excellent chart of St. Michael, by Mr. Consul Read, published in London, in 1808. Webster says, (page 186,) that the brink of the crater is 400 feet high, and is composed of a sandy substance, in which fragments of lava, scoria, and pumice stones are found. No part of the sides of the crater is formed of solid rock.

"Notwithstanding that the numerous hot springs of the island of St. Michael, are unequivocal proofs of constant volcanic action, this island has no volcano, but three immense craters may be distinctly recognized in its whole extent. That in the north-west part of the island is the largest. It is 2,000 feet high, and its circumference about six leagues

in extent. It appears quite analogous to the lake of Laach, near Coblentz. The interior of the crater is occupied by two lakes, the *Lagoa Grande* and the *Lagoa Azul*, which communicate with each other. The sides of the crater are composed of loose pumice stones, below which is the sandy substance found at the sea side. At the bottom only trachytic rocks are found, containing vitreous feldspar, and long chrystals of hornblende.

"The second crater is the *Lagoa de Pao*, situated in the middle of the island, and in a large mass of pumice stones. At the foot of the crater, towards that part of the coast where the town of Agoa de Pao is situated, a rock *en place* is found, in which augite* predominates, but masses of trachytic conglomerate soon appear in the deep gorges on the sides of the mountain. In the midst of these conglomerates, large blocks about twice the size of the head are found, formed by a mixture of large chrystals of feldspar and hornblende, and a little oxydized magnetic iron, similar to that of granite, and probably the same as the rock found at Santa Maria de Bethencouria, in the island of Fuertaventura, or in the *Caldera de Palma*. These blocks are nowhere found *en place*. The greatest part of the mountain round the *Caldera* is formed of pumice stones, containing chrystals of feldspar. A rock named the mountain of Agoa de Pao, according to barometric observations, is 3,463 Paris feet above the level of the sea.

"The third crater, called Alagoa das Furnas, in the middle of which are hot water springs, is not so high as that of Alagoa Grande. It is also surrounded by a considerable mass of loose pumice stones, which appear to form throughout a great extent, the principal mass of the whole island in which basaltic rocks are almost entirely wanting. On the northern coast only, and a little to the north of Punta del Ajuda, at low water a rock appears, divided into ill-formed pentagonal columns, the principal mass of which is black, like the basalt of Saxony.

"The whole, is probably, a great ridge in which trachytic rocks have been changed into obsidian or pumice stones, the divisions of which are formed by basaltic rocks concealed by the sea. From Alagoa das Furnas the mountains of pumice stone continue higher, forming a continual range as far as the Pico de Vara, the height of which is estimated above the sea 5,000 feet. This is the only summit in the island where snow is found.

"The description of these islands by Capt. Boyd, contains many important facts respecting their physical formation. It cannot be doubted that this Archipelago, which extends from south-east to north-west

* The following note on augite is from an elaborate article on the subject in the Penny Cyclopædia.

"Augite.—The minerals to which this name has been applied, present us with the most interesting and at the same time most difficult investigations that can fall under the notice of the mineralogist and chemists, and have frequently occupied the attention of the most eminent men in both sciences. Nor are these bodies unworthy of such attention. For not only would a thorough knowledge of their constitution, and the relation they bear to other minerals, particularly to the genus hornblende, tend much to the perfection of the mineralogical system, but owing to their frequent occurrence in nature, and from their forming one of the principal ingredients in many porphyritic and trap rocks, such as the syenite diallage and chorl rocks, green stone, &c.; they form a class of bodies of the highest importance to the geologist."

must be considered as an immense ridge on which craters are thrown up so as to form islands, for Capt. Boyd even gives us the boundaries of it. The island of St. Mary, the only one not situated in the general direction of the others is not volcanic: no part of its surface appears to have suffered from heat or eruption subsequent to its formation. The whole island is composed of beds of schiste in a position nearly perpendicular, and which form steep precipices on the coast. In the north-west part of the island in a place inaccessible, an immense bone of a large animal may be seen projecting from the schiste rocks. It is covered with a calcareous formation full of marine remains, and from which lime is obtained apparantly of recent formation.

"Few islands display such a variety of volcanic phenomena as the islands of St. Michael, although a real central volcano is never found there in action. After Gonzalo Velho Cabral had succeeded in establishing a colony in the island of St. Mary discovered in 1431, he landed in 1444, on the north-west coast of St. Michael, and the extensive plains which he saw appeared to him so capable of being highly cultivated that he returned immediately to St. Mary to make his preparations for colonizing this newly discovered country. But when he went there the following year with everything necessary for the establishment of his colony, what was his surprise when in the place of the plains he found an enormous mountain, which had been elevated on them, with an immense crater. Torrents of water, mud, stones, scoria, and cinders covered the sides, and spread over the neighbouring parts. This mountain with its crater is called the Alagoa de las siete Cidades, on which are two lakes. The circumference of the mountain is fifteen miles, and its height above the level of the sea about 2,000 feet. From that time no eruption has taken place from the crater, or from the sides of the mountain. Here then is a crater of the most decided character. If it had forced its way through the sea it would have formed an island as large as Graciosa, and little less than Fayal. This mountain then is the result of a great volcanic action which has been only once exerted, but which has established no continuous communication between its internal fires and the atmosphere.

"Capt. Boyd gives a list of the eruptions of St. Michael which deserves attention; it may be seen at once that the orifices of these eruptions are continually changing, and do not shew any tendency to a common crater.

"After the elevation of Alagoa de las siete Cidades, the island remained tranquil. In 1522 an eruption hurled into the air the two hills, Sorical and Rubacal, and covered the town of Villa Franca, which was entirely destroyed. Four thousand inhabitants lost their lives on this occasion.

"In 1563 there was an eruption of the Pico Sapadeiro. A large current of lava ran into the sea on its northern side near Rebeira Secca.

"In 1638, a large island appeared fifteen miles to the west of St. Michael, it remained quiet for several years, and then disappeared suddenly, leaving in its place a fathomless ocean.

"In 1652 the hills of Pico do Foro, Romos, and Pico do Paya, to the north-east of Rosto de Cao, near Punta Delgada, threw up an immense quantity of stones and cinders, spreading destruction over the surrounding country.

"In 1691, after some very violent earthquakes several small islets appeared not far from the coast.

"In 1719, a new island appeared fifteen leagues west, its diameter was nine miles, and it disappeared in 1723, leaving seventy fathoms water.

"The great earthquake of Lisbon in 1755 was felt at St. Michael by severe shocks without an eruption.

"On the 11th of August, 1810, violent motions of the earth were felt. In the northern part of the island fire burst from the fissures, and there was an eruption of the peak of Genates in the south-west part of it.

"On the 13th of June, 1811, the island of Sabrina appeared and disappeared in the month of October. From that year till 1835, the island remained undisturbed.

"The island of Terceira has a crater, six miles north-west of the town of Angra. Large fissures on the sides of the mountain emit vapour in abundance. These fissures were formed after the earthquake of 1614, by which the town of Praya was destroyed. From that time these phenomena have ceased on the island. The crater is called Furnas d'Euxofres; it appears to be entirely surrounded by hills of pumice stones.

"Captain Boyd states, that these stones frequently fall and throw down trees, which being buried beneath them, make it appear that they were surrounded by the eruption of these stones. A single eruption which took place in 1761, poured forth lava from the peak of Bagacina, which after running a league in extent fell into the sea.

"The island of St. George, so close to the central volcano of Pico, is also the most agitated. An eruption in 1580, a league and a half from the port of Velhas, lasted several days, and numerous currents of lava ran into the sea, where it formed an indented and steep coast. In 1691, eruptions appeared in the sea. Many small islets appeared near the coast, but disappeared soon after. This phenomenon occurred again in 1720, the year in which the island* appeared at the south-west extreme of St. Michael, and about a mile from the shore; and in 1757, eighteen small islets appeared about a thousand feet from the coast, which after a few years disappeared. In May, 1808, the great eruption took place described by Mr. Dabney.

"The eruptions of Pico itself confined themselves in 1572 to the eastern side; a stream of lava escaped from the mountain and fell into the sea, six miles distant near the town of Prainha. In the same century, two other eruptions were accompanied by currents of lava, one ran to the northward near Bardeira, the other to the southward, not far from St. Mateo. The last eruption of 1718, took place on the western side.

"The view of the peak, which Captain Boyd gives by Admiral Sartorius, displays as much taste as faithfulness of representation. Captain Boyd states positively, that the current of lava that ran over the island of Fayal, in 1672, escaped from the sides of the peak, not far from the town of Praya, and that it did not descend from the sides of the crater, in the middle of the island where there are no appearances of lava."

* This island, which appeared in 1720, is either the same, or another which is described farther on in the Philosophical Transactions for that year. If the last, it is much nearer to the island of Terceira than that of St. Michael, as the latitude and longitude assigned to it clearly shew.—Ed. N.M.

PART OF A LETTER *from Thos. Forster, Esq., F.R.S., to Mr. Machin, Prof. Astron. Gresham, Sec. R.S., concerning a New Island, lately raised out of the sea near Terceira.*

[From the Philosophical Transactions.]

London, May 12th, 1722.

"I have sent you a draft of the several bearings, and the captain's account of an island lately broke out of the sea, bearing south-east from Terceira, distance seventeen leagues.

"John Robinson being master of a small pink-snow, called the Richard and Elizabeth from Piscataqua in New England, arrived at Terceira, December 10th, 1720, near which island he saw a fire break out of the sea. The Governor hired him to go with the said vessel to view it, and sent on board sixteen sailors and two priests. On Sunday the 18th of December, we got under sail, at twelve o'clock at night, and stood from Angras south-east. The next day at two o'clock in the afternoon, we made an island all fire and smoke; we continued our course till the ashes fell on our deck like hail or snow all night. We bore from it, the smoke and fire roared like thunder or great guns. At break of day we stood towards it again: at twelve o'clock we had a good observation two leagues south from it. We sailed round it, and so near, that the fire and matter it threw out had like to have done us damage: in which consternation we all betook ourselves to prayers, being in danger of driving ashore; then a small gale at south-east sprung up and carried us clear to our great joy. The breeze was accompanied with a small shower of rain, which caused a great dust to fall on our deck: with the said breeze we stood away for Terceira. The Governor informed us that the fire broke out the 20th of November, 1720, in the night, and that the prodigious noise it made caused an earthquake, which shattered down many houses in the town of Angra, and places adjacent, to the great terror of the inhabitants. We took several drafts of the island at several bearings in our sailing round, of which the enclosed is a copy. Prodigious quantities of pumice stone, and half broiled fish were found floating on the sea, for many leagues round the island, and abundance of sea birds hovering about it. So far the captain.

"An acquaintance of mine informed me, that in his passage from Cadiz to London, the latter end of April was twelve months, he observed the sea from Cape Finister, almost to the chops of the Channel, to be covered with pumice stones, some of which he gave me.

South, distant two miles.

"This island is almost round, and supposed to be about two leagues in diameter. By good observation its latitude is 38° 29′; its longitude 26° 33′. The bearing and making it in sailing round is expressed in the drafts* above."

[The following is Captain Tillard's account of the small island on the south-west coast of St. Michael, within a mile of the shore, and which he named after his own vessel.]

The eruption producing an island broke out in about thirty fathoms water on the 14th of June, 1811, having been previously for two or three days preceded by repeated shocks of earthquakes, sensibly felt in the capital of the island of St. Michael, and throwing down several cottages and parts of the cliff next the south-west side near its vicinity.

The first burst through the water was in three or four places about a ship's length apart, which occasionally subsided; on the 15th, the day I arrived off the island, the whole of these had become united, forming an immense column of white smoke, and occasionally throwing up black ashes from 50 to 100 feet high. On the 18th, having proceeded over land to within one mile of it, in company with the consul; shortly after my arrival, for the first time a small peak was discovered above the surface of the water, which at every subsequent eruption increased, and this so rapidly, that in three hours, the time we remained on the cliff, it had formed itself a complete circle of cinders above water, nearly twenty feet high, on the side towards the sea; but which always broke in on the side nearest the land, after a violent explosion, when the water rushed into the crater with the greatest impetuosity.

The cliff we were standing upon was perpendicular, and about the height of the North Foreland; the volcano a short mile from the shore, ascertained by bearings from the extremities of a base of 800 feet, and since more accurately by cross bearings in the ship.

The eruptions were now so violent as to throw up the ashes as much above the level of our eye as the volcano was below it, they were thrown up in a spiral form, the first succeeded rapidly by a second, third, and fourth, each one overtopping the other, so as to form an appearance like a group of magnificent pines; and which, as they attained their utmost altitude broke into smoke in the most fanciful forms imaginable, the most beautiful of which bore an appearance to innumerable plumes of ostrich feathers surmounting each other.

The cloud of smoke as it expanded itself in a horizontal direction to leeward, attracting by its heat the water up into it by a quantity of water spouts, formed another extraordinary feature. These eruptions were accompanied by the most vivid flashes of lightning, with a noise like the continued firing of cannon and musketry, and slight shocks like earthquakes, though one was strong enough to loosen the edge of the cliff about fifty yards from where we were standing, and which fell with an amazing crash.

Having on the succeeding day proceeded to sea, and again making

* Several of these are given, but we have considered one sufficient here.

the island on the 4th of July, I found the volcano perfectly quiet, and the wind obliging me to pass pretty near it, I went, accompanied by some of the officers, to explore it more narrowly, and on our approach, from its appearance was induced to land. The form of the island is nearly circular, about a mile in circumference at its base, and its altitude about 300 feet.

On the side facing the land is an entrance into the crater nearly upon a level with the sea, and is about eighty or ninety feet diameter, from which there is a small stream running into the sea, about six yards across, and close to the waters' edge was so hot, as only to admit the hand to be dipt into it and taken instantly out again. I should conjecture that the crater is filled from the sea at high-water.

About two boats' lengths from the beach we had seven fathoms water, and twenty-five fathoms about half a cable off.

J. TILLARD.

ON THE LONGITUDES OF THE PRINCIPAL MARITIME POINTS OF THE GLOBE.

By Lieut. Raper, R.N., Sec. R.A.S.

(Continued from p. 617.)

186. MADRAS.—OBSERVATORY.

In the Philosophical Transactions for 1822, in a paper by Mr. Goldingham, will be found notices of observations made at Calcutta, Coringa, Masulipatam, Bombay, and Madras.

Mr. Goldingham obtained by Jupiter's Satellites, 5h. 21m. 5s.; by these and other observations, he finally adopted 5h. 21m. 9·4s., or 80° 17′ 21″. The results of 800 lunar observations, made between 1787 and 1792, gave 80° 20′ 16″ or 2′ 55″ too great, as was then considered. These observations are given in the Madras Observatory Papers, contained in three folio volumes, at the India House.

Mr. Taylor, (astronomer at Madras,) gives

Vol. I. Madras obs. 1831, by Jup. Sat.	5h.	21m.	5·4s., or	80°	16′	21″
and by moon culminating stars	5	21	3·8, or	80	15	57
Which is adopted in the Nautical Almanac.						
In Vol. II. for 1832, he gives Jup. Sat.	5h.	21m.	21·8s. or	80	20	27
and by moon culminating stars	5	20	55·6, or	80	13	54
Which however he considered as 5 or 10 seconds too small.						

In a letter from the Cape, dated January the 23rd, 1840, to Captain Beaufort, Mr. Maclear gives the results of corresponding observations of moon culminating stars at Madras and the Cape, in 1834, 1835, 1836, and 1837,* as follows.

1834-5.	D.L. *Madras* and *Cape*, by 25 obs.	4h. 6m.	57·74s.
1836	. . . 27 do.	4 6	60·19
1837	. . . 18 do.	4 6	64·59

* These observations are now printing in the 11th vol. of the Mem. of the Royal Astronomical Society.

Each result includes from two to four different stars. Only three observations of the second limb occur. The result of these 70 observations is stated to be 4h. 7m. 5·6s., with a probable error of + 0·5s. Then 4h. 7m. 5·6s. added to 1h. 13m. 55s. (see *Nautical Magazine*, vol. 1839 p. 548,) gives 5h. 20m. 56·6s.

Mr. Riddle has computed the longitude of Madras by comparison of similar observations made at Greenwich, Cambridge, and Edinburgh, in the same years. [Memoirs of the Royal Astronomical Society, vol. 11.]

By 54 corresponding observations at		Greenwich	5h.	20m.	54·9s.
" 56	"	Cambridge	5	20	53·9
" 65	"	Edinburgh	5	20	58·0

If we consider these three observatories as equally well established, and then attach to each result the weight proportioned to the number of observations, we obtain 5h. 20m. 55·7s., a result agreeing within 1s. of that depending on the Cape alone.

We shall adopt accordingly 5h. 20m. 56s., or	80°	14′	0″
St. George's church is 2′ 21″ east of the observatory, and the flag-staff on the same meridian very nearly, or	80	16	20

187. BOMBAY.

From the paper quoted above, by Mr. Goldingham, we have,

Golding. 1791, place of obs. by 160 lunars	72°	57′	37″
by 180 do.	72	57	55
Subtracting 2′ 55″ from these according to the correction applied to the lunars taken at the same time at Madras, as before-mentioned, gives	72	54	52
Jup. Sat. correcting the Tables	72	53	26
D.L. *Madras* observatory, 1ch. 16d. 7° 24′ 12″	72	53	9

The mean of all these is 72° 53′ 49″. The place of observation, (in latitude 18° 57′ 44″ by 32 mer. alts. of the sun and stars,) being 3′ 19″ N. and 13″ E. of the light-house, gives for the latter 72° 53′ 26″.

Hosb. 1803. Flag-staff S.E. bastion of Castle, 10 obs. Jup. Sat.	72	57	40
Captain B. Hall, 1814	72	50½	

Captains Elwon and Moresby in their surveys of the Red Sea, and Captain Haines in his survey of Socotra, have adopted 72° 53′ 26″.

In a note to Captain Washington, Captain D. Ross quotes the position of the observatory, connected by Lieutenant Shortreed with the general triangulation of India, in 72° 51′ 15·6″, as depending on Madras in 80° 16′ 30″ To this he states 1′ 18·6″ is to be added, for the position of the church, which is the point of departure of the marine surveys, and which would accordingly be thus placed 72° 52′ 34·2″.

According to this statement, the diff. long. between the church at Bombay, and the observatory at Madras is 7° 23′ 56″, which subtracted from 80° 14′ 0″ our adopted longitude, leaves for the longitude of the church 72° 50′ 4″.

Captain D. Ross in the note just mentioned quotes also other meridian distances from Madras, which we shall annex, viz.

Hosb. D.L. *Madras* fl. st.	7° 21′ 45″
Heyw. D.L. *do.*	7 21 0

Horsburgh seems to quote this difference as 7° 23′ 18″, vol. 2, (1836,) page 398.

McIntosh. D.L. *do.* 7° 25′ 0″
Goldingh. D.L. *do.* 7 25 42

The mean of these is 7° 24′ 7″, which subtracted from 80° 16′ 20″ gives 72° 52′ 13″, agreeing closely with the position above discussed as regards the *observatory*, but not the *flag-staff*.

In a letter at the India House, of May, 1840, Col. Everest gives the long. of the light-house 72° 51′ 11·7″; stating, however, that the computations had not undergone revision, and that the result depended partly on the measurement of the Beda base which awaited verification. Since the receipt of that letter, Mr. Walker, (the hydrographer to the H.E.I. Company,) acquaints me that the Beda base has been verified. If, therefore, we apply the diff. long. between the above and Madras (in 80° 17′ 21″,) or 7° 26′ 9″, to 80° 14′ 0″, we obtain for the light-house 72° 47′ 51″. The flag-staff, which is 1′ 30″ east of the light-house, would, therefore, be in 72° 49′ 21″; and the church which, with the saluting battery, is 16′ west of the flag-staff, in 72° 49′ 5″. Since however, the position is on the point of being definitively connected with Madras, we shall not, until the result is officially given out, make any alteration in the longitude employed in the extensive marine surveys of the Persian Gulf, Coast of Arabia, and Red Sea, namely, the church in 72° 53′ 26″, which for the present we adopt.

It will be proper, therefore, to bear in mind, that the longitudes referred to the church will be subject to a *minus* correction, which may be expected not to differ much from 4′ 21″.

188. *Agoada Point.* Jetty.

Lt. ho. Lambton,	D.L. *Madras* obs.	6°	28′	28″	73° 45′ 32″
Moresby,	D L. *Bombay*	0	56	4*	

We adopt 73° 45′ 32″.

* This diff. long. applied to 73° 45′ 32″ gives for Bombay, (church as we suppose) 72° 49′ 26″, agreeing nearly with the position deduced.

189. *Mangalore* flag-staff.

Lambton, trig. survey, 74° 50′ 53″. Horsburgh quoting the trig. survey, adopts 74° 53′.

Again, in the original list of the positions of the trig. survey, the diff. long. between Madras and this place is given at 5° 24′ 45″, which applied to his long. of Madras or 80° 18′ 30″, gives 74° 53′ 45″. The difference of the two longitudes 80° 18′ 30″, and 74° 50′ 53″ is 5° 27′ 37″.

It appears from a document of Capt. D. Ross's (at the Geographical Society,) that the flag-staff has been moved one mile to the N.N.E.; hence, as we do not know precisely when this took place, we must be content to admit for the present a discrepancy, amounting however to only 22″.

Moresby,	D.L. *Bombay*	1°	59′	1″	74° 52′ 27″
James,* 1835	D.L. *do.* 4ch. 4d.	1	59	41	74 53 7
Ethersey, 1837	D.L. *do.* 2ch. 12d.	2	0	24	74 53 50

* Master of her Majesty's ship Andromache.

I have adopted 74° 59′ 0″, in order to preserve the correction with Bombay.*

190. *Anjenga*, flag-staff.

Survey	76° 49′ 28″.	
D.L. *Madras* obs.	3 29 2	76° 44′ 58″

191. *Calcutta*. Fort William, flag-staff.

Colebrooke, Jup. Sat. compared with corresponding Greenwich observations, (in a note from Captain Horsburgh to Captain Beaufort, July the 27th, 1832.)			88° 21′ 30″
Major Hodgson, Jup. Sat. according to the Tables as corrected by Col. Beaufoy's observations			88 17 31
———By 91 lunar transits, (Conn. des Tems. 1836)			88 19 15
Wurm. Astr. Nachr. No. 173, 27 eclip. Jup. Sat.			88 24 9
Ross, (Authorities not stated,)			88 21 10
Col. Everest, in a note to the Hydrographic Office			88 20 17
Colebrooke. D.L. *Madras* obs. Jup. Sat. by numerous corresponding observations	8° 6′ 18″		88 20 18
Hodgson. D.L. *do.* 9 Im. I. Sat. 32m. 25·8s.	8 3 6		88 17 6
8 Em. do. 31 59·1			

If we take the mean of Colebrooke's and Hodgson's astronomical diff. long. or 8° 4′ 42″, and apply it to 88° 14′ 0″, we obtain 88° 18′ 42″, which agrees nearly with the result of the lunar transits. By comparing the longitude of Fort William, communicated by Col. Everest, with that lately employed for Madras, or 80° 17′ 21″, it appears that he considers the diff. long. of these places 8° 2′ 56″. As we conclude that Col. Everest is the best authority on this point, we shall apply this last quantity to 80° 14′, which gives Fort William 88° 16′ 56″.

In assigning this position to Calcutta, we must apply a correction of about —3′ to such of Captains Ross and Crawford's surveys of Aracan, and the coast to the southward, as are referred directly to Calcutta. Should therefore the diff. long. adopted above, between Calcutta and Madras be much altered, a corresponding alteration† must again be carried through these surveys. These changes are necessarily unavoidable, in the attempt to obtain a systematic connexion among all the places.

* It is proper to remark here, for the information of the reader, who may not have seen the late *errata* in my Practice of Navigation, (published in this Magazine,) that the statement respecting the D.L. between Bombay and Mangalore in the page of corrections is erroneous.

† I understood at the time I obtained these *data*, that the survey had proceeded as far as Calcutta, but that the calculations had not been fully made.

192. *Diamond Harbour*.

Lloyd, 8′ 50″ (about) west of Fort William, or	81° 8′ 6″

The British Queen, steam ship has sailed for Antwerp. The British and American Steam Company it is said, have received for her the sum of £60,000 from the Belgian Government. For the President the same Company, it is said, received above £70,000 from the Underwriters. The losses sustained by the Company since its establishment are supposed not to be less than £80,000, nor more than £100,000.—*Liverpool Albion, Sept.* 6. So much for the Leviathans.

The Variation of the Compass.

(Continued from p. 691.)

Royal Observatory, Oct. 1st, 1841,
Magnetical and Meteorological Department.

Mean Magnetic Variation for August 1841=23° 19′ 1″.

MEAN MAGNETIC DIP.

	At 9 A.M.	At 3 P.M.
1841—July	69° 7′	69° 2′

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

Chinese Intelligence.

The following despatches containing accounts of the late brilliant proceedings of our land and sea forces before Canton, will be read with great interest, evincing as they do, in every line, the brave and determined spirit of our gallant countrymen. We find the following summary in the *Times*.

The fact is known in Europe that Capt. Elliot had, at the end of the month of March, concluded a convention with the Chinese; trade was carried on during six weeks, and an appearance prevailed of a good understanding on both sides. But, although a vast quantity of tea was exported, the Chinese were not idle in making preparations for war. Troops were assembled at Canton and its neighbourhood, new cannon were cast, and the forts were put into a state of defence, and several fleets of small fire vessels were got ready to destroy the British men-of-war. Capt. Elliot went in a steamer on the 10th of May to Canton, where he saw the preparations made by the Chinese. He had an interview with the Mandarin Governor, and on his return to the British fleet he countermanded the expedition which was to proceed in five or six days to Amoy. On the 17th Capt. Elliot went again towards Canton, and orders were issued to the expedition under the command of Sir H. Le Fleming Senhouse and General Sir Hugh Gough to move up the river, and to anchor near the city, where the most hostile preparations were made by both parties. Crowds of the citizens fled, and the merchants began to remove their goods.

On the 20th the Mandarin Governor Yu issued a proclamation declaring that there was no ground for alarm, and on the 21st a British proclamation was issued, desiring all the foreigners to retire from the factories "before sunset." The former proclamation was looked upon as a trick to deceive the merchants into a false security, with the object of seizing them during the night.

At 11 o'clock that night the Chinese began the attack by firing at all the British vessels within reach of the forts. The fire-ships were let loose, but the British men-of-war were on the alert, and the steamer Nemesis towed off the Chinese vessels. The fight began during the night between several of the British ships and the fort of Shaming, which was silenced in the morning. Eight new brass guns were found

in it. During the engagement a fleet of war junks came out of a creek. The Nemesis moved towards them, but afraid of her 31-pounders, they retreated into the creek. Thither the Nemesis pursued them, and during three hours the sailors were busy in setting fire to at least forty junks. Having completed the work, the steamer emerged from the creek decorated with the flags and pendants of the junks; the sailors too presented a comical sight, they were dressed in Chinese robes—some with Mandarin caps, and others, particularly one boat's crew, had each a Chinaman's tail hanging at the back of their necks.

On Sunday, the 23rd of May, the squadron and the troops arrived, and the chiefs, Elliott, Senhouse, and Gough, held a conference. They then sent Capt. Belcher, of Her Majesty's ship Sulphur, to reconnoitre the river, and to find a place for landing on the north side. This reconnoissance was attacked, but beat off the assailants, and burned twenty-eight of their boats. An excellent place for landing the troops and guns was then discovered.

On the 24th, at 2 o'clock in the afternoon, the troops being in the boats, the steamers proceeded to tow them to their destination. The Atalanta took the right column, under the the command of Major Pratt, of Her Majesty's 26th regiment, to serve and hold the factories on the bank of the river to the south of the city, while the Nemesis towed the left column towards Tsing-hae, five miles up the river. The guns were landed during the night. Before the right column landed the Dutch and British factories had been most thoroughly plundered by the mob of the city.

In the official account sent by General Sir Hugh Gough will be found an animated detail of the proceedings of the gallant soldiers. The Mandarin Governor of Canton was soon forced to cry out for quarter, and after various parleys Capt. Elliot agreed to spare the city from an assault, and withdraw the British troops and ships-of-war from the river, upon the conditions—first, of the three imperial commissioners and all the troops under their command (the provincial troops alone excepted,) quitting Canton and its vicinity, and marching sixty miles from it, and of the forts not being restored; *second*, 6,000,000 dollars to be paid for the use of the British Crown within one week, the first million before sunset of that day (the 27th); and *third*, the troops to remain in their positions until the two former conditions were completed; and the ransom to be increased to 7,000,000 if seven days elapsed, to 8,000,000 if 14 days, and to 9,000,000 if 20 days were allowed to elapse. The losses sustained in the factories, and by the destruction of the Spanish brig Bilbaino, to be paid within a week. The assent of the three Imperial Commissioners was also required to the convention. This was soon granted.

After three days delay, the whole of the conditions having been complied with, the British troops, who had previously had several skirmishes with the Tartar troops, were withdrawn, the Chinese furnishing every means to get rid of them and their guns. The heat was excessive—one officer, Major Becher, fell dead from a stroke of the sun. There were several thunder-storms, and sickness was apprehended from the rice-fields around the forts where the troops had taken their stations. Ninety-seven men, including fifteen officers, were wounded, and thirteen killed,

including Lieut. Fox, of the Nimrod. Sir H. Le Fleming Senhouse died on board the Blenheim on the morning of the 14th of June, in consequence of fever caused by excessive fatigue.

The latest intelligence from Macao is to the 21st of June; it represents the Chinese as highly incensed with the acts of the British, and their determination to resist as most uncompromising. The Emperor's nephew had sent a report to his uncle, in which he declares that the English did great execution at Canton, and that the cries of the inhabitants for peace tore his bowels with anguish, and that he had given them several millions "for the opium," and to induce them to withdraw; and that, as he had beguiled the barbarians away, he would set about the repairs of the forts on the river. This report is looked upon as an irrefragable proof of Chinese perfidy, and no security existed for peace.

In the meantime Capt. Elliot was busy in settling the sites of the houses in the new city, of which he has laid down the foundation in the island of Hongkong. Preparations were, however, going forward for an expedition destined, as it was stated, to proceed to the northward, as some conjecture, to attack even Pekin itself. Sir J. J. Gordon Bremer had arrived in the Queen steamer from Calcutta. The steamer having on board the new Plenipotentiary, Sir H. Pottinger, and the Admiral, Sir W. Parker, had been spoken with on the 28th of July, in the Straits of Malacca, and was expected to arrive at Macao early in August. Her Majesty's steamer Nimrod came with the despatches to Earl Auckland at Calcutta, and the gallant Capt. Barlow was to proceed by this mail with the despatches for London. A steamer took him on the 10th ult., from Calcutta to Masulipatam, whence he proceeded, notwithstanding the most formidable obstacles in crossing the torrents, with all haste to join the steamer for Suez.

It may be proper to mention that the rumours at first circulated respecting the steamer Atalanta having broken her back in the Canton river turn out to be exaggerated. She was injured, but not seriously. She is expected to arrive soon in Bombay, in order to be effectually repaired.

In consequence of the non-arrival of the Calcutta overland mail, which was delayed by the torrents on the road to Bombay, the departure of the steamer was postponed until the 2nd ult.

The Castle Huntley, a merchant ship, arrived on the 20th of June. The newspapers to that date add but little to the intelligence already stated. The health of the troops, which had suffered from great heat and great rains during the attack on Canton, was improving. The deaths are mentioned of Capt. Brodie, of the troop-ship Rattlesnake, by apoplexy; Dr. Wallace, of Her Majesty's ship Conway; Adjutant Wilson, of the 18th Royal Irish; and Lieut. Fitzgerald, of Her Majesty's ship Modeste, in consequence of a wound received during the attack—*Times*.

OFFICIAL ACCOUNTS OF THE LATE NAVAL AND MILITARY OPERATIONS IN CHINA.

(From the Calcutta Gazette, Extra, Aug. 7.)

Fort William, Secret Department, Aug. 7, 1841.

The Right Hon. the Governor-General of India in Council having this day received intelligence of the happy result of the joint operations of Her Majesty's

and the Hon. Company's naval and military forces in an attack upon the Chinese forces in front of the city of Canton, on the 25th and 30th of May last, is pleased to direct the publication for general information of the following despatch from General Sir Hugh Gough, KCB., commanding the land forces, and extracts from a despatch addressed by Capt. Henry Le Fleming Senhouse, KCH., the senior naval officer of the fleet at Canton, to his Excellency the Naval Commander-in-Chief in India, which has been communicated to the Supreme Government.

These accounts of the brilliant successes of the British arms have been received with the highest gratification by the Governor-General in Council, who, in expressing his admiration of the gallant conduct of every portion of the forces employed in this service, has deeply to lament the loss which has been sustained by the death of Capt. Sir H. Le Fleming Senhouse, who is reported to have subsequently sunk under the fatigue and exhaustion caused by his exertions in the actions with the Chinese.

The Governor-General in Council is pleased to direct, that in honour of this victory of the British arms, a Royal Salute be fired from the ramparts of Fort William, and at the principal military stations of the army of India.

By order of the Right Hon. the Governor-General of India in Council.

T. H. MADDOX,
Secretary to the Government of India.

Head Quarters, ship Marion, Canton River, proceeding to Hongkong, June 3.

MY LORD.—My letter of the 18th from Hongkong will have made your lordship aware of the temporary abandonment of the movement on Amoy, in order to resume active operations against Canton, consequent upon the constant arrival and concentration of a large force from the several provinces, and other demonstration indicative of an interruption to our friendly intercourse with the provincial Government.

2. From the judicious and unwearied exertions of Sir Le Fleming Senhouse, the senior naval officer, the fleet of men-of-war and transports was prepared to sail on the 18th, but in consequence of light and variable winds the whole did not get underway until the 19th. Her Majesty's ship Blenheim took up her position within six miles of Canton in the Macao passage on the 21st ult., but the whole of the force was not assembled until the morning of the 23rd, when I proceeded with Sir Le Fleming Senhouse to the vicinity of the suburbs of the city, for the double object of meeting Her Majesty's Plenipotentiary and ascertaining, as far as possible, the extent of the enemy's preparations.

3. It being the anxious wish both of Sir Le Fleming Senhouse and myself to commence active operations on so auspicious an epoch as the anniversary of the birth of our sovereign, every exertion was made, and the troops were placed by 2 P.M. on that day in various craft, procured during the previous day and night by the great exertions of the Royal navy.

4. From all the sources from which I had been enabled to collect information, or rather from the conjectures of persons who have long resided in China (for no European had been permitted to see the country above the factories, and the Chinese would give no information), I was induced to decide on making my principal point of debarcation to the north-west of the city, while another column was to take possession of the factories, drawing the attention of the enemy to that quarter, and at the same time to co-operate with the naval force which was to attack the river defences, in order to silence numerous new works recently erected by the Chinese along the whole southern face of the city. A most spirited and judicious reconnoissance made by Captain Belcher, of H.M.S. Sulphur, the previous evening, established the practicability of effecting a landing at the point I had selected.

5. Every arrangement having been completed by 2 o'clock, and the boats and other craft placed in tow of the steamers, the force moved to the point of attack as follows :—

Right column, to attack and hold the factories, in tow of the Atalanta, consisting of Her Majesty's 26th regiment, (15 officers and 294 other ranks,) an officer and 20 rank and file of the Madras Artillery, with an officer of engineers, under Major Pratt, of Her Majesty's 26th.

Left column, towed by the Nemesis, in four brigades, to move in front.

Fourth (left) brigade, under Lieut.-Col. Morris, 49th regiment.—Her Majesty's 49th, commanded by Major Stephens, 28 officers, 273 other ranks; 37th Madras Native Infantry, Capt. Duff, 11 officers, 219 other ranks; one company of Bengal Volunteers, Capt. Mee, 1 officer, and 114 other ranks.

Third (Artillery) brigade, under Capt. Knowles, Royal Artillery.—Royal Artillery, Lieut. Spencer, 2 officers, and 33 other ranks; Madras Artillery, including Gun Lascars, Capt. Anstruther, 10 officers, 231 other ranks; Sappers and Miners, Capt. Cotton, 4 officers, 137 other ranks.

Ordnance.—Four 12-pounder howitzers, four 9-pounder field guns, two 6-pounder field guns, three 5½-inch mortars, and one hundred and fifty-two 32-pounder rockets.

Second Naval brigade, under Capt. Bourchier, H.M.S. Blonde.—First naval battallion, Capt. Maitland, H.M.S. Wellesley, 11 officers, 172 other ranks; second naval battalion, Com. Barlow, H.M.S. Nimrod, 16 officers, 231 other ranks.

First (right) brigade (reserve), under Major-Gen. Burrell.—Royal Marines, Capt. Ellis, 9 officers, 372 other ranks; 18th Royal Irish, Lieut.-Col. Adams, 25 officers, 495 other ranks.

6. The right column reached its point of attack before 5 P.M., and took possession of the factories, when Major Pratt made the necessary arrangements, strengthening his post, holding his men ready for offensive or defensive operations.

7. The left column, towed by the Nemesis, from the difficulties of the passage with such a fleet of craft as she had in tow, did not reach the Sulphur until dusk, which vessel Capt. Belcher had judiciously anchored close to the village of Tsing-hae, the point of debarcation, about five miles by the river line above the factories, I could therefore only land the 49th regiment, with which corps I made a reconnoissance to some distance, meeting a few straggling parties of the enemy. After placing the pickets, the corps fell back on the village of Tsing-hae to protect and cover the landing of the guns, which was effected during the night by the zealous efforts of the artillery. The following morning the remainder of the column landed, and the whole proceeded soon after daylight.

8. The heights to the north of Canton, crowned by four strong forts and the city walls, which run over the southern extremity of these heights, including one elevated point, appeared to be about three miles and a half distant; the intermediate ground, undulating much, and intersected by hollows under wet paddy cultivation, enabled me to take up successive positions, until we approached within range of the forts on the heights and the northern face of the city walls. I had to wait here some time, placing the men under cover, to bring up the rocket battery and artillery.

6. I have already informed your lordship that I was totally unacquainted with the country which I had to pass over, the amount of the enemy's force, or the difficulties that might present themselves at every step; but I had the proud consciousness of feeling that your lordship had placed under me a band whom no disparity of numbers could dishearten, and no difficulty could check. They nobly realized, by their steadiness under fire, their disciplined advance, and their animated rush, my warmest approbation.

10. Having at 3 o'clock got up the rocket battery, with two 5½-inch mortars, two 12-pounder howitzers, and two 9-pounder guns, a well-directed fire was kept up on the two western forts, which had much annoyed us by a heavy fire. I now made the disposition for attack *en chellon* of columns from the left, and directed the 49th regiment to carry a hill on the left of the nearest eastern fort, supported by the 37th Madras Native Infantry and Bengal Volunteers, under

Lieut.-Col. Morris, of the 49th regiment. The 18th Royal Irish, supported by the Royal Marines, under Major-Gen. Burrell, I directed to carry a hill to their front, which was strongly occupied, and flanked the approach to the fort just mentioned. This movement was to cut off the communication between the two eastern forts, and to cover the advance of the 49th in their attack and storm of the nearest. Major-Gen. Burrell had directions to push on and take the principal square fort when the 49th made their rush. Simultaneous with these attacks, the brigade of seamen was to carry the two western forts, covered by a concentrated fire from the guns and rockets.

11. During the whole of the advance my right had been threatened by a large body of the enemy, which debouched from the western suburbs, and just as I was about to commence the attack a report was made that heavy columns were advancing on the right; I was, therefore, compelled to detach the Marines under Capt. Ellis, to support the brigade of seamen, and to cover my right and rear.

12. At about half 9 o'clock the advance was sounded, and it has seldom fallen to my lot to witness a more soldierlike and steady advance, or a more animated attack. Every individual, native as well as European, steadily and gallantly did his duty. The 18th and 49th were emulous which should first reach their appointed goals; but, under the impulse of this feeling, they did not lose sight of that discipline which could alone insure success. The advance of the 37th Madras Native Infantry and Bengal Volunteers, in support, was equally praiseworthy.

13. The result of this combined movement was, that the two forts were captured with comparatively small loss, and that, in little more than half-an-hour after the order to advance was given, the British troops looked down on Canton within 100 paces of its walls.

14. The well-directed fire of the artillery in the centre was highly creditable, and did great execution.

15. In co-operation with these attacks, I witnessed with no ordinary gratification the noble rush of the brigade of seamen, under their gallant leader Capt. Bourchier, exposed to a heavy fire from the whole of the north-western rampart. This right attack was equally successful, and here also the British standard proudly waved on the two western forts, while the British tars looked down upon the north-western face of the city and its suburb.

16. During the greater part of the day a very spirited fire from heavy pieces of ordnance, gingals, and matchlocks, was kept up on the different columns occupying the heights and forts.

17. A strongly intrenched camp of considerable extent, occupied apparently by about 4,000 men, lay to the north-east of the city upon rising ground, separated by a tract of paddy land from the base of the heights. Frequent attacks were made upon my left by bodies sent from this encampment, but were as frequently repulsed by the 49th. This, however, exposed the men to a heavy fire from the walls of the city.

18. About 2 o'clock, perceiving that Mandarins of consequence were joining this force from the city, and had occupied a village in the rear to my left, I directed the 49th to dislodge them. This was instantly effected in the same spirited manner that had marked every movement of this gallant corps. About 3 o'clock it was evident that some Mandarin of high rank had reached the encampment (I have since understood that it was Yang, the Tatar General), and that preparations were making for a fresh attack. I ordered down the 18th, therefore, with one company of the Royal Marines to re-inforce the 49th, and directed Major-General Burrell to assume the command, to repel the projected attack, and instantly to follow up the enemy across a narrow causeway, the only approach, and take and destroy the encampment. This duty was well and gallantly performed, but I regret to say with severe loss, from the difficulty of approach, exposed to a heavy fire from the guns and gingals on the north-east face of the city wall. The enemy were driven at all points and fled across the country; the encampment was burnt, the magazines, of which there were

several, blown up, and the permanent buildings of considerable extent set on fire. I had as much pleasure in witnessing, as I have in recording, my approval of the spirited conduct of Capt. Grattan, who commanded the two leading companies of the 18th across the causeway. These companies were followed by the 49th, the remainder of the 18th, and a company of Royal Marines, who passed along a bank of the paddy fields to their left. The enemy not appearing inclined to move out of the town to support this point, I directed the force to return to the heights.

19. Having reconnoitred the walls and and gates, I decided on taking the city by assault, or rather upon taking a strong fortified height of considerable extent within the city walls, before the panic ceased, but the hill in our rear being peculiarly rugged, and its base difficult of approach on account of the narrowness of the path, between wet paddy fields, I had only been enabled to get up a very few of the lightest pieces of ordnance, and a small portion of ammunition. I therefore deemed it right to await the arrival of this necessary arm to make the assault.

20. The following morning, the 26th, at 10 o'clock, a flag of truce was hoisted on the walls, when I deputed Mr. Thom (whom Captain Elliot had sent to me as interpreter) to ascertain the cause. A Mandarin stated that they wished for peace. I had it explained that, as General commanding the British, I would treat with none but the General commanding the Chinese troops, that we came before Canton much against the wishes of the British nation, but that repeated insults and breaches of faith had compelled us to make the present movement, and that I would cease from hostilities for two hours to enable their General to meet me and Sir Le Fleming Senhouse, who kindly accompanied me throughout the whole operation, and to whose judicious arrangements and unceasing exertions for the furtherance of the united services (and I am proud to say they are united in hand and heart,) I cannot too strongly express my sense of obligation. I further explained that Captain Elliot, Her Majesty's Plenipotentiary, was with the advanced squadron to the south of the city, and that if I did not receive a communication from him, or had not a satisfactory interview with the General, I should at the termination of the two hours order the white flag to be struck.

21. As the General did not make his appearance, although numerous messages were received between this time (about noon) and 4. p.m., I hauled down the white flag. The enemy, however, did not, which was rather convenient, as it enabled me to get up my guns and ammunition, without exposing my men to fire.

22. During the night of the 26th everything was prepared on our side, with the exception of one 12-pounder howitzer, the carriage of which had been disabled. The guns, by the indefatigable exertions of the officers and men of the Royal Artillery, and Madras Artillery and Sappers, were placed in position. All was ready, and the necessary orders were given for opening the batteries at 7 o'clock on the morning of the 27th, and for the assault at 8, in 4 columns.

23. The right column, composed of the Royal Marines under Captain Ellis, had directions to pass through a deserted village to the right of the north gate, to blow the gate open with powder-bags if possible, and if not, to escalade a circular work thrown up as a second defence to that gate.

24. The second column on the right, consisting of the brigade of seamen, under Captain Bourchier, was directed to make the assault by escalade on the opposite side of the circular defence, where the wall appeared comparatively low, covered by a heavy fire of musketry from the hill within pistol-shot of the wall. This column would have been exposed only to the fire of a few flanking guns, which I calculated would have been kept under by the fire of the covering party.

25. The 18th Royal Irish, under Lieutenant-Colonel Adams, were ordered to advance from the rear of a hill close to the five storied pagoda, and to escalade the walls behind this pagoda, which was not flanked, except by one gun, although

they were very high, from 28 to 30 feet; but I hoped by the concentrated fire of the guns to have reduced an exceedingly high and apparently slight parapet. The escalade of this corps was to be covered by the Bengal Volunteers and a company of the 37th Madras Native Infantry.

26. The left assault was to be made by the 49th, under Lieutenant-Colonel Morris. This corps was directed to escalade by a bastion directly in front of, and commanded by, the principal fort in our possession, called by the Chinese Yung-Kang-Tai, the fire of musketry from which would have prevented the enemy from making use of their guns. To strengthen this attack, two companies of the 37th Madras Native Infantry were to occupy the heights and keep up a rapid fire upon the wall.

27. The ground was peculiarly favourable for these several attacks, and for the effective fire of the covering parties, without a chance of injuring the assailants. The heights which we occupied are from 90 to 250 paces from the city wall, with a precipitous glen intervening. On making a lodgement on the walls, each column was to communicate with and support that on its inner flank, and, when united, to make a rush for the fortified hill within the walls, on which the artillery was directed to play from the moment the advance was sounded. I directed Captain Knowles to ascertain as far as practicable, by the fire of heavy rockets and shells, whether it was mined, which alone I apprehended, the Chinese usually forming their mines so as to make them liable to explosion by such means.

28. The flags of truce still appeared upon the walls at daylight on the 27th, and at a quarter past 6 o'clock I was on the point of sending the interpreter to explain that I could not respect such a display, after my flag had been taken down, and should at once resume hostilities. At this moment an officer of the Royal navy, who had been travelling all night, having missed his way, handed me the accompanying letter from Her Majesty's Plenipotentiary. Whatever might be my sentiments, my duty was to asquiesce; the attack, which was to have commenced in 45 minutes, was countermanded, and the feelings of the Chinese were spared. Of the policy of the measure I do not consider myself a competent judge; but I say "feelings," as I would have been responsible that Canton should be equally spared, with the exception of its defences, and that not a soldier should have entered the town further than the fortified heights within its walls.

29. At 10 o'clock Yang, the Tatar General, requested a conference, when Sir Le Fleming Senhouse accompanied me, and a long and uninteresting parley ensued, in which I explained, that Her Majesty's Plenipotentiary having resumed negotiations with the local authorities, I should await a further communication from him. At 12 Captain Elliot arrived in camp, and all further active operations ceased.

30. The following day at 12, in a conference with the Kwang-chow-Foo, under the walls, every arrangement was made for the evacuation of the city by as large a portion of the Tatar troops as could be got ready, and I permitted a Mandarin of rank to pass through my lines to procure quarters for them. I was now given to understand that the force amounted to 45,000 men from other provinces, exclusive of the troops belonging to the Quangtung province. At the request of Captain Elliot I acquiesced in the former passing out of the north-east gate to the left of my position, and permitted them to carry away their arms and baggage, on condition that no banner should be displayed or music sounded.

31. About 12 the following day I perceived numbers of men, apparently irregulars, and armed for the most part with long spears, shields, and swords, collecting upon the heights, three or four miles in my rear. As they continued rapidly to increase, detaching bodies to their front, I directed General Burrell to take charge of our position, and hold every man ready, in case a sortie or other act of treachery, under cover of a flag of truce, should be intended; and I advanced with a wing of the 26th (which corps I had withdrawn two days

previously from the factories,) companies of the 49th, the 37th Madras Native Infantry, and the company of Bengal Volunteers, supported by the Royal Marines. The two latter corps I kept in reserve, ready to return and act on the flank, should an attack be made on our position from the town. When I descended the heights, about 4,000 men appeared in my front. I directed the wing of the 26th, under Major Pratt, supported by the 37th Madras Native Infantry, to advance and drive them from rather a strong position they had taken up behind an embankment along the bed of a stream. This duty the 26th and 37th performed most creditably; and, as the Chinese made a rally at what appeared to be a military post in my front, I directed that it should be destroyed, which was instantly effected by the 26th, and a magazine, unexpectedly found in the village, was blown up. These duties having been performed without the loss of a man, the Chinese throwing away their spears and flying the moment a fire was opened upon them, I directed the 49th, Royal Marines, and Bengal Volunteers to fall back on our position, and remain with the wing of the 26th and 37th Madras Native Infantry (about 289 men) to watch the movements of the Chinese, who had retreated to a range of heights in my front, having no banners, and apparently but few matchlocks amongst them. Within two hours, however, from 7,000 to 8,000 men had collected and displayed numerous banners. When I first moved, I had ordered Captain Knowles, of the Royal Artillery, to bring out a few rockets, but our advance was so rapid that he did not get them up until after the repulse of the first body.

32. At this moment the heat of the sun was hardly supportable, and both officers and men were greatly exhausted. I must here state, and with sincere sorrow, that Major Becher, Deputy-Quartermaster-General, a most estimable and willing officer, whose services throughout the previous operations were as creditable to him as they were satisfactory to me, fell by my side from overexertion, and expired within a few minutes. My Aide-de-Camp, Captain Gough, was also alarmingly unwell from the same cause, and I ordered him back to camp when the enemy were repulsed, but, hearing that the Chinese were again assembling, he returned, and meeting the Bengal Volunteers, very judiciously brought them back.

33. The Chinese having advanced in great force, some rockets were fired at them, but, although thrown with great precision, appeared to have little effect, and, as the approach of a thunder storm was evident, I became anxious, before it broke, to disperse this assemblage, whose approach bespoke more determination than I had previously witnessed. I ordered Major Pratt to attack a large body who were advancing through the paddy fields on his left, and to clear the hills to his front. Captain Duff, with the 37th Madras Native Infantry, supported by the Bengal Volunteers, under Captain Mee, I ordered to advance direct to his front, and dislodge a body which had re-occupied the post that we had previously burnt, and then push forward and clear the hills to his front, I witnessed with much satisfaction the spirited manner in which these officers executed my orders, and the enemy were driven in at all points. The right of the 37th being threatened by a military post at the foot of the hills to our right the Bengal Volunteers dispersed the occupants. This, however, separated them from the 37th Madras Native Infantry, and perceiving that this latter corps was advancing further than I intended, I requested Captain Ommenney, of the 3rd Madras Light Cavalry, who with Lieutenant Makenzie of Her Majesty's 90th Regiment, accompanied me as amateurs, and both were most zealous and useful in conveying my orders, to direct the Bengal Volunteers to move up to its support. Captain Duff, meanwhile, to open his communication with the 26th on his left, had detatched a company under Lieutenant Hadfield for that purpose.

34. The thunder-storm was now most awful, and finding that as our men advanced the Chinese retired, I considered that it would be injudicious to follow them further, and directed the whole to fall back. The rain continued to fall

in torrents, and most of the firelocks had got wet; at one time the 26th had been unable to fire a single musket; this emboldened the Chinese, who, in many instances, attacked our men hand to hand, and the 26th had frequently to charge bodies that advanced close to them.

35. As the Chinese, even in this mode of warfare, could make no impression, they retreated, and the 26th and 37th Madras Native Infantry and Bengal Volunteers fell back. Understanding from Captain Duff that his detached company was with the 26th, I directed the whole, after a short halt, to return to our position, and was exceedingly annoyed, on the force concentrating, to find that the detached company under Lieutenant Hadfield had never joined the 26th. I immediately ordered two companies of Marines with the percussion locks to return with Captain Duff to the scene of this day's contest. It gives me no ordinary gratification to say that a little after dusk they found Lieutenant Hadfield with his gallant company in square surrounded by some thousand Chinese, who, as the 37th's firelocks would not go off, had approached close to them. The Sepoys, I am proud to say, in this critical situation, nobly upheld the high character of the native army, by unshrinking discipline and cheerful obedience, and I feel that the expression of my best thanks is due to Lieuts. Hadfield and Devereux, and Ensign Berkely, who zealously supported him during this trying scene. The last named officer, I regret to say, was severely wounded. The Marines with Captain Duff fired a couple of volleys into this crowd which instantly dispersed them with great loss.

36. At daylight next morning I felt myself called upon to send into the city and inform the Kwang-chow-Foo, that if, under existing circumstances, a similar insult was offered, or any demonstration made, indicative of hostile interruption to the negotiations pending under a flag of truce for the evacuation of the city by the Chinese troops, and a ransom for its deliverance, I would at once haul down the white flag and resume hostilities. At 12 Captain Elliot joined me, and a communication was received that the Kwang-chow-Foo would meet us under the walls. Previous to his arrival, vast numbers of Chinese appeared on the hills, from which we had driven them the night before, and which during the early part of the morning, had been clear. Guns and gingalls were fired in all directions, various banners displayed, and large parties thrown out in advance. About 7,500 Tatar troops had marched out of the city that morning, and where still moving with their arms, but, as stipulated, without music or banners. I felt some doubt whether treachery was not contemplated, and I therefore made such a disposition of our troops as to insure its defeat. By two o'clock from 12,000 to 15,000 men, evidently the same description of force that we had met the preceding day, had assembled on the same heights.

37. The Kwang-chow-Foo now arrived, and it became evident, as he was perfectly in my power, that no combination existed between the troops in the town or those marching out and the assemblage in my rear; I therefore ordered the wing of the 26th (the other wing had been left at Tsing-hae,) to keep up the communication with the rear, and a wing of the 49th, with the 37th Madras Native Infantry, and the Royal Marines, to be prepared to disperse the assailants. On joining the Kwang-chow-Foo, and explaining my determination to put my threat in force, if the enemy advanced, he assured me that this hostile movement was without the knowledge, and against the wishes of the Chinese authorities; that there were no Mandarins with this militia in our rear; that it had assembled to protect the villages in the plain, and that he would instantly send off a Mandarin of rank, (his own assistant) with orders for its immediate dispersion, if I would depute an officer to accompany him.

38. Captain Moore, of the 34th Bengal Native Infantry, Deputy Judge-Advocate-General, volunteered this hazardous duty. That officer had accompanied me as one of my personal staff throughout all the operations, and he and Major Wilson, Paymaster to the expedition, who kindly volunteered to act in the same capacity, had by their zealous service been most useful to me in a

country where all my orders were to be conveyed by officers on foot, through an intricate line of communication. Captain Moore was quite successful, as the whole body instantly retreated and entirely dispersed, as soon as he and the Mandarin had made known to the leaders the object of their coming.

39. Finding that 5,000,000 dollars had been paid, and that her Majesty's Plenipotentiary was perfectly satisfied with the security for payment of the remaining 1,000,000 for the ransom of Canton; that upwards of 14,500 Tatar troops had marched out of the town, under the terms of the treaty without colours or banners flying, or music beating; that 3,000 had gone by water, and that the remainder were prepared to follow when carriage was provided, I acceded to the wish of her Majesty's Plenipotentiary to embark the troops, the Chinese furnishing me with 800 Coolies to convey my guns and ammunition. These Coolies being furnished soon after daylight on the 1st instant, I sent all the guns and stores to the rear, covered by the 26th Royal Marines, 37th Madras Native Infantry, and Bengal Volunteers, and at 12 o'clock the British flag was lowered in the four forts, and the troops and brigade of seamen marched out and returned to Tsing-hae.

40. By the excellent arrangements, and under the active superintendence of Captain Bourchier, of her Majesty's ship Blonde, and Captain Maitland, of her Majesty's ship Wellesley, the whole were re-embarked by three o'clock, without leaving a man of the army or navy, or a camp-follower behind, and under tow of the Nemesis, reached their respective transports that night.

41. I have now, my Lord, detailed, I fear at too great length, the occurrences of eight days before Canton. I might have been very brief, perfect success attending every operation, but by a mere statement of leading facts, I should not have done justice to the discipline of the small, but gallant band, whom it was my good fortune to command, and whose devotedness was worthy of a better foe.

42. I have not touched upon the brilliant conduct of the Royal Navy, in their attacks and various operations to the south of the city, as these will be detailed by their own chief, to whom, as I have said, I cannot too strongly express my obligations.

43. In a body, where all have done their duty nobly and zealously, it would be invidious to particularize: I will, however, entreat your Lordship's favourable notice of commanding officers of brigades and corps, from whom I have received the most able assistance, and to whom my best thanks are due;—to Major-General Burrell, commanding the right brigade, who was zealously supported by Lieut.-Col. Adams, commanding the 11th Royal Irish, and Captain Ellis, commanding the marine battalion; to Captain Bourchier, of her Majesty's ship Blonde, commanding the brigade of seamen, supported most ably by Captain Maitland, of her Majesty's ship Wellesley, and Captain Barlow, of her Majesty's ship Nimrod; to Lieut.-Col. Morris, commanding the left brigade, whose good fortune it was first to carry the heights, and place the colours of the 49th on the first fort taken, gallantly seconded by Major Stephens, who commanded the 49th in the first operation, and Major Blyth, who commanded that corps during the latter part of the day; to Captain Duff, commanding the 37th Madras Native Infantry; and Captain Mee, commanding the Bengal Volunteers; to Major Pratt, commanding her Majesty's 26th Regiment. This corps, though not at first much engaged from the nature of its position at the factories, proved on the 30th, by its spirited and steady conduct, which nothing could exceed, how valuable its services would have been throughout.

To Captain Knowles, of the Royal Artillery, senior officer of that arm, my best thanks are due for his valuable services. Lieut. the Hon. R. C. Spenser, with the detachment of Royal Artillery, well supported the high character of that distinguished corps. The zeal of Captain Anstruther, commanding the Madras Artillery, was indefatigable, as were the efforts of every individual of that valuable body in bringing up the guns and ammunition.

To Captain Cotton, Field Engineer, I feel under the greatest obligations, and

I experienced the most ready support from every officer under him. Of one of them, Lieut. Rundall, I regret to say, that I shall probably lose the services for some time, in consequence of a severe wound. The useful labours of the Sappers called for my best thanks; they were chiefly prepared to place ladders for the escalade.

I feel greatly obliged to all the General Staff—all accompanied me on shore, and to their indefatigable attention in conveying orders on foot, at times to considerable distances, I was indebted. To Lieut.-Col. Mountain, Deputy-Adjutant-General, my best thanks are due for his unwearied exertions and valuable services, not only upon the present, but upon every occasion. The exertions of Major Hawkins, Deputy-Commissary-General, were unceasing; and by his judicious arrangement (and those of his assistants,) the troops were amply supplied. The excellent arrangements made by Dr. Grant, the Officiating Superintending Surgeon, and Medical Staff of Corps, call also for my acknowledgment. I beg to bring to your Lordship's particular notice my Aide-de-Camp, Captain Gough, of the 3rd Light Dragoons, from whom I have upon this, as upon every occasion, received the most active and unremitting assistance.

44. Having now conveyed my approval of the conduct of the commanding officers of brigades and corps, and the heads of departments, permit me to draw your Lordship's special attention to the praiseworthy conduct of the sailors and soldiers under my command, which in my mind does them the highest credit. During the eight days this force was on shore, and many of the corps were unavoidably placed in situations where sham-shu was abundant, but two instances of drunkenness occurred; and I deem it but justice here to mention a strong fact. The soldiers of the 49th, finding a quantity of sham-shu in the village they had so gallantly taken, without order or previous knowledge of their officers, brought the jars containing this pernicious liquor, and broke them in front of their corps, without the occurrence of a single case of intoxication.

45. This despatch will be presented by Captain Grattan, whose conduct I have already mentioned to your Lordship, and whom I have selected for this duty alone on account of his conduct. He is a most intelligent officer, and will be able to give your Lordship any further information.

I have the honour, &c.,

H. Gough, *Major-Gen.*

To Earl Auckland, &c. *Commanding Expeditionary Force.*

P.S. It is with deep regret that I have to mention the loss of Lieut. Fox of her Majesty's ship Nimrod, a most promising young officer, attached to Captain Barlow's battalion of seamen, who fell at the storming of the western forts; Mr. Walter Kendall, mate of the same ship, a very deserving officer, lost his leg, I am sorry to add, at the same time.

I have the honour to forward a return of the killed and wounded and a list of ordnance captured. Of the killed and wounded on the enemy's side it is difficult to form a correct estimate; but the Kwang-chow-Foo acknowledged to me that of the Tatar troops, 500 had been killed, and 1,500 wounded, on the 25th of May; and I conceive that the killed and wounded on the Chinese side upon the 30th, and in the different attacks made upon my flanks and line of communication, must have been double that number.

[In consequence of the length of the despatches, and our want of space for other matter, they will be concluded in our next.]

The British Flag.—Those of our Naval readers who were present before Beyrout, on the day subsequent to its bombardment, doubtless recollect the circumstance of Admiral Walker's landing, from his barge,

at the Western Fort, and planting Turkish colours in one of its ruined bastions, which were soon after removed by the enemy, who hoisted an Egyptian flag at the back of the fort, and remained on the spot, in some force, as a guard for its protection.

General of course was the desire afloat that the bunting then bidding us defiance should change masters before the close of the ensuing night. Many naturally felt ambitious to cut it out, and divers plans were no doubt formed to essay its capture—the accomplishment of which was effected by the cool determination and undaunted bravery of Mr. J. W. Dorville, (mate of H.M.S. Bellerophon,) who in spite of the manifold dangers and difficulties to be encountered in any attempt to seize the flag, daringly risked his life to obtain it.

Managing to reach the shore alone at some distance from the Fort, he proceeded to an imagined breach on the north-west face of it—but soon discovering that he had been deceived in his expectations, and that no egress was practicable at that point he next directed his efforts towards another quarter, but being again baffled he was compelled to relinquish all hope of attaining his object, unless he could transport himself to the neighbourhood of the mole, adjoining the Fort to the South. This he contrived to do, by water, but on arriving there fresh obstacles again presented themselves which he had not anticipated. Resolved however to surmount them, he re-landed, and after a short reconnoitre saw that the only plan open to him for the prosecution of his purpose was fraught with imminent dangers. Great as were the chances against the successful issue of his adventure, he remained resolute at heart, and in the face of impending peril fearlessly mounted the mole; scaled a wall inside of it, and crossed a small garden—which brought him before a high wall work of masonry, contiguous to the guard-house. Upon this he passed along on hands and knees, within hearing of the voices of the enemy. He then sought concealment amongst some foliage near the Flag-staff, and after watching for a propitious moment to emerge from this retreat he at length crept forth to the Flag-staff, ascended it, cut down the crimson colours that depended from its summit, and girding them round his waist and shoulders he hurriedly retraced his steps to the mole—upon reaching which he found the guard at his heels, and exposed to a heavy fire of musketry from them, he plunged into the water with his prize.—*Il Mediterraneo.*

Atlantic Navigation.—*Gulf Weed, &c.*

Sir.—I observe that in the interrogation of the individuals examined by a committee of the House of Commons, and by the Commisioners appointed to scrutinize the ports of the English Channel, with a view to determine which of the harbours should appear to be the best suited for despatching and landing the mails to and from the West Indies, great stress is laid on the shortest and most direct line to Samana, at the eastern extreme of Hayti; from which we may presume to think, that, the intention is when the establishment is perfected, that the steamers shall follow a direct course to that place, from the selected port in England, or from a given point clear of the intervention of

land. Is this practicable in a steamer? A line drawn from Lundy Island, or the Land's End, to the east coast of Hayti would cut, or pass very near, the Azores, and run across the central portion of the North Atlantic, called the "Weedy" or "Sargasso Sea," which is carpeted with the Fucus Natans, better known by the name of Gulf weed.

This extraordinary production of Nature lies so thick and compact for many leagues in that part of the ocean, as to render it impossible for a steam vessel to make way through it, her wheels would be soon clogged, and she would be unable to progress by the aid of her steam power. It is obvious, therefore, that a vessel so situated would have to unship her wheels, and rely upon her sails alone until extricated.

In this case the old apothegm of the "longest road round, is often the shortest way home" would be realized, as, by making a curve eastwardly the steamer's voyage would be accelerated both on her outward and return passage. Thousands of seamen familiar with Atlantic navigation have never seen this wonderful "Sea of weeds," most British trading vessels passing outside of it: in conversation recently with a Merchant Captain who had annually crossed the ocean to and from the West Indies for 46 years, he stated that he had never seen the Gulf weed, but in comparatively small patches, although he knew that in the central portion of the North Atlantic it covered the surface to a considerable extent.

I have thought this subject Mr. Editor, of sufficient importance to justify these few remarks.

It appears that Bristol has at last obtained its desire, the gallant and most worthy Admiral, Sir J. A. Gordon, and his coadjutors, having completed the examination of evidence in support of its claims, to be chosen as a fit port of departure for the mail steam packets to the West Indies. With a certain proviso, we anticipate a successful issue, that is to say, if the Bristolians will set to work with a hearty good will and construct a proper pier, &c., for, although we should be greatly astonished if the decision of the commissioners should prove otherwise than favourable to King Road, yet, we acknowledge that the expectation on this head, of the good citizens, would appear unreasonable without providing a proper place for receiving and landing the mails. Had they such complete, or even in progress towards completion, it would have been one of the strongest points for the preference of the port over any in the English Channel. The period is drawing nigh for the final arrangement, and I can only hope they are not "a day after the fair."

OCEANUS.

To the Editor, &c.

STEAM PACKETS TO AUSTRALIA.

MR. EDITOR.—It appears that letters and newspapers put into the post-office, pre-paid,* for Australia, are left to the chance of merchant vessels sailing for that remote part of the world for conveyance.

* The charge for letters is 8d., for papers 1d.

A passage completed in fifteen weeks would be considered a very good one, but merchant ships following the usual route, from the prevalence of calms and adverse winds and currents, we believe are seldom so fortunate as to accomplish the voyage out in so short a time. Making reasonable allowances for causes of delay, an answer to a letter sent from England, cannot now be expected before the lapse of eight or nine months.

We have, Sir, latterly been so surprised and pleased with accounts of the rapidity of transits to and from America; and the vastly improved transmission of letters to and from India *viâ* the Red Sea, that the very tardy mode of conveyance of epistolary correspondence above alluded to, begins to create dissatisfaction. Independant of the benefit to be derived from such facilities to communication as steam affords, in a commercial point of view, we may safely say that the affectionate ties of relation and friend, as forcibly claim a voice in the furtherance of a project that shall tend to shorten the period of the transmission of the reciprocal thoughts, hopes, and wishes among those who are separated by an interminable ocean.

Happily, Sir, for the age in which we live, the vast power of steam enables us to look forward with confidence for the accomplishment of desires, which had they been expressed a century or two ago, would have been deemed visionary and impossible. We know not, indeed, the limits to which this wonderful force may yet be applied; but we may speak of that which we know has been proved.

Considering the rising importance of the Australian Colonies, it seems desirable that some definite and regular mode of conveyance for the mails should be adopted, as well as for quicker transits. Is there any objection to the formation of a regular line of steam-packets, not round the Cape of Good Hope, but by the following route?

In the first place, the mails may be conveyed by the same route as those destined for India, and deposited at Bombay, thence re-shipped in a steamer which may either proceed direct to the Swan River, or call at some port of Sumatra or Java, for supplies if found necessary. From the direction of the course, either monsoon would become a "soldier's wind;" that is to say, fair, going to or coming from, either place above named. At the Swan River the mails may be transferred to another steamer, which would drop those for Port Philip, and Hobart Town, in her way to Sydney; and the New Zeeland bag may be conveyed thither by a fast-sailing schooner.

I have, Sir, been induced to throw out this suggestion in consequence of having recently seen a plan for the more speedy transit of letters to New Zeeland, by steam as far as Chagres, thence by courier to Panama, and from that place by a fast-sailing vessel across the Pacific to the destined islands.

Considering the light winds and calms to be expected near the line, and within the southern tropic, and adverse stormy gales extra-tropical between 140° west, and New Zeeland, we imagine that the route, *viâ* Bombay, as stated above, would prove the most speedy.

HOPE.

To the Editor, &c.

Nautical Notices.

Crown and Blundell Islands *off Morrison Island, Coast of China.*

The following extract from the log of the ship Blundell forwarded to us by Com. R. Collinson, RN., surveying on the Coast of China, is important to vessels navigating that yet unknown part of the world.

Extract from the log of the ship Blundell.

"The general appearance of Morrison Island is barren and rocky, with few trees, it is, perhaps, 10′ long, and highest at the south-east end.

"There is a large village on the south side, and the valley behind beautifully cultivated. The houses appear of stone and well built.

"The position of the easternmost island agrees exactly with that given by the American ship Morrison, to one named after her; but no notice is taken by her, or in any other chart of the larger one.

"It is 15′ from Morrison Island and extends 30′ in an N.N.E. and S.S.W. direction. Off the south-west part of it, and separated by a channel of half a mile, or a mile, is another small island, and 10′ or 15′ S.W. is a fourth, four or five leagues long, which is Crown Island. The large or Blundell Island is higher than the others, and liable to be thought one with Crown Island when seen from the westward. It is very uneven, composed of high sharp peaks. Crown Island lower and more level with a large village on the south-west side.

"Latitude 28° 04′ N., longitude 129° 38′ E.
Easternmost Island bearing N.E.b.E.
Outer Islands, W.S.W. to W.b.S. ½ S., 10′ leagues,
Larger one, W. ½ S. to N. ½ E.
N.B.—Longitude agrees with Chusan."

The Basses—*Ceylon.*

Ship Tigris, Trincomalee, Sept. 1st, 1840.

Sir.—Having occasion to pass inside the Great Basses on my passage from Colombo to the above named harbour, I found the following ledge of soundings stretching out from the rocks in a north-east direction.

Extract from the log of the Tigris.

"Aug. 28th, 11h. 40m. AM.—Fresh breezes at south-west, with fine clear weather.—Saw the Great Basses bearing S.E.b.S., one mile and a half. Hauled out south-east, at 12h. 20m. P.M.; the rocks bore S.W.b.S., one mile and a half; steered then north-east eight miles, with the rocks bearing south-west, and had the following soundings, viz. 9. 10. 12. 10. 9. 8. 7. 6. 6½. Had one cast of six fathoms when five miles from the rocks."

As there are no such soundings laid down in Horsburgh's or the Admiralty charts, (all of which I have), I take the liberty of sending the above correct soundings, running out from the north-east end of the Great Basses.

I am, &c.,

John Symons,
Master of ship Tigris.

[A question arises as to whether these soundings were taken at equal intervals of distance from each other, which we should feel obliged to the master of the Tigris to answer.—Ed.]

The Anna Shoal, reported in the Atlantic.

We record the following statement although "the shoal" reported seems to have been the wreck of a vessel. The master appears to have had the same antipathy to dropping his lead overboard as others before him.

Extract from the log of the Sicilian brig Anna.

"Tuesday, June 8th, 1841, P.M.—Ship sailing with all sails set,

"At 3 P.M. observed a shoal to the south, distance about two miles, appearing to the eye like a ship with three masts of equal height, and inclining towards the south, and about fifty feet high, surrounded by shoals level with the water.

"Wind at the time being S.E.b.S.
Weather moderate and clear.

Latitude at noon by observation . .	39°	32′	N.
Longitude by account	51	00	W.
The same by calculation at 3 P.M. .	39	32	N.
Longitude	50	50	W.

"Having made seven miles to the eastward from noon to that hour."

The weather being unfavourable, the master could not make any local observations, and was obliged to pursue his voyage to Naples.

(Signed) MARCO CARMELICH,
Master of the Anna.

CONDADO BANK, PANAMA BAY.

We understand that H. M. S. Actæon, Capt. Russel, in working into the bay of Panama on the 26th of December last, grounded on a bank called the Condado not laid down in the charts, with the following bearings.—Panama Cathedral W.b.S. the outer Perico island S.S.W. ½ W. The ship took the ground from 4½ fathoms, payed off before the wind and in ten minutes was again afloat. The upper part of Panama bay off the Town has very shoal water, and as there is no good survey yet made of it, a measure so highly desirable in these days of Steam Navigation, vessels are recommended not to make too free in standing inshore.

PRINCESS SHOAL, *New Ireland.—From Mr. Purdy.*

July 4th, 6 A.M.—On the 9th of June 1829, the Princess Royal sailed from Port Jackson, bound to Batavia; and she got through St. George's Channel on the 2nd of July, at 8 p. m.; that day it became quite calm, we found the ship had driven alongside a steep bank or reef, but the water was so very smooth it was some minutes before we discovered our danger. The kedges were immediately got out, but the water was so deep they were of no use. Got the boats abreast and endeavoured to tow her head off but could not. At 2 a.m. a light breeze springing up from the southward when she immediately went off, cut the warps and made all sail. Whilst alongside the bank, the water was so smooth that we scarcely felt the touch. The latitude is 4° 6′ S., and longitude 151° 37′ E. of Greenwich, and lies directly in the fairway of ships steering to the westward from St. Georges Channel—the extent could not be ascertained.

Soundings along the side of the bank, starboard five chains 9 feet, mizen chains 7 feet, larboard five chains 11 fathoms, mizen chains 12 fathoms, under the fore foot 5 fathoms, under the stern post 5 fathoms dash; at a ship's length to the northward no bottom at 50 fathoms. Bearings from the ship whilst alongside the bank.

Cape Stephens S.W ½ W. 12m., Point marked A. ½ S.b.E. E. 11m.—True bearings.

THE MONEY SHOAL—*Arrafura Sea.*

The following is an important addition to the charts of this sea.

Dean March, Bristol, Sept. 21, 1841.

SIR.—I take the liberty of sending you information of a coral shoal which I passed over, in the Ship William Money on my late voyage from Sydney towards India, by way of Torres Straits, three other ships were in company viz., Lady Clarke, Livingstone, and King William, and our longitudes agreeing

within two miles, the said shoal lies in 10° 19′ S. latitude and 132° 47′ E. longitude, its extent about 5 miles, and the shoalest cast we had was 4½ fathoms.

It is probable, that shortly this shoal may become very dangerous, and I could find no danger placed in any of my charts near the above situation; perhaps you may think it worthy of notice in your truly useful and excellent publication, and may be of service to some of our friends sailing in the Timor Sea.

I am, &c.

S. Green,

To the Editor, &c. *Late Commander of ship William Money.*

The following extracts from the *Shipping Gazette* contain new and important matter to seamen:—

New Buoy at Bahia.—The French consul at Bahia informs us by letter, that a red buoy will be placed on the sand bank which extends from Fort Gamba, or St. Maratho, to opposite the Obelisk, at the public garden. On entering, this buoy must be passed on the right; the same is placed at a depth of 2¼ fathoms at low water. The necessity of placing a buoy on this bank is shown by many ships having touched on the same lately.

Light Vessel at Savana.—Custom-house Savana, Aug. 9—The following information in relation to the floating light near Martins Industry, and the bearings and distance from it of adjacent points, is deemed of sufficient interest to mariners to render its publication proper. The floating light is moored near Martins Industry, in latitude 31° 7′ N., longitude 80° 34′ W., and has the following soundings:—At high water, 6½ fathoms; common tides, 5½; low water, 6¼; Tybee lighthouse bearing S.W.b.W. ½ W., distance 15 miles; Hilton Head bearing N.W. ½ N., distance 8 miles; Bay Point bearing N.N.W. ½ W., distance 8 miles.—James Hunter, Collector.

The following notices will place seamen on their guard until we can obtain more precise accounts of the dangers alluded to. The "Red Cliffs" is an ambiguous term which we trust the harbour-master will explain to us. With respect to the rock off Sea Elephant Island, having consulted Capt. Wickham's survey, we believe the rock lies N.N.E. from the body of the island within the distance specified, instead of S.S.W. as would appear from the account.

Another rock stated to be off the west end, is about midway between the north and south extremes on the western shore.

Port Philip.—Capt. Lewis, the harbour-master, has very kindly furnished us with the following maritime information:—"Opposite the Red Bluff, on the eastern side of the harbour of Port Philip, there is a sunken rock, with eight feet of water above it at three-quarter flood; its situation is about two miles W.b.S. from the Red Cliffs, with deep water close to the edge of the rock."

No. 1—Kings Island.—*The N.N.E. Rock.*—Off Sea Elephant Island, in Bass Straits, about four miles, there is a rock visible at low water, but covered at the flood. The body of the Island bears by compass from the rock, N.N.E.; at half-tide it is visible above water to the size and height of a whale boat.

No. 2—Kings Island.—*The Midway Rock.*—The rock off the west end of Kings Island, Bass Straits, some account of which was formerly published in the Melbourne papers, lies in latitude 39° 51′ instead of 40° 9′ as was formerly stated. This error in the published account (which might lead to serious consequences) escaped Capt. Lewis's attention at the time it appeared, in consequence of his absence at the Heads.—*Port Philip Patriot.*

New Island in the Pacific Ocean.—Capt. Dougherty, of the ship James Stewart, whaler, arrived at this port, last week, reports that, on the 29th of May,

1841, at 2 A.M., saw land a head, luffed and cleared it; it appeared to be an island five or six miles in length, running N.E. and S.W., with a high round bluff on the N.E. end, with low land to the S.W.; between the N.E. and S.W. ends there appeared a valley covered with ice and snow; we passed it within a quarter of a mile, going at least ten knots, latitude 59° 20′ S., longitude 120° 20′ W. The latitude and longitude may differ a few miles, by reason of not having had proper observations for several preceding and following days. This island is not laid down in any of our charts.—*St. John, N.B., Courier, Aug.* 21.

Orleana Reef.—*China Sea.*

The following is a very important shoal communicated to the *Shipping Gazette*, and we recommend our readers frequenting the China Sea, to lose no time in transferring it to their charts. It is evidently a continuation of the cluster of reefs, commencing with the London Reefs on the north, and extending southward of the Bombay Castle. By laying down the courses and distances, run by the Orleana, the crescent form of the reef, and the position of the ship is sufficiently apparent. Owens Shoal, alluded to by Captain Cameron, is considerably to the northward of the Orleana Reef.—Ed. N.M.

"On the 27th of May, 1841, about 8 A.M., on my passage down the China Sea, in the Orleana, with a light wind at south-west, saw a ripple from the deck; tacked immediately and took a cast of the lead; got eighteen fathoms. Next cast eight feet, the bottom seen plainly from the deck—rugged black and white coral rocks. Then, heading W.N.W., but finding the water no deeper, kept away N.N.W., the opposite course to that we had been steering on the starboard tack, keeping the depth of from eight to twenty fathoms, the bottom seen plainly in thirteen fathoms. From first sounding we had made about a north-west course six miles, when the ripple was seen about a point on the lee bow; at 9h. 30m. tacked to the S.S.E. in about the same depths for three miles, when white patches were reported from the masthead on the weather bow bearing south. Not being able to weather them, at 10h. 30m. tacked to W.N.W. in seven fathoms, (six miles.) At this time, from the masthead, the shoal had the form of a crescent, and the ship embayed in the middle of it; the southern extremity white patches, and the north-west a ripple, as far as the eye could reach. Stood on the larboard tack, W.N.W., in the same depths, when about noon it suddenly deepened to forty fathoms, and shortly afterwards no bottom, with 120 fathoms of line. Noon—lat. observed 7° 56′ north, long. by chronometer, at 9 A.M., 111° 38′ east. I had, by daylight, reckoned to be clear of Owens Shoal, which I now believe this to be a part of, or very closely connected, for the following reasons, (see the supplement to Horsburgh's Directory, Cape 613.)—The description Horsburgh gives of its appearance under the ship, agrees exactly with what was seen from our deck, but only in extent about two miles. If connected with that which we were on, he must only have passed over a small portion of it. He gives the lat. 8° 8′ north, long. 111° 59′ east. At 9 A.M. our latitude, deduced from noon, was 7° 58′ north, and long. by chronometer, 111° 38′ east, both of us having good observations. At that time the white patches were seen from our masthead several miles to the southward. That it cannot be of less than twenty miles or upwards, in a S.S.E. and N.N.W. direction, as it is the south-west extremity of the Archipelago of shoals in the China Sea, (for anything we know as yet,) it must be of importance for ships leaving China late in the season to know its extent, if under the necessity of taking the Strait of Balabac. As the water was quite smooth and no current, I judged there was much less water where the ripple was than where we sounded; as for the bottom that was seen, we had no indication till right over it, and was always seen sooner from deck than aloft. I was anxious to sound in the ripple, but not knowing how soon we might want the boats for other purposes, did not make the attempt.

"Alexander Cameron.

"*St. Katharine's Dock, Oct.* 14, 1841." "*Com. of the ship Orleana.*"

Chinese Chops—.The reader has probably encountered in the public journals, during the late transactions between the English and the Chinese some mention of the *chops*, or official documents of the Chinese empire, and might like to know what is the appearance presented by such documents. In the Museum of the Asiatic Society there is a "chop," the translation of which would probably not be a little curious. It is a kind of permit or license granted to the captain of the ship Sarah, for him to depart from Canton with his cargo for England. This was the first ship which left Canton for England after the throwing open of the China trade in 1834; having on board a cargo of silk, valued at £400,000. The chop is written on a sheet of paper, measuring about 3 feet by 2, and the writing with which the sheet is covered, in the Chinese character, consists of an enumeration of the qualities, importance, and virtues of the official personage who grants it; a statement of the reasons why the "stranger-person" is desirous of going to his own country; and an acknowledgment that all proper dues had been paid, and observances fulfilled by the captain, and a permission to him to set sail.

Races of Lough Strangford.

The following information will be useful to persons unacquainted with the dangerous nature of the tide at the entrance of Lough Strangford:—

Mr. Editor.—It may, perhaps, be interesting, if not useful, to some of your readers to learn from authentic experiments, the rate of the tide in the narrows of Lough Strangford,—a port rendered so formidable by the Races off it as to be almost universally shunned even as a harbour of refuge. The tides at this port have been variously stated to run from eight to ten knots at the springs, and the frightful race which occurs upon the bar with southerly winds would certainly lead to that conclusion, but by actual experiment in the narrowest, and most rapid part of the channel (between the Perches off Bankmore); and on a day when there was a rise of thirty feet at Liverpool, I found its rate something under seven knots, on both flood and ebb, as shewn below.

In order to give it a fair trial I steamed into the strongest part of the tide, and regulated the speed of the vessel so as to keep two marks abreast precisely in one, and then by means of the patent log hauled in at each hour, determined the rate at which the water was passing the vessel. We did the same on both flood and ebb, and as this confirms several former experiments, of steaming into this Lough against spring tides, made without the log, I have no doubt that any vessel with a fair wind, that will sail eight and a half knots, would enter the Lough at any time, provided she could steer through the Race.

In making these experiments I found a singular effect produced upon the engine whenever the vessel came near the whirls, at the edge of which the tide runs strongest. Until we came into these places the speed of the vessel was 9·2 knots, and the revolutions 22, but directly we entered the eddy the revolutions were brought down to 19, and even 18, and the vessel could not be forced one foot over the tide which ran only 6·9 knots.

The vessel in which these experiments were made was 186-horse power; but on a former occasion in one of only 100-horse power whilst steaming in the same place, the engines suddenly stopped, and at the moment, I had no doubt, but that they had broken down, whilst the engineer as fully expected the ship was aground, as she had all the steam, and had been going eight knots. During the enquiry into this somewhat alarming occurrence (for anchors are of very little use in the stream of Lough Strangford,) the water boiled up from beneath the vessel, the engines started at their usual speed, and the vessel went on as before, but taking a broad sheer, which carried her out of the eddy.

These whirls, as they are called, should therefore be carefully avoided by both steamers and sailing vessels, on account of the disadvantage to their progress; the probability of damage to the engine from being so suddenly arrested; and the terrible yaws they occasion, in spite of the helm, in a channel little more than a cable in width.

Experiments on the Tide in Lough Strangford.

Date.	Time.	Rate.				
May	Last quarter ebb	6·00	knots	28 feet	rise at Liverpool	In the fairway
June.	Three-quarter "	4·4	"	25	"	of the
"	Three-quarter "	5·1	"	26	"	Channel.
Sept.	Half flood	6·92	"	30	"	Between
"	Half ebb	6·6	"	30	"	the
"	Three-quarter ebb	6·4	"	30	"	Perches.

I am, &c.,

To the Editor, &c. F. W. B.

Biographical Memoirs.

Admiral Sir Thomas Williams was promoted to the rank of Captain in Nov. 1790, and at the commencement of the war, was appointed to the Lizard, of 28 guns, in which he captured several of the enemy's privateers. On the 30th August, 1795, when in command of the Unicorn, he captured the Comet Dutch brig of war, mounting 18 guns. The day before, in company with the Diana and Seahorse, he also took an East Indiaman and a South Sea Whaler, both of which had been conveyed from the Cape of Good Hope by the Comet. At day break on the morning of the 8th of June, 1796, Captain Williams being on a cruize to the westward of Scilly, in company with the Santa Margarita frigate, gave chase to two large frigates and a corvette. At 4 p.m. the sternmost ship, finding it impossible to escape, bore round to take the Santa Margarita, in which he was foiled by a skilful manœuvre of her Commander, who laid his ship most ably alongside the enemy, and in less than twenty minutes compelled him to strike. The other frigate seeing the fate of her companion, endeavoured to get the weather gage of the Unicorn; but by the judicious and seamanlike conduct of Captain Williams, his attempt proved unsuccessful. The parity of sailing in the two ships was such, that a running fight was kept up for ten hours, when our officer had the good fortune to close with his antagonist; a sharp contest ensued, and continued with great impetuosity for 35 minutes, when, on the smoke clearing away, the enemy was observed to have dropped on the Unicorn's quarter, with the intention to cross her stern, and gain the wind; this manœuvre of the Frenchman's was most skilfully defeated, by Captain Williams instantly throwing his sails aback, by which means the ship gathered stern way, passed the enemy's bow, and resumed her former position. The action was now renewed with fresh vigour, but it lasted only a few minutes, when after much bravery and good seamanship had been displayed on both sides, the enemy's ship having her mizen-mast alone standing, surrendered. She proved to be La Tribune, commanded by Commodore Moulson, pierced for 48 guns, but only 44 mounted, of 332 men, 37 of whom were killed, and 15, including the Commodore wounded. The Unicorn's compliment of 251 men, was considerably weakened by

the absence of a Lieutenant, and several of her best seamen, in a prize recently captured; the total number of her crew in this action may therefore be fairly stated as not exceeding 240, of whom not a man was hurt. Soon after his return to port, Captain Williams received the honour of Knighthood, as a reward for his gallant conduct. Sir Thomas was promoted to the rank of Rear-Admiral in October, 1809, and between that period and 1814, hoisted his flag successively in the North Sea, at Lisbon, in the Channel fleet, and as Commander-in-chief at the Nore. In January 1815, he was made a Knight Commander of the Bath, and subsequently was nominated a Grand Cross of that Order. In January 1833, he was appointed Commander-in-Chief, at Portsmouth, where he continued during the customary period of three years. The deceased was the benevolent founder of the Royal Naval Female School, towards which object he munificently presented £1000.

VICE-ADMIRAL SIR PATRICK CAMPBELL was fourth son of Mr. John Campbell, of Melfort, Argyleshire, was born in 1773, and was consequently in his 68th year. He entered the navy in 1788, since which time until after the peace, he was constantly engaged in the service. At the capture of the Cape of Good Hope in 1795, then a lieutenant, he commanded a light company of seamen, and in 1799 covered the landing of a division of the army in Holland. When in command of the advance of the British vessels in the Zuyder Sea, he gallantly cut out four of the enemy's gun-boats. In 1800, then in command of the Dart sloop, he carried by boarding, and brought out of the harbour of Dunkirk, the French frigate Desire of 40 guns, for which brave action he was posted, and received the order of the Bath. The late admiral was also actively employed in the command of the Unite and Leviathan in the Mediterranean, from 1807 to 1812. In 1825 Sir Patrick married Miss Wauchope, youngest daughter of Mr. Andrew Wauchope, of Niddrie, Marechall, N.B., by whom, we believe, he leaves a family. His commission bears date as follows,—Lieutenant, Sept. 25, 1794; Commander, Sept. 4, 1797; Captain, July 11, 1800; Rear-admiral, July 22, 1830; and Vice-admiral, June 28, 1838. He was nominated a Knight Commander of the Bath in April, 1836.

CAPTAIN SIR H. LE FLEMING SENHOUSE, KCH., was third son of the late Mr. W. Senhouse, surveyor-general of Barbados, and married in 1810 to Miss Manley, daughter and co-heiress of Vice-Admiral Manley. He entered the navy at an early age, and when midshipman, was present at the capture of Surinam, in 1799; and in 1809 assisted at the debarcation of the army at Martinique. Throughout the last American war he was actively engaged, and in 1813 he gallantly defended his sloop, the Martin, when attacked by an American flotilla, when aground at the mouth of the Delaware. The deceased captain was appointed to the command of her Majesty's ship the Blenheim, 72, in 1839, since which he has been employed in the China seas. In consideration of his services he was nominated a Knight Commander of the Hanoverian Guelphic Order, April 13, 1832. His commissions bear date, Lieutenant, April 9, 1802; Commander, June 2, 1809; and Captain, Oct. 12, 1814.

ADMIRALTY ORDERS.

Admiralty, 28th Aug. 1841.

The Lords Commissioners of the Admiralty, referring to the 4th Sect. of the 6th Chap. Art. 5, of the Instructions for Her Majesty's Service at Sea, in which it is directed that the Captains of Her Majesty's Ships are not to allow any person to Smoke Tobacco in any other part of the ship than the place appropriated for Smoking, are pleased to direct, that the Captains and Commanding Officers of Her Majesty's Ships and Vessels do give most positive orders that no Smoking shall on any account be allowed in any part of the Ship except the Galley.

By Command of their Lordships,
J. PARKER.

Admiralty, Oct. 11th, 1841.

The Lords Commissioners of the Admiralty are pleased to direct that in case of any Soldiers, who may be "Temperance Men," being embarked on board Her Majesty's Ships or Troop Ships, or in Transports or Freight Ships, such Non-Commissioned Officers and Privates shall be allowed double rations of Sugar, Cocoa, and Tea, for each ration of Spirits stopped.

The Captains of Her Majesty's Ships and Troop Ships, and the Masters of Transports and Freight Ships are therefore hereby directed, at the end of the Certificates signed by the Commanding officer of Troops embarked, as to the accuracy of the Lists of the Troops victualled, to add the following words "Except for the Men marked Z from whom, as Temperance Men, there has been stopped rations of Spirits, and to whom there has been issued, in lieu, a double allowance of Sugar, Cocoa, and Tea.

By command of their Lordships,
SIDNEY HERBERT.

Promotions and Appointments.

(From the Naval and Military Gazette.)

Whitehall, Sept. 21st.—The Queen has been pleased to grant to Sir E. Lyons, Bart. Her Majesty's Minister Plenipotentiary to the King of Greece, Captain in the Royal Navy, and Knight Commander of the Royal Hanoverian Guelphic Order, her royal licence and permission, that he may accept and wear the insignia of the French Order of St. Louis, which his late Most Christian Majesty the King of France was pleased to confer upon him, in approbation of his services at the siege of the Castle of Morea.

Whitehall, Oct. 9th, 1841.—The Queen has been pleased to direct letters patent to be passed under the Great Seal, granting the dignity of a Knight of the United Kingdom of Great Britain and Ireland unto Henry Huntley, Esq., Commander in Her Majesty's Navy.

Special Promotions for the late operations in China.

Her Majesty has been pleased to appoint Captain Thomas Herbert of the Royal Navy, Companion of the Most Honourable Military Order of the Bath, to be a Knight Commander.

Admiralty, Oct. 15*th*—With reference to the Gazette of the 8th inst., the following Naval Promotions have taken place, dated on that day:—

Lieutenants to be Commanders.

W. W. Chambers, H. Coryton, J. M. Hayes, P. W. Hamilton, and W. C. Wood.

Mates to be Lieutenants.

R. L. Bryan, I. N. T. Sanley, H. Need, W. S. Miller, G. S. Tayler, T. W. Purver, and W. T. Bate.

PROMOTIONS.

Lieutenants—J. Moore, J. Wood.

Masters—T. Hancorn, F. W. Paul, H. Brehaut.

Surgeons—T. H. Keown, J. Stewart, C. D. Steel, J. Bower, MD.

APPOINTMENTS.

Captains—G. F. Rich (1823) to *Queen* for the flag of Vice-admiral Sir E. Owen, *v.* H. I. Codrington, CB., (1836), to *St. Vincent*—J. T. Nicolas, CB., KH., (1815) to *Vindictive*.

Commanders—M. A. Slater (1837) *a*, to *William and Mary*—J. B. L. Hay to *Queen*—C. Bell (1830) to *Hazard*.

Lieutenants—R. Bullen (1830) to *Belvidera*—Ellicombe to *Niagara*—Jas. Johnstone and W. Butler to *Ardent*—W. Wilson (1841), T. McGregor (1827), and G. Johnson to *North Star*—H. Dumorsq (1838) to *Caledonia*—G. Ogle (1838) to *Cambrian*—P. Parkhurst (1841) L. Browell (1828), and D. Buchan (1841) to *Vixen*—F. Lowe (1837) and C. G. Rigge (1838) to *Devastation*—G. Smythe (1834) and F. W. C. Hickey (1841) to *Volage*—J. C. Johnston (1827), R. A. Oliver (1838), J. P. Thurburn (1841), and E. J. B. Clarke (1841) to *Thalia*—A. P. Ryder (1841) to *Belvidera*—Thos. Edwards (1834) and P. Parkhurst (1841) to *Styx*—H. G. Morris (1837) and E. R. Power (1839) to *Harlequin*—J. C. Robinson (1838) and E. M. Noble (1841) to *Serpent*—E. B. Nott (1829) to *Syren*—J. B. West (1831) and C. B. Hamilton (1840) to *Aigle*—J. A. Abbott (1830) H. Eden (1837) and J. Hunt (1841) to *Dido*—H. Probyn (1841) to *Isis*—David Robertson (1841) to *Hazard*—A. Boyle (1830), Caffin, (1838), Cannon (1832), J. J. Robinson (1834), Wellington (1834), Fisher (1833), and Hamilton to *Queen*—M. Peppin (1837) to *Volage*—J. Boxer (1840) to *Niagara*—H. Stewart (1840), W. Carr (1821), F. A. Ellis (1836), J. H. Gennys (1838), W. G. Luard (1841), to *Vindictive*—N. F. Edwards (1827), G. Wodehouse (1824), C. H. Binsted (1824), and C. C. Grey to St. Vincent—G. T. M. Purvis (1823) to *Cambrian*—E. Tatham to *Spartan*.

Lieut. F. J. F. Henslow (1829) is appointed to Travers' Naval College, Windsor, in the vacancy occasioned by the death of Lieut. W. Jones, *a*, (1799) Governor.

Masters—J. Doidge to *Ardent*—R. Wilson (1828) to *Viper*—J. H. Ashton and J. G. Mugford to *Devastation*—W. Dillon to *Cruizer*—J. F. Boxer (1838) to *Volage*—J. Tonkin (1832) act. to *Formidable*—W. D. Mainprise (1841) to *Aigle*—F. Edington (1841) to *Harlequin*—W. J. B. Hilliard (1841) to *Serpent*—J. Dor (1840) to *Syren*—R. C. Allen to *Vixen*—F. W. Paul (1840) to *Hazard*—J. C. Giles (1826) to *Queen*—C. Pope (1829) to *Vindictive*—J. Warner (*a*) to *Ferret*.

MATES—R. W. Alcock to *Excellent*—H. Trollope and Davis to *Ardent*—R. Hopkins and R. L. Reynolds to *Warspite*—A. P. Arkwright to *Pantaloon*—F. L. Selwyn, H. D. Blanckley, and B. Rowles to *Devastation*—W. J. Everett to *Caledonia*—T. B. Stewart to *Avon*—G. A. Pharys to *Driver*—G. T. Graham (1841) to *Belvidera*—H. Clarke to *North Star*—H. M. Kinsman (1833), F. J. Hornby (1841) and W. P. S. Morton (1838) to *Vindictive*—D. B. Dawes (1822) and L. R. Place (1836) to *Styx*—W. Horton (1839), J. M. Boyd (1832), and J. C. Snell (1834) to *St. Vincent*—H. Bayley to *Malabar*.

SECOND-MASTERS—E. Fox to *Apollo*—W. Roberts to *Dasher*—G. Hodges to *Warspite*—J. Colman to *Volcano*—Stokes to *Merlin*—J. Gallon to *Illustrious*—J. Garner to *Rhadamanthus*—H. Dormer to *Carron*—J. Scarlet and H. Jackson to *St. Vincent*.

SURGEONS—H. Baker (1840) to *Ardent*—D. Geddes to *Belvidera*—A. Sanderson (1837) to *North Star*—T. Kittle to *Cleopatra*—A. Stewart (1816) to *Powerful*—J. Naulty (1838) to *Vixen*—R. L. Birtwhistle (1836) to *Volage*—J. Elliott to *Devastation*—W. Kent (1838) to *Aigle*—C. K. Nutt (1840) to *Harlequin*—J. Lambert (1838) to *Serpent*—W. Roy to *Syren*—D. G. Miller, MD. (1838) to *Styx*—R. Douglas (1831) to *Thalia*—A. Donoghoe (1825) to *Dido*—W. C. Watt, MD. (1819), and to be Deputy-Inspector of Hospitals to *Queen*—J. Drummond (1814) to *St. Vincent*—A. S. Allen (1828) to *Vindictive*—J. W. Bowler (1837) to *Hazard*—T. H. Keown (1841) to *Snake*.

MASTERS-ASSISTANTS—W. C. Pyper to *Illustrious*—R. W. Ward to *Cambrian*—G. Stabb to *Belvidera*.

MIDSHIPMEN—T. B. Crawford to *Excellent*—P. W. Darnell, W. Perrier, and B. Beale to *Spartan*—A. Percy to *Warspite*—E. D'Æth to *Dido*—D'Aguilar to *Vindictive*—P. R. Couch to *Caledonia*.

VOLUNTEERS 1st Class—R. Dawkins to *Harlequin*—G. D. Murray and E. H. Hatchwell to *North Star*—J. Barnard to *Madagascar*—J. E. Riley to *Isis*—H. E. Dickson to *Hastings*—R. M. Moorman to *Spartan*—J. Mackie, T. W. Pratt, T. W. Haydon, and Malcom to *Vindictive*.

ASSISTANT-SURGEONS—T. Wells to *Ceylon*, for service of Malta Hospital—Dr. A. Battwell to *Viper*—G. Butler to *Driver*—J. Bolland to *Volcano*—Dr. W. Wood to *Ardent*—J. Bowman to *Tweed*—W. White to *Thalia*—C. D. Steel to *Rhadamanthus*—J. H. Paterson to *Devastation*—J. Simpson, MD. to *Dido*—J. Bower to *Lynx*—W. F. Carter to *St. Vincent*—S. E. Sandys and R. Fulton, MD. to *Vindictive*—W. Lawrence to *Pantaloon*—M. Burton, MD. to *Ferret*.

PURSERS—W. Stanway to *Ardent*—J. Millingham to *Styx*—J. H. Greaves to *Spartan*—J. Harshaw to *Vixen*—J. Grant to *Devastation*—J. H. Cook to *Volage*—K. Sutherland to *Harlequin*—J. Brickwood to *Syren*—W. Freeman to *Aigle*—Clatsworthy to *Thalia*—J. Bullman to *Dido*—W. A. Harries to *Hazard*—R. A. Godson to *Serpent*—G. V. Oughton to *Queen*, until he joins Sir E. Owen—J. Cole to *Vindictive*—J. Nicholls to *Hastings*.

CHAPLIN—Rev. J. Falls to *St. Vincent*

NAVAL INSTRUCTOR—J. Mallard to *St. Vincent*.

CLERKS—H. Pinhorn (in charge) of *Heroine* v. — Bateman, whose appointment was cancelled at his own request, on account of ill-health—H. R. Cole to *Skylark*—E. Whitehead to *North Star*—F. Rutter to *Warspite*—J. C. Aldridge to *Forester*—C. Hore to *Driver*—D. Clow to be secretary's clerk in Sir E. Codrington's office—G. Munro to *North Star*—C. Jenkins to *Spartan*—Barclay to *Volage*—E. E. Vidal to be secretary to Sir E. Owen—R. A. Clarke and C. Lyne, add. to *St. Vincent*—R. Curgenven to *Cambrian*—H. S. Dyer to *Excellent*.

COAST GUARD.

LIEUTENANT—J. Clark to the Coast Guard at Romney.

The following, from the *Naval and Military Gazette*, is a list of appointments to commands made by the late Admiralty during the month of August, 1841.—

FLAG-OFFICERS.

Vice Admiral Sir Charles Adam (date of appointment, Aug. 17, 1841,) to be Commander in chief in the West Indies.

Rear Admiral Sir Francis Mason (date of appointment, Aug. 23, 1841,) to be second in command in the Mediterranean.

Captains.	*Ships.*	*Dates of Appointment.*
Michell . . .	Inconstant . .	4th Aug.
Warren . . .	Magicienne . .	4th

Captains.	*Ships.*	*Dates of Appointment.*
Erskine (Flag Captain)	Illustrious	6th Aug.
Burgoyne	San Josef	6th
Ellice	Astræa	6th
Smith	Syren	9th
Hon. G. F. Hastings	Harlequin	10th
Lord John Hay	Warspite	17th
Foote	Madagascar	18th
Yates	Pique	18th
Sir John Marshall	Isis	18th
Boxer (Commodore)	Magnificent	18th
Sartorius	Malabar	19th
Chads	Cambrian	20th
Tucker	Iris	20th
Hon. C. G. J. B. Elliot	Spartan	21st
Lord C. Paget	Aigle	23d
Sir E. T. Troubridge	Formidable	23d
E. N. Troubridge	Wanderer	23d
Shirreff	Poictiers	24th
Smart (Flag Captain)	Howe	25th
Hon. George Grey	Belvidera	28th
Ommanney	Vesuvius	28th
Sir J. E. Home	North Star	30th
Harmer	Driver	30th
Hon. H. Keppell	Dido	30th
Sir W. Dickson	Volage	30th
Boyes	Vixen (steam vessel)	30th
Scale	Serpent	30th

Total, Two Flag Officers and Twenty-nine Captains and Commanders.

The following is a list of appointments made by the late Admiralty between May 1 and July 31, 1841:—

Rear Admiral Sir William Parker (date of appointment, May 12, 1841,) to be Commander in chief in the East Indies.

Rear Admiral Thomas (May 5, 1841,) to be Commander in chief in the Pacific.

Captains.	*Ships.*	*Dates of Appointment.*
Hon. Byron C. F. P. Cary	Bittern	5th May
J. Tucker	Dublin	26th
Byron	Champion	10th June
Larcom	Scout	10th
Louis	Stromboli	11th
Gostling	Electra	25th
Glasse	Nimrod	28th
Barnett	Thunder	18th July
Russell	Ardent	24th
Pring	Thunderer	28th

Total, Two Flag Officers and Ten Captains and Commanders; and also in Sept.:—

Henderson	Victory	2d Sept.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

COLUMBIA, (st. v) 11th Oct. arr. at Portsmouth from West Indies, 13th sailed for Woolwich.

ELECTRA, 18, Com. Gostling, Sept. left Portsmouth for

FERRET, 10, Lieut. W. S. Thomas, 19th Sep. arr. at Plymouth, 41 days from Sierra Leone, 22nd moved into harbour.

FORESTER, 3, Lieut.-Com. G. L. Norcock, 17th Sep. arr. at Plymouth, 20th moved into harbour.

HAZARD, 18, Com. Hon. C. G. J. Elliott, 19th Sep. arr. at Portsmouth.

IMPREGNABLE, 110, Capt. T. Forrest,

8th Oct. sailed for Malta with flag of Rear-Admi. Sir F. Mason.

RINGDOVE, 16, Com. Hon. K. Stewart, 20th Sep. arr. at Portsmouth from West Indies, 4th Oct. paid off.

STYX, Capt. A. T. E. Vidal, 17th Oct. arrived at Portsmouth from Woolwich. Sailed with Sir C. Bagot, Governor-General of Canada.

PORTSMOUTH—*In Harbour*—St. Vincent, Victory, Queen, Illustrious, Excellent, Royal George, yacht, Warspite, Madagascar, Vindictive, Belvidera, North Star, Driver, Hazard, Rapid, Pantaloon, Viper, Alban, Apollo.

PLYMOUTH—*In Harbour*—Caledonia, San Josef, Malabar, Belleisle, Cambrian, Spartan, Ferret, Nightingale.—*In the Sound*—Tortoise convict-ship.

DEPTFORD, Oct. 14th—Sailed the Beaumont, with emigrants; the Reward with stores for Jamaica; the Maitland troopship, Lieut. Hemswhoth, agent for Sydney. Remain, the Royal Emperor, Richard Webb, and Somersetshire, for Sydney. The Boyne transport is discharged.

ABROAD.

ACTAEON, 26, Capt. R. Russell, 16th May left Lima for Valparaiso.

ANDROMACHE, 26, Capt. R. L. Baynes, CB., 7th July left the Cape for Mauritius.

BENBOW, 72, Capt. H. Stewart, Sept. at Suda.

BRITANNIA, 120, Capt. J. Drake, 22d Sept. left Malta for England.

CALCUTTA, 84, Capt. Sir S. Roberts, CB., 7th Sept. at Beyrout.

CARYSFORT, 26, Capt. H. B. Martin, 10th Sept. arr. at Malta.

CHARYBDIS, 3, Lieut. De Courcy, 12th Aug. at Jamaica from Carthagena.

CLIO, 16, Com. T. G. Freemantle, 9th Aug at Rio.

CURLEW, 10, Lieut.-Com. T. C. Ross, 2nd July arr. at Cape from Mozambique.

CYCLOPS, (st. v.) Capt. H. T. Austin, 28th Sept. left Malta for Constantinople.

DAPHNE, 18, Com. J. W. Dalling, 29th Aug. left Smyrna, 14th Sept. arr. at Smyrna.

DUBLIN, 50, Capt. J. J. Tucker, 8th Sept. arr. at Madeira, 9th sailed for Rio.

FAIR ROSAMOND, 2, Lieut.-Com. A. G. Bulman, 12th Sept. at Antigua.

GANGES, 84, Capt. B. Reynolds, 17th Sept. at Tunis.

GRECIAN, 16, Com. W. Smyth, 9th Aug. at Rio.

HASTINGS, 72, Capt. J. Lawrence, CB., 22d Sept. arr. at Malta.

HECATE, (st. v.) Com. H. Ward, 21st Sept. left Malta for Syria.

HOWE, 120, Capt. R. Smart, 25th Sept. left Malta for Syracuse.

IMPLACABLE, 74, Capt. E. Harvey, 17th Sept. at Tunis.

INCONSTANT, 36, Capt. F. T. Michell, 31st Aug. left Constantinople for Beyrout, 9th Sept. at Beyrout.

INDUS, 84, Capt. Sir J. Stirling, 7th Sept. arr. at Malta. 25th sailed for Syracuse.

LOCUST, (st. v.) Lieut.-Com. J. Lunn, 14th Sept. left Malta for the Levant.

MAGICIENNE, 24, Capt. R. L. Warren, 22d Sept. at Therapia.

MEDEA, (st. v.) Com. F. Warden, 27th Aug. at Alexandria, 9th Sept. left Constantinople.

PARTRIDGE, 10, Lieut.-Com. W. Morris, *(a)* 15th Aug. left Bahia for Rio.

PHOENIX, (st. v.) Com. J. Richardson, *(b)* 9th Sept. at Beyrout.

POWERFUL, 84, Capt. G. Mansell, 18th Sept. arr. at Malta.

REVENGE, 76, Capt. Hon. W. Waldegrave, 17th Sept. at Tunis.

RODNEY, 92, Capt. R. Maunsell, 14th Sept. off Alexandria.

ROLLA, 10, Lieut.-Com. C. Hall, 22d July arr. at the Gambia from Sierra Leone, 27th sailed for Sierra Leone.

ROSE, 16, Com. P. Christie, 29th Aug. left Pernambuco for Demerara.

SAPPHO, 16, Com. T. Fraser, 12th Sep. at Antigua.

SAVAGE, 10, Lieut. J. H. Bowker, 20th Sept. arrived at Malta from Gibraltar, 27th sailed for Tripoli.

SCOUT, Com. J. Larcom, 19th Sept. arrived at Gibraltar, 21st sailed for Malta.

SOUTHAMPTON, 50, Capt.
26th Aug. at Rio to sail for the River Plate.

SPIDER, 6, Lieut.Com. J. O'Reilly, (a) 9th Aug. at Rio.

STROMBOLI, Com. W. Louis, 2nd Sept. arrived at Malta.

TALBOT, 26, Capt. R. F. Stopford, 11th Sept. arrived at Smyrna from Malta 12th sailed for Bosphorus.

TERMAGANT, 10, Lieut. Com. H. F. Seagram, 28th July arrived at the Gambia, 29th sailed.

TYNE, 26, Capt. J. Townshend, 22nd Sept. arrived at Malta.

VANGUARD, 80, Capt. Sir David Dunn 7th Sept. arrived at Malta from India, 25th sailed for Smyrna.

VERNON, 50, Capt. W. Walpole, 4th

Sept. left Malta for Corfu, 9th arrived, 22nd remained.

VESTAL, 26, Capt. J. Parker, 16th Sept. at St. John, Newfoundland.

VESUVIUS, (st. v.) Lieut. Com. E. Ommaney, 21st arrived at Malta.

VICTOR, Com. C. C. Otway, 5th Aug. left Jamaica for Honduras.

WANDERER, Com. Troubridge, 28th July arrived at the Gambia, 29th sailed.

WASP, 16, Com. Hon. H. A. Murray, 9th at Beyrout.

WEAZLE, 10, Lieut.-Com. W. Edmon- 7th Sept. arrived at Corfu, 22nd remained.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 10th of August at Vauxhall, the lady of Lieut. Gill, RN., commanding the Victoria Revenue cutter, of a daughter.

On the 5th of Oct., at Southville, the lady of Lieut. Miles, RN., of the Hydrographic office, Admiralty, of a daughter.

Marriages.

At Greenwich, Com. Lord H. Russell, son of his Grace the late Duke of Bedford, to Henrietta Marianne, daughter of Adml. the hon. Sir R. Stopford, GCB., Governor of Greenwich hospital.

At Holloway, on the 21st of Sept. Lieut. Robinson, RN., to Jane, eldest daughter of T. Ely, Esq., Hornsey.

At Birmingham, Oct. 5th, R. Pugh, Esq., Strand, to Eliza, widow of the late Lieut. Barrs, RN.

Deaths.

At Burwood House, Surrey, Oct. 10, Adml. Sir T. Williams, GCB., in the 80th year of his age.

At Leamington, Vice-admiral Sir P. Cambell, KCB.

On the 13th of June, on board H.M.S. Blenheim, in Hongkong bay, Capt. Sir H. Le Fleming, KCH. The immediate cause of this lamented officer's death was a violent fever brought on by great physical and mental exertions, and by exposure to the sun during the late expedition to Canton.

At Canton, Mr. Brodie, master RN., and commander of Rattlesnake; Dr. Wallace, surgeon of Conway; and Lieut. Fitzgerald, of Modeste, from a wound he received in the leg, off Canton, on 24th May.

At Brompton, on Sept. 17th, aged 62, Frances Juliet, relict of the late Captain Sarmon, RN.

At Stoke, near Plymouth, Oct. 21st, Lieut. Smith, RN.

At Warleigh, Elizabeth, daughter of the late Captain Barton, RN., and neice of Sir R. Lopez.

On Aug. 19th on board surveying ship Beacon, Lieut. Helpman, first assistant surveyor of that ship: he was a valued officer and a most efficient surveyor, and the service sustains a great loss by his death, which resulted from a fever contracted by exposure in the execution of his duty. His remains were interred on an island in the Port Nousa, Isle of Paros; and over his grave has been erected a monument by the officers and ship's company, as a token of their regard for a regretted shipmate.

At Cheltenham, aged 81, Martha, the widow of Capt. J. Lys, RN., of Ridgway, Hants.

Lately, on the Coast of Africa, aged 31, Mr. Mottley, assistant surgeon, of Ferret.

At Douai, in France, after a long and painful illness, Amelia, wife of Mr. W. Bailey, and daughter of J. Bates, Esq., master RN., and secretary to the Royal Yacht squadron.

At Exmouth, on the 10th Oct., Lieut. R. Edevean, RN., in command of the Revenue cutter Nimble, aged 42.

In the West Indies, on the 13th Aug. last, Lieut. Dawson, RN., first lieutenant of Astrea.

At Walmer, Sept. 30, Mary, the wife of J. S. Short, of the 4th King's Own regt. fourth daughter of the late Vice Admiral Sir Thos. Harvey, KCB., in her 23rd year.

Lately, at Hasler hospital, aged 40, Mr. Sheppard, purser RN., late of ship Larne, son of Mr. Sheppard, High-street, Portsmouth, from disease produced by service in that ship on the coast of China, from which he had been recently invalided.

At Plymouth, on the 7th of October, J. C. Carruthers, Esq., surgeon, RN., aged 52.

On the September 30th, Ann Slater, daughter of the late Capt. W. Day, RN.

H.M.S. Fairy.—We understand that a picture of the town of Harwich, representing the ill-fated Fairy entering the harbour, will be published in a few days, from the pencil of our celebrated marine artist Huggins.

METEOROLOGICAL REGISTER.

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

From the 21st of September to the 20th of October, 1841.

Month Day	Week Day.	Barometer, In inches and Decimals		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Tu.	30·00	29·92	60	66	58	68	NE	E	5	5	o	bc
22	W.	29·66	29·67	58	65	55	66	S	SW	4	4	bcp (1)(2)	bc
23	Th.	29·64	29·64	56	60	52	62	SW	SW	4	4	bcp (1)(2)	bcp (3)
24	F.	29·54	29·54	56	59	51	60	SW	SW	3	3	or (1)	bcp (3)(4)
25	S.	29·45	29·47	55	59	49	62	SW	SW	4	4	bcp (2)	bcp (3)
26	Su.	29·46	29·46	53	59	48	62	S	SW	2	3	bcp 2)	bcp (3)
27	M.	29·50	29·59	54	63	51	64	W	W	4	4	or (1)	bcr 4)
28	Tu.	29·38	29·32	56	61	55	63	S	SW	6	6	qor (1)(2)	od (3) (4
29	W.	29·18	29·33	57	62	54	63	SW	SW	9	9	qr (1)	qbc
30	Th.	29·22	29·22	58	64	54	65	SW	SW	6	6	qr (1)	o
1	F.	29·43	29·47	56	63	51	64	W	W	3	3	bcp (2)	bcp (3)
2	S.	29·76	29·79	53	59	46	60	NW	NE	2	2	bcr 1)	bcm
3	Su.	29·77	29·79	51	54	43	56	NE	N	3	4	or 2)	or 4)
4	M.	29·70	29·56	53	57	49	59	NE	N	2	3	bcr 1)	or (4)
5	Tu.	29·15	29·05	50	56	48	57	SW	SW	4	5	bcr (1)	bcr 4)
6	W.	28·82	28·85	48	55	43	56	SW	W	3	4	bcr 1)(2	or (3)
7	Th.	28·99	29·06	49	55	44	56	S	SW	2	3	bc	bcr 4)
8	F.	29·15	29·28	50	53	45	55	SW	SW	3	4	bc	op (2)
9	S.	29·73	29·78	49	53	45	55	SW	W	2	2	or (2)	bc
10	Su	29 85	29·75	51	54	43	55	SW	SW	3	3	bcd 2)	od 3) (4)
11	M..	29·60	29·65	52	58	49	59	SW	SW	4	5	bcp (1)	bcr (4)
12	Tu.	29·25	29·30	49	52	45	54	S	NW	3	3	or (2)	op (3)
13	W.	29·85	29·99	48	52	42	54	NW	NW	4	4	bc	o
14	Th	29·84	29·84	57	59	49	61	SW	W	4	6	or (1)	qbc
15	F.	29·50	29·62	54	56	52	57	SW	W	7	7	qo	qo
16	S.	29·50	29·34	50	57	42	58	SW	W	6	4	qor 1) (2)	qo
17	Su.	29·47	29·45	55	61	43	63	W	W	4	4	od (2)	bcp (3
18	M.	29·70	29·88	52	54	49	55	NW	NW	10	7	qbc	qbcr (4)
19	Tu	29·52	29·86	47	47	44	48	NW	NW	6	5	qor (1)	bc
20	W.	29·90	29·80	45	51	38	52	SW	SW	3	6	bcp 2)	qbcp (3 4)

September—Mean height of barometer = 29·769 inches; mean temperature = 58·7 degrees; depth of rain fallen = 3·86 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

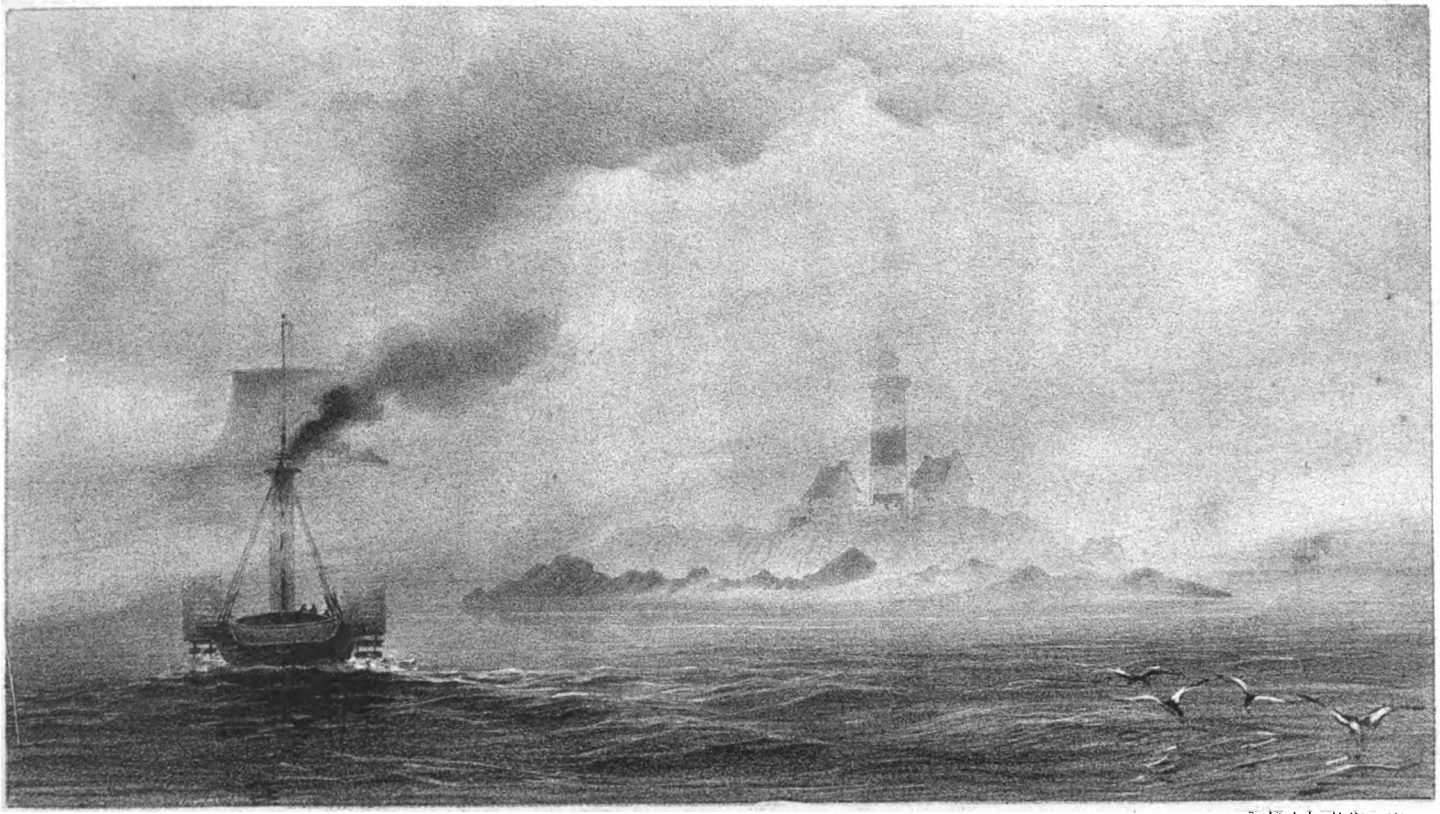
The great length of the despatches from China, and that of our own Hydrographical notices, have occupied so much of our space, that we have been obliged to defer our usual notices of charts and books until our next number. We shall then, we hope, clear off with our publishing friends.

The question of the Bonetta Rock shall be also disposed of in our next. In the mean time our best thanks are due to four of our correspondents, for their trouble in sending us the day's works of the Charlotte's log, all of which shall appear, unless we receive objections. Our correspondent at Hull will, we are sure, exercise his patience.

We are much obliged to Capt. Beechey, RN., (Lucifer,) for his useful contribution.

Our old and valued friends Capt. Miller and Capt. Hunter, have our best acknowledgments for their recollection of us, even from the *Antipodes*.

A revolving light has just been placed on Hesselo Island, in the Cattegat. The particulars in our next.



THE BOSPHORUS.—*Anchorages of Therapia and Tophana.—By Mr. G. Wright, master of H.M.S. Dido.*

January 15th.—Sailed from Vourla for Constantinople:—winds strong from the north-east, obliged us to anchor occasionally in the Gulf of Smyrna and Myteline Channels, in the narrow part of which we found the winds extremely light and baffling, for eight hours of the day, until the evening, when a smart breeze sprang up and enabled us to clear Cape Babé, and we anchored in Basika Bay at noon of the 18th. Weighing next day with a light southerly breeze, which, after a struggle with the remains of that from the northward, gradually freshened, we passed the Dardanelles rapidly; the wind increasing ran us up to the Sultan's Valley, in a little more than twenty-four hours.

From the strength and duration of the previous winds, I should imagine that the waters of the Bosphorus were very much below their ordinary level, for, in a day or two after our arrival, I observed a rise of five or six feet, abreast of the ship, occasioned no doubt by the check opposed to its escape, by the northerly breeze. The bay of the Sultan's Valley is comprised between the point of Unkiar Skalessi, and that forming the northern extreme of Beicos, on which is the Sanite or Health Office, and, with which, all vessels from the Black Sea, are required to communicate. The soundings are somewhat irregular, varying from seven to fourteen fathoms, at two and a half cables from the shore, falling suddenly into twenty-five, thirty, and forty fathoms, which, I may here observe, is the case at all the anchorages in the Bosphorus. The bottom is composed of a mixture of sand, mud, and weed, and is not particularly good, but by placing the northern anchor *well inshore*, there is no fear of its starting. We moored with sixty fathoms on each anchor north-east and south-west, best bower in ten fathoms, and outer anchor in twelve and a half, and rode out several hard gales without once altering our position, so completely were we sheltered from the sea and strength of current. When moored, the British ambassador's flag-staff at Therapia, bore N.W.b.W., Yenikoi Point S.S.W., Mole in the Valley E. ½ N., and nearly end on, and the monument of Unkiar Skalessi, on with the north-west angle of the guard-house below it. The latitude was found to be 41° 7′ 34″ north, longitude 29° 2′ 56″ east.

Here are two streams of water, but as it does not keep particularly well, we usually sent to Beicos, where, as it is obtained from a fountain at some distance from the beach, *a long hose* is required. Wood may be had in convenient size or quantity. Beef scarce and inferior;—poultry and fruit in abundance. The prevailing winds are between north and east, though in January and March we had occasional breezes from south-east and south, but seldom of any strength or duration. Much snow fell during February and March, reducing the temperature to 28½°, and indeed, until the middle of April, it scarcely rose beyond 45°.

From this, to the 20th of May, we had a series of cold sleety fogs, which, entering from the Black Sea in the evening, and during the

night, hung about the heights, particularly on the European shore above Therapia and Buyukdere, until the sun nearly attained the meridian, when they were dispersed for a few hours. These damp fogs are said to be productive of disease among the inhabitants, and many generally remove to Pera, which is much less affected.

The current, at all times strong in the stream, was observed to be much influenced by the force and continuance of the winds, varying from five to three knots. Southerly winds invariably offering a considerable check, though upon a sudden change to the north-east, I have noticed such an accumulation of water from the Black Sea, that being obstructed in its passage by the projecting points of Yenikoi, &c., a strong counter current has set in the opposite direction, extending at times nearly half way over from the Asiatic shore. These occurrences are particularly favourable for vessels bound up, and indeed, excepting in the height of winter, when the wind and current is generally strong, I am of opinion that a small craft, if well handled, may nearly always work up, by short tacks, and keeping within the verge of the stream on the European side, until abreast of Yenikoi Point, when a stretch must be made over to the opposite shore, where an eddy in favour will be found, and by passing inside the banks, you may reach the narrows above Buyukdere, without any material opposition. As we had occasion to assist several British vessels off these shoals, and which, from the frequency of the occurrence, have acquired the name of the English Banks, I examined it, and found their northern end in five fathoms to commence at about two and a half cables, south-west of the point, at the foot of the Giants Mountain. The farm on its summit being open to the right of the first quarry near the beach, E.N.E., and an old round tower standing upon the high land, on the European shore, a ship's length open to the eastward of the walled fort, N.N.E. ½ E. The black gate of the Russian ambassador's palace at Buyukdere, will then be on with the Scala, and central window N.W. ½ W., thence they extend in a southerly direction nearly three-quarters of a mile, to within two cables of the north point of the bay of the Sultan's Valley, or, as it is sometimes called, (to commemorate that celebrated treaty,) the point of Unkiar Skalessi, varying in breadth from sixty to thirty yards, and in depth seven fathoms to six feet, and is composed of a dirty kind of sand and gravel, with a few detached stones. At this extreme, in seven fathoms, the gable end of the British ambassador's palace, at Therapia, nearly touches the south part of a remarkable grove of trees behind it, W.S.W., and the Sante or Health Office, is just open of the point E.S.E. Nearly in the centre, they are divided by a channel of about thirty yards broad, running east and west, and having ten to thirteen fathoms, thus forming two distinct patches, and which, in the event of a ship grounding near them, might be available, otherwise they could be scarcely turned to any account.

It is only in the event of working to the southward, or having a scant easterly wind, that a necessity would arise for borrowing on the bank. Indeed there is no actual necessity, for the channel between it and Therapia affords ample room for a ship under any circumstances. But I have observed several vessels from the northward skirting the western edge of the shoal, as if apprehensive of falling to leeward, upon the spit off

Yenikoi Point, forgetting that the current there generally sets out so strong to the south-east, that they could hardly fail in avoiding it. To the eastward of the bank there is a very good channel and anchorage, having from five to fifteen fathoms, and ships from the northward, with a commanding breeze, may use it with great advantage, as the current is at all times much less there than in the stream. Coming from the Black Sea with a northerly wind, this route will shorten the distance, and prevent a necessity for anchoring at Buyukdere or Therapia; should this wind fail; these places have deep water, and are awkward to get out of in light winds. To sail west of the banks from the northward, bring the old Genoese Castle on with the signal-post in the fort, at the foot of the Giants Mount north-east, until the southernmost high clump of trees on the shore, opposite Yenikoi Point, comes nearly on with it S. ½ E., or if they are obscured, until the round tower above the walled fort, on the European side, comes open to the westward of its flag-staff, (N.b.E,)—run thus, until the Health Office, (a range of red buildings,) is well open of Point Unkiar Skalessi S.E.b.E., when you may haul over for it, as ships generally communicate here. In working to the southward, stand no nearer the bank than twelve fathoms, nor open the round tower to the eastward of the flag-staff in the walled fort, as it is very bold to, shoaling suddenly to five and two fathoms. Wishing to pass through the eastern channel from the northward, haul round the point of Giants Mount as close as you please, in eight fathoms, to avoid the current which here sets strong towards the shoal. Stand into the little bay of Quarries, until Yenikoi Point comes open a ship's length of the Point of Unkiar Skalessi, which will lead through in twelve to eight fathoms. Ships from the southward, will have no difficulty in observing these directions, in a contrary manner.

A master of a ship from the Black Sea in the winter, not wishing to delay at Constantinople, and particularly in want of water, will find a good and well sheltered anchorage off the Sultan's Valley; and if he takes a boat to Constantinople, arranges his business with the consul, he will on his return, find the ship watered, the British man-of-war rendering any little assistance required, and he clears the Bosphorus without having to anchor off the Golden Horn, which, from its depth of water, frequently crowded and exposed state, is, at this season of the year very objectionable.

The anchorages in the Bosphorus are, generally, on the European side very safe, and well out of the way of the current, being protected by the projecting points, and having an easy depth of water, and as it is indisputably the best shore to keep when bound to the northward, opportunities for anchoring are always present, in the event of light or contrary winds. Off Arnaoutki, in the little bay just within the Devils current, we reached into ten fathoms, the soundings varying from this to twenty fathoms inshore of us, where we lie, being but a continuation of a bank to the westward, the shoal part of which being neatly and conspicuously built over, an extremely good custom, and which is generally observed here.

The anchorage off Tophana is by no means good in the winter months, from the depth of water, indifference of holding ground, and violence and irregularity of the currents, which, under the influence of

of strong variable winds are frequently very capricious. Twenty vessels within a cable's length of each other may be in as many different positions, and as they seldom take the trouble to moor, or give their vessels a good scope of cable, it is no uncommon thing to see them ranging about and fouling each other in a serious manner, to the manifest danger and destruction of spars, bulwarks, &c., and this is considerably increased during the prevalence of southerly winds, which knock up a short and troublesome sea.

This may in a great measure be avoided by taking a berth more to the northward, nearer the Turkish men-of-war, or hauling at once into one of the tiers at the entrance of the Golden Horn; or if from circumstances connected with the disposition of cargo, &c., obliged to stay a few days off Tophana, it is decidedly best to moor, and the more out of the fairway of ships entering or leaving the Horn the better. All the additional trouble this may occasion to a merchant ship, will be amply repaid by the security derived from so necessary a precaution.

Men-of-war generally moor off the arsenal. We were in twenty fathoms, open to the southward; Galata tower W.b.N.; Seraglio point S.b.E.; and the new palace N.E.b.E. The best water about here is usually obtained from Scutari.

As the summer advanced, we shifted our berth out to the northward, to avoid the great heat, and chance of fevers said to be generated in the vicinity of the Valley. We moored north and south in thirteen fathoms off the southern extremity of the English Bank, it bearing N.b.E. ½ E., two cables; Giants Mount, north-east; Yenikoi point, south; British palace W. ¼ S.; and found this removal of great advantage, inasmuch as we were quite open to every quarter, and often enjoyed a cool and refreshing breeze, when the anchorage off the Valley was perfectly becalmed. During this period the thermometer ranged from 80° to 86½°, seldom below 78°; and though in the middle of the day we generally had a fine breeze, yet the air was very moist and hot.

From the delays, vessels bound up, are subject to, by the prevalence of northerly winds, it is rather surprising that steam-tugs are not yet established in these waters. The Turkish government finding many gladly avail themselves thereof, are now allowing their small steamers to tow ships out to the Black Sea, for which they charge at the rate of half a dollar per ton, which must be infinitely preferable to loitering about the Bosphorus for many weeks waiting for a fair wind.

WINDS AND WEATHER *on the north and north-west coast of New Holland.—By Com. J. C. Wickham, of H.M.S. Beagle.*

(Concluded from p. 726.)

THAT part of the coast of New Holland, from Cape York to Cape Van Diemen, and extending as far south as the parallel of 12° south latitude, may be said to be within the limit of the east and west monsoons as at a short distance from the coast, these periodical winds will be found to blow with great regularity.

Near the land, the easterly monsoon sets in between the first and middle of April, and the westerly monsoon in October, and sometimes not until November. At a distance from the land they are probably more regular, as the changes of the monsoons are said to take place about the first week in April and October.

In the month of July, we found the winds between Booby Island and Port Essington, fresh from the eastward, veering at times to E.S.E., and occasionally to south-east, but rarely to the northward of east. Close to the land these winds are not so constant, but take more the character of land and sea breezes, and the nights are mostly calm; this we found to be the case during part of the months of July and August, while at anchor in Port Essington;—the general course of the winds during that period was as follows. A little before sunrise a breeze sprang up from south, or S.S.E.; which gradually became more easterly as the sun approached the meridian. Sometimes in the middle of the day, it was light from the eastward, or calm, and at other times veered gradually to north-east, from which quarter there came a fresh sea breeze every afternoon. This breeze lasted until sunset, and at times later, but the nights were always calm.

We experienced similar winds between Melville Island and Port Essington, but being a short distance from the land, the nights were not calm, although the winds were very light.

During the easterly monsoon it is difficult to get to the eastward, as at a few miles from the land the current is always running to the westward, and runs strong past the projecting points; but by contriving to be near the land at daylight, (at which time the wind is always more southerly,) something may be gained.

At Port Essington, the rainy season can scarcely be said to set in before the middle of November, there is then squally dirty weather, with rain from the westward and north-west, and at this season there are at times heavy squalls from south-east, accompanied by rain, thunder, and lightning.*

In November, 1839, Port Essington was visited by a violent hurricane, that wrecked her Majesty's ship Pelorus, although perfectly land-locked, and several miles shut in from the sea.

This hurricane seems to have been confined to a very narrow belt, and to have travelled from W.b.N. toE.b.S., or perhaps more east and west. Between west and W.N.W. is the usual direction from whence the wind blows during the westerly monsoon. It was felt in the vicinity of Sandal-wood Island, near which a vessel that sailed from Timor lost her topmasts, and suffered considerable damage. It did not reach Timor, nor was it felt by the Beagle, then in Victoria River, 3½° to the southward of Port Essington, although we experienced a great deal of unsettled weather about that time, and which I supposed to be occasioned by the westerly monsoon, having set in upon the coast to the northward.

I was told at Timor, that that island was rarely, if ever subjected to such visitations; but that at a short distance to the southward of it, hurricanes were sometimes felt, perhaps one in four or five years.

* In 1838, the westerly monsoon set in at Port Essington in the first week in November,—there had been no rain before that.

The great extent of the north-west coast of New Holland, and lying as it does between the parallel of 12° and 22° south latitude, no doubt subjects it to a variety of wind and weather, that is not experienced on the north coast, although on that part of it, north of the parallel of 15°, there is probably much similarity.

As I cannot speak with certainty of the winds and weather that prevail on this extent of coast, at all seasons of the year, the following remarks will be confined to such portions of it as were visited by the Beagle, and will apply only to the particular seasons in which she was employed there.

To the eastward of the meridian of 123° east longitude, and at a short distance from the land, the east and west monsoons will be found regular, but the easterly monsoon is very light to the southward of 13° latitude.

Between Clarence Strait and Cambridge Gulf, and during the months of September, October, November, and December, the wind during the day is a sea breeze, between north-west and west. In September, and until the middle of October, we found the wind as follows:—about sunrise, a light breeze sprang up from south-east or east, which gradually drew to the northward towards the middle of the day. In the afternoon, a sea breeze from north-west or west, becoming light towards sunset, but freshening again soon after that, and blowing a moderate and pleasant breeze between north-west and south-west all night.

During the latter part of the period, (November and December,) the winds were more constantly from the west or W.N.W., blowing from that quarter throughout the twenty-four hours, but much more moderate at night than during the day. At full and change of the moon the breezes were much stronger than at other times, and upon one or two occasions, at the time of the moon's quartering, there was a light breeze from south-east in the morning.

During the month of November the ship was at anchor, twelve miles within the entrance to Victoria River, and 65′ from Point Pearce on the sea coast. For the first three weeks of this time, the sea breeze was regular from north-west, or W.N.W., generally setting in about noon, and lasting the greater part of the night; in the mornings, and until noon, it was mostly calm, or very light winds from the northward. In the last week of this month the weather was very unsettled and squally, with much thunder and lightning and rain, the wind mostly between south-east and north-east; after which, the westerly breezes set in again, and continued until we left the coast in the middle of December.

During the whole of this period, the westerly winds did not appear to come from any distance, but to be merely local sea breezes, as they did not cause any sea upon the coast, nor did they reach far inshore; as we frequently observed smoke at no great distance from the coast, rising perpendicularly, or influenced by a light south-easterly wind, and this at times when the sea breeze was strong. From this, it would appear that the westerly monsoon had not reached so far to the southward, nor did we find, after sailing from Point Pearce, that the winds were at all steady from the westward, until we had reached to the northward of Cape Londonderry, which is in latitude 13° 45′ south.

To the northward of this, the winds were from the westward, accompanied by fine weather, during the day to the southward of that point, sometimes as far as south-west, and at night inclining to the northward of west; but generally speaking, we found the wind to the southward of west, and the current running from half a mile to a mile an hour to the north or N.N.E.

The currents between New Holland and Timor, are said to run to the westward during the easterly monsoon, and in the opposite direction with the westerly, but they seem to be influenced by every trifling change of wind, as on the 20th, 21st, 22nd, and 23rd of December, (when the westerly monsoon might be supposed at its height,) we experienced light variable winds between south-east and E.N.E., during which period the current ran to the westward, at times a knot an hour. We were then between the parallels of 11½° and 13°, south of which, we experienced winds between S.S.W. and west, until we were to the southward of the north-west Cape, when they became more southerly, and at times S.S.E., (in January.) Throughout all this period the weather was fine, and different from what was expected during the westerly monsoon.

All that part of the north-west coast of New Holland, between the north-west Cape and Cape Londonderry, appears to be very much subjected to light winds, particularly during the easterly monsoon, the strength of which is not felt to the southward of 13° or 14° of south latitude.

During the westerly monsoon, strong winds and gales from the north-west at times blow upon the coast, but they do not appear to be frequent.

The strongest winds at this season are the heavy squalls between E.S.E. and north-east, (and which may with propriety be termed hurricane squalls;) fortunately they are not of long duration, rarely lasting over two hours. They give ample warning of their approach, by the gathering of a heavy bank of clouds between north-east and south-east, and much lightning in that quarter. Appearances such as these, frequently precede the squall some days, but coming gradually nearer to the westward. The barometer shows no indication of approaching bad weather, being only acted upon by the immediate change. These squalls mostly occur in the night, or between sunset and sunrise.

During the latter part of the westerly monsoon, on that part of the coast between Cape Villaret and Point Swan, we found the weather remarkably fine, with the exception of an occasional short but severe squall from the eastward. During the day, there was generally a moderate sea breeze, between north-west and south-west, commencing in the forenoon, and lasting sometimes nearly until midnight, (on which occasions it blew strongest during the night.) During the other part of the 24th, the wind was light from the eastward, or calm. Capt. King experienced similar weather in August.

It was not until we had reached Point Swan, in latitude 16° 20′ south, that we experienced any of the bad weather that is usually met with at this season of the year, a few degrees to the northward. It commenced in the last week of January, and continued until the middle of

February, during which period there were some strong gales from th westward, between north-west and south-west, accompanied by heav rain, thunder, and lightning; but although there was a good deal dirty weather, it was by no means constant, as there were occasiona intervals of fine weather, with moderate westerly winds. This was th only bad weather on this part of the coast during the season, that coul be said to be caused by the westerly monsoon, (if we except the E.S.E squalls that do not occur in the easterly monsoon.)

While this weather lasted the easterly squalls were quite suspended, and the heavy bank of clouds that had generally been noticed in the south-east, had dispersed for the time, but after the strong westerly breezes had ceased, the weather was generally fine, and the wind mostly from some western point; there were occasional showers, and the clouds in the eastern horizon resumed their threatening appearance, bringing some hard squalls and rain from that quarter. In the middle of March, (being the time when equinoctial gales are looked for in most parts of the world,) there were two or three days of squally unsettled weather, with rain, that seemed to terminate the season of the westerly monsoon. After the first of April, the weather was invariably fine, and the easterly squalls had ceased to trouble us;—land and sea breezes became regular, and the easterly monsoon had no doubt set in to the northward, the strongest breezes now were from south-east, but generally speaking, the winds were light near the land.

It does not appear that the westerly monsoon blows with any degree of regularity to the southward of the 13th degree of south latitude, although for some degrees south of that, the weather is influenced by it, and winds between W.N.W. and south-west will be experienced; and from the appearances on many parts of the coast, there are no doubt strong gales at times, from the westward, that send in a heavy sea.

During the easterly monsoon, the weather is fine on the north-west coast, particularly in the months of May, June, July, and August. This is, undoubtedly, the best time for visiting it,—land and sea breezes are regular, and the temperature is very agreeable.

The average range of the thermometer on that part of the coast, between the north-west Cape and the meridian of 120° east longitude, during the above-mentioned period was between 75° in the middle of the day, and 60° at night, (on board the ship,) and the general course of the wind as follows, viz.

About sunrise, or sometimes a little before that, a breeze springs up between south and S.S.E., and draws to the eastward as the sun rises, rapidly increasing in strength, and between eight and eleven A.M., often blows a fiery breeze; towards noon it moderates, and rarely lasts until 2 P.M., after which there is a light breeze from north-east, which at times reaches to the north; the nights are mostly calm, or a light breeze from the south-westward. At the full and change of the moon, we found the south-easterly winds stronger than at other times; dews at times very copious.

All this part of the coast is subject to the effects of mirage, by which its outline is at times very much distorted, but generally speaking, it ceases with the strength of the breeze, and as the sun attains a little altitude. When the effect of mirage was observed in the morning, I

noticed that the winds were much lighter throughout the day than usual.

During this part of the year the atmosphere is clear, with a cloudless sky, and the coast is exempted from the violent E.S.E. squalls that are of frequent occurrence, while the sun is in the southern hemisphere, and the land consequently very much heated.

Towards the latter end of August, and in September, the winds are not quite so regular, and there are occasional intervals of two or three days of westerly winds.

That part of the north-west coast, between the north-west Cape and the 116th degree of east longitude, seems to be subject to westerly winds, at all times of the year. The prevailing southerly winds that blow along the west coast, appear to draw round the Cape, and follow the direction of the land. Between April and October, (when the easterly monsoon is blowing to the northward,) they are generally to the southward of west, or between that point and south-west; but during the westerly monsoon between west and north-west.

Upon getting to the westward of the north-west Cape, the wind becomes more southerly, and draws to the eastward of south, as the distance from the land increases, and will be found varying between S.S.E. and E.S.E.,—generally speaking, as far south as the parallel of 30° of south latitude; after which, it is mostly to the westward of south, so that ships making a passage to the southward, along the west coast of New Holland, will rarely be able to make any easting, before reaching that latitude, particularly during the summer months. In the winter, a ship may occasionally make a quick passage to the southward, if happening to be upon the coast during a northerly gale, and as all these gales are preceded by north-east winds, a sufficient offing may be gained, to enable her to run on, when the winds get to the southward of west.

On the most seasonable time for Felling Timber.

[From the Philosophical Transactions.]

The custom of felling timber in the south of England differs from that of Staffordshire, only in two things, viz.—In the time of felling, and manner of barking. It being felled here in the spring, as soon as the sap is found to be fully up, by the trees putting out, and then barked after the trees are prostrate, the sap yet remaining in their bodies; whereas there it is first barked, (in the spring as here) but before it is felled, the trees yet living and standing all the summer, and not felled till the following winter, when the sap is fully in repose.

Now in the spring season, and some time after all the trees are pregnant and spend themselves, as animals do in their respective offsprings, in the production of leaves and fruit, and so become weaker than at other times of the year; their cavities and pores being then turgid with juice, or sap, which the trees being felled at that time still remain in the pores, having no way of being otherwise spent, and then they putrify, not only leaving the tree full of these cavities, which render the timber

weak, but breeding a worm, as testified by both Pliny and Mr. Evelyn, which will so exceedingly injure it as to become altogether unfit for great stress. Now all timber felled at this time of year, whether the juices putrify, or otherwise evaporate, or dry away, is not only subject to rift and gape, but to shrink so considerably, that a piece of such timber of a foot square, will usually shrink $\frac{3}{4}$ of an inch; than which says Vegetius, nothing is more pernicious if used for the building of ships. To which Julius Cæsar adds, that though ships may be made of such moist timber, felled in the spring, yet they will certainly be slugs, not near so good sailers as ships made of timber felled later in the year.

In all which circumstances most of the ancients so very nearly agree, that none of them advise the felling of timber for any sort of use before autumn at soonest; others not till the trees have borne their fruit, which says Theophrastus, must always be proportionably later, as their fruits are ripe later in the year: others not till mid-winter: not November says Palladius: nay, not till the winter solstice, says Cato; and then too in the decrease or wane of the moon, between the 15th and 23rd day of her age, says Vegetius; or rather according to Collumella, between the 20th and the new moon. In general says Theophrastus, the oak must be felled very late in the winter, not till December, as the emperor Constantinus Pogonatus positively asserts, the moon too being then under the earth, as it is for the most part in the daytime in the first part of its decrease. And the felling of oak within those limits, they call tempestativa cæsura, felling timber in season, which they all unanimously pronounce, if thus felled, it will neither shrink, warp, nor cleave, nor decay in many years; it being tough as horn, and the whole tree in a manner, as Theophrastus asserts, as hard and firm as the heart, with whom also agrees Mr. Evelyn. If you fell not oak, he says, till the sap is in the rest, as it is commonly about November and December, after the frost has well nigh nipped them, the very saplings thus cut will continue without decay, as long as the heart of the tree.

And the reason of this is briefly given by Vitruvius, because the winter air closes the pores, and so consequently consolidates the trees; by which means the oak, as he and Pliny both express it, will acquire a sort of eternity in its duration; and more so if it be barked in the spring, and left standing all the summer, exposed to the sun and wind, as is usual in Staffordshire and the adjacent counties; by which they find, by long experience, the trunks of the trees so dried and hardened, that the sappy part in a manner, becomes as firm and durable as the heart itself.

And though this way of barking and felling of timber were unknown to the ancients, as perhaps it is to all the world except those few counties, yet they seem not unacquainted with the reason of the practice; for Seneca observes, that the timber most exposed to the cold winds, is most strong and solid, and that therefore Chiron made Achilles' spear of a mountain tree, Homer also tells us that the spear of Agamemnon was made of a tree so exposed; for which Didymus gives for reason, that being continually weather beaten, it becomes harder and tougher. And Pliny says expressly as much for the sun, as they for the wind, viz:—That the wood of trees exposed to the sunshine is the most firm and durable; for which reason also it is, that Vitruvius prefers the timber on the south of the Appenine, (where it winds about and encloses

Tuscany and Campania, and strongly reflects the constant heats of the sun upon it, as it were from a concave,) incomparably before that which grows on the north side of the same hill in the shady moist grounds; and his reason is, that the sun not only exhales the superfluous moisture of the earth, whence the trees are supplied in such shady places with too great a quantity, but in great measure the remaining juices out of the trees themselves, rendering the timber of them the more close, substantial, and durable; which certainly it would do much more effectually, if the bark were taken off in the spring of the year, as in Staffordshire where the people use this method for their timber, though but for private uses. And much more should it be done for so public a concern as the building of ships, where tough and solid timber is much more necessary than in ordinary. There is indeed an act of Parliament, 1 Jac. I, chap 22, which forbids felling timber for ordinary uses, in consideration of the tan; at any other time than between the 1st of April and last of June, when the sap is up and the bark will run. To which I readily answer, that perhaps the legislators did not consider that the bark might be taken off in the spring, and that the tree would live and flourish till the ensuing winter; so that though the tree be not felled till the winter solstice or January following, yet the tanner is not at all defeated of his tan, but has it in due season. And in that very act of parliament there was an exception of the timber to be used in ship building, which might be felled in winter, or any other time; as I am told all the ancient timber remaining in the Royal Sovereign was, it being still so hard that it is no easy matter to drive a nail into it.

It is true indeed that the barking or peeling the tree standing, is somewhat more troublesome, and therefore rather more chargeable, than when they are prostrate; and that it is likely people have therefore usually felled their timber as well for shipping as other uses, in the spring of the year, for the sake of the more easy and cheap barking it, rather than any thing else. It is also true, that timber is harder to fell in winter, it being then so compact and firm that the axe will not make so great an impression as in the spring; which will a little increase the price of the felling and its sawing afterwards; but how inconsiderable these things are in comparison of the great advantage of this manner of felling is self-evident.

The greatest objection that can be urged against this practice, is, that if the timber be not felled till mid-winter or January, where it grows in coppices and woods, they cannot perhaps enclose their young sprigs so soon as some may imagine needful, and therefore they may be backward to fell their timber at that season. To which I answer, that the timber so felled in woods or coppices may be easily carried off, before the second spring, and so the prejudice be small; but what will quite remove this inconsiderable difficulty, is, that perhaps it may be expedient, that no timber whatever, growing in woods or coppices be at all bought for the King's yards, because that timber growing in such shady places, and so fenced from sun and wind, as timber in woods for the most part is, cannot be so good as that which comes from an exposed situation, such as it usually has in forests, parks, and hedge-rows, or open fields; where at least it is indifferent, if not better for the pro-

prieter, that it be felled in winter, when the grass and corn is off the grounds, than in the spring itself. And the officers designed for that purpose may buy all their timber under the conditions of its being felled in winter, after the bark has been taken off in the spring in due time.

Extract of a letter from Mr. Anthony Van Leuwenhoeek to the Royal Society, concerning the difference of timber growing in different countries, and felled at different seasons of the year.

"As to the difference of timber felled in winter from that felled in summer, the common opinion is, that the former is stronger and more lasting, as being more close and firm; but his own opinion is, that there is no difference, except in the bark and outermost ring of the wood, which in the summer are softer, and so more easily pierced with the worm. Wood consisting of hollow pipes, which both in summer and winter are full of moisture, they do not shrink in the winter, and therefore the wood cannot be closer at one time than another, for otherwise it would be full of cracks and clefts. The sudden and unexpected rotting of some timber, he conceives to proceed from some inward decay in the tree, before it was felled; having observed all trees begin to decay at first in the middle or heart of the tree, though possibly the tree may stand and grow for near 100 years afterwards and increase in size all along."

He says he was once of opinion that trees growing in good ground, but increasing slowly, were the best and strongest timber; and that those trees which in few years grow large were the softest and brittlest, the contrary to which, on enquiry of experienced workmen he found to be true, and instances in elm of 80 years growth, which was eleven feet in circumference, and proved excellent tough timber.

The age of trees is to be known by the number of rings to be seen when the tree is cut across, in each of which is one circle of large open pipes, now the fewer there are of these large pipes, the stronger the timber is; hence those trees that make the largest growth in a year must be the closest and strongest; and therefore those trees that grow in warm countries grow fastest, and are the best and toughest timber, which he confirms by Riga and Dantzic oak, which is of slow growth and proves spongy and brittle timber; whereas the contrary is observable in English and French oak, which grows faster, and is excellent timber.

THE WEATHER.—1. *Its Changes;* 2. *The design of the Circular Hurricane;* 3. *The Variable Winds of the North Atlantic.—Considered by Stormy Jack.*

THE general natural system of the variations of weather throughout the world, appears so complicated, that, considering the lapse of ages which have succeeded the first essays to explain the seeming mystery, it is not a matter of wonder that the idea of its being beyond the intelligence of man to fully comprehend, should have been entertained. The apparent contrarieties, anomalies, and observed capriciousness with which its workings are controlled, seem to defy the utmost ingenuity of the most indefatigable meteorologist to account for satisfactorily. What faith

then is to be placed in the predictions of a Moore, a Murphy, or any other divining almanac computor?

The changes often follow in such rapid succession as to be truly astonishing; yet how few in the busy round of human occupations, duties, pastimes, and pleasures, allow but an instant of thought on the causes of such phenomena? But "thinking men" or such as are imbued with a spirit of observation, know that as a whole; that is to say, in the aggregate results, the system of nature is, and cannot be admitted to be otherwise than perfect. In the details, in the periodic returns, indeed, we are apt to imagine that we detect irregularities; and hence the source of the perplexities which assail those who deal only with the abstract question: to our wonder, however the philosopher, the man of enlarged views, who surveys the whole panoramic scheme, dealing first with particulars, next, amplifying into generalization, and finally calculating the amount of evidence deducible from facts, informs us that a balance is always struck with precision, in a lunation, a season, or a year. And it has been thought that a recurrence of similar weather takes place at long intervals, such as in the period of nineteen years, or what is scientifically termed a lunar cycle; or, in twenty-eight years, which is the solar cycle.

Our theories appear to be more or less faulty even in the present state. Nothing else, indeed, could be expected. The period required to draw just conclusions, and the close and incessant habit of observation necessary for obtaining data for that purpose, are so urgent, that even though an individual could be found possessing perseverance and determination enough to afford his undivided attention to the object; his entire life would be considered too short, to bring the whole matter into a state approaching toward perfection. But by a wise distribution of labour, which might be greatly lessened by a universal association of enlightened and scientific societies of Europe and America, and their Colonial associates in other parts of the world, so that the duties of observation and registering may devolve on many, instead of being dependant on one or two only, there is scarcely a question that meteorological science, which has been so long neglected, would very soon begin to ascend toward that station to which it is deservedly entitled.

It may be observed, however, that upon the whole, we possess a tolerable clear and satisfactory outline of that portion of the general system which embraces the action and apparent causes of most of the particular winds:—1. Those which are so far steady throughout the year, as to be deemed *perennial*. 2. Others so nearly regular in their change as to be termed *alternating*. 3. Those whose recurrence are looked for with a degree of certainty, and are called *periodic*. 4. Land and sea breezes which are designated *reciprocal*. 5. Circular storms, or *hurricanes*.

With respect to the uncertain winds, or those which have obtained the name of general or variable, as much could not have been said or advanced hitherto, and indeed scarcely yet, as the inquiry has only began but a very short time.

The old phantasie of these winds being occasioned by the reaction of the atmosphere from the rotation of the earth, will, probably, give place

to a more rational system, which has some better support than hypothetical reasoning, and abstract ideas to uphold it.

Of the causes of calms at sea, too, we know little or nothing. Of their occurrence often in the very heart of the perennial winds; and sometimes preceding gales, but oftener after them, we have no scientific treatise. Indeed there is a gap in our general literature which requires to be filled up by some competent writer, and which work would yield, in the interest it would create, to no other scientific composition; we allude to the phenomena of the ocean.*

From time immemorial lunar influence has been enlisted as an agent in the production of the changes of weather; such is, indeed, at the present day, all but universally acknowledged; yet to those who have devoted close attention to fact and circumstances, it would appear to be very questionable. Nevertheless, the general opinion does not create surprise in them, the supposition being extremely natural, and readily presenting itself to the mind as a very apparent solution of the physical phenomena of which we are speaking. The consideration that the tides of the ocean owe their origin to the moon's attraction; and changes of weather not unfrequently happening at the change of the satellite's phases, could not fail of becoming otherwise than remarkable, and to press upon the mind of even the most superficial observer, the idea that the planet also exerted an influence on the fluid air.

But, if this were true, there ought to be at least a corresponding regularity in the times of change, allowing for a want of minute precision of effect, from local external causes. Now, all those who have paid attention for a lengthened period, and daily, and hourly, recorded the circumstances as they occurred, are aware that no such thing can be admitted.

Without referring to more distant observations which have been published, that bear upon this point, we may, perhaps, advantageously instance the north-easterly breezes, which have been prevalent with very trifling interruption from the 17th of February to the 3rd of April,† which exceeds a lunation and a half. It seems improbable, therefore, that the moon's changes have any direct, or sufficiently powerful influence over the atmosphere, as her attracting power has over the waters of the ocean.

We give here the result of these slight changes for the satisfaction of the reader. On the 17th of February, 1840, the wind shifted from the south-westward to the eastward; the full moon was on that day. On the 22d of March the wind veered from the eastward to the northward and north-west, and back to the north, four days after the full moon; after vacillating thirty-six hours it fixed in the north-east again. On the 30th it veered to the south-west, four days after the last quarter.

* Considering the manifest utility of such a work in the hands of youth, intended for the Naval profession, which no expense should be spared to bring to the highest possible state of perfection, I really think the Government might advantageously offer a premium, for the best composition on this subject. There is little doubt of such a work meeting a very extended sale, if the price fixed should be easy.—S. J.

† The vacillation from north-eastward to south-westward and back, continued until the 21st of May, when the westerly winds set in steady.

On the 1st of April, it backed to south-east and east, one day preceding the new moon.

Month.	DM.	Wind.	Barom.	Thermometer. Max.	Min.
February	16	South-west	29·75	53°	46°
	17 to 29	East to North-east	30·3 to 30·50	60	37
				50	23
March	1	North-east to East	30·30	38	27
	21	N.E. to N.W.	30·48	46	30
	22	N.W. to N.	30·30	52	37
	24	North-east	30·22	45	27
	30	South-west	29·87	57	41
April	1	South-east to East	29·60	55	38
	4	North to North-east			
	5	N. to N.W. & S.W.	with	rain.	
May	14	S.E. to S.	rain.		
	15	S.W. to W.S.W.	with	showrs	
	19	East. Such a degree of cold followed the fall of rain that the E. wind resumed.			
	21	West. Set in and continued up to 3d June.			

Here we see no corresponding regularity shown; although from the approximation there appears to have been some slight, but indirect, influence exerted, which perhaps may be owing to an alteration in the barometric condition of the atmosphere consequent on the tides, and in connection with the electrical state of the air. Besides, if the lunar influence existed, ought we not to expect that the force or strength of the wind, as well as its variation, would follow a similar law of gradation which the tides observe in their height, according as the satellite is in her perigee or apogee? I have known the easterly winds to continue for twelve or fourteen weeks with little variation in strength. If the moon really exerts any influence on the weather, as it is said to do on the human frame and mind, as also on vegetables, certainly we have not yet succeeded in making this plain, by pointing out the interfering influences which operate in divesting it of a regularity of action.

Indirectly, perhaps, by means of the tides, it may be admitted that the moon's attractive power has a partial effect on the atmosphere; but unquestionably it does not work alone, and without auxiliaries seems to be powerless. The change of weather, induced by the spring-tides, appears to be principally confined to the directing of the vapours, incumbent over the ocean, inland by fluvial attraction; the increase of wind which takes place at such times, being, probably, attributable to electrical action. It seems apparent that the barometric state of the atmosphere must be affected in channels and estuaries where the rise is considerable; it is, therefore, probable, that the agents act in unison when changes occur; and that no alteration takes place when singly exerted. This is the natural conclusion, or otherwise we should experience a regularity in the changes which would leave little to be sought for; but as the variations of weather are not always coincident with the reciprocations of the tides, at springs and neaps, and we can obtain no means for anticipating the simultaneous action of the different agents which

produce the effects, the prediction of what will happen, seems to be, at present, a matter which our intelligence and acute observation cannot arrive at. But I do not mean to pronounce it as utterly impossible, although we may have little expectation of its speedy realization.

A remarkable recurrence of rain takes place in the north part of Somerset during spring-tides, and the prevalence of southerly and south-west winds, after a lapse of about four or five hours, from high water in the Bristol Channel. I was a long time puzzled to account for this circumstance, but at last the idea struck me spontaneously, when not thinking of the subject, that the difference of time in the high water of the Bristol and English Channels was the cause; I have, therefore, no doubt that the recurrence of the showers is occasioned by the flood being later in the former than the latter, the elapsed time agreeing, and the direction of the winds being such as to convey the vapours across the land.

Lord Bacon says that, a man would do well to carry a pencil in his pocket, and write down the thoughts of the moment. Those that come unsought are commonly of the most value, and should be secured, because they seldom return. The spirit of this plan I have long adopted whilst musing on any particular subject, and, indeed, sometimes without fixing the ideas on any. Such thoughts as arise, and appear to be useful in the elucidation of any point; and these often present themselves spontaneously, I immediately write down, having always at hand, whilst in the house, pen, ink, and paper for that purpose. In many instances I have set down to reason out facts, yet without success; but, have found what I had been puzzling myself about at a moment when the mind was in a quiescent state, without the shadow of a thought flitting across it; and the idea has come suddenly as though it had been produced by some magical agency, which like the effect of the solar ray upon sympathetic paper, leaves a visible trace, that unless immediately attended to soon vanishes. Perhaps all persons, except the most giddy and volatile are susceptible of such impressions, but it is probable that those who are habitually disposed to thoughtfulness, and grapple with any subject in downright earnest, are more likely to be accommodated by this strange, if not mysterious impulse of the mind.

In two years attentive register of the winds, and the variations of weather, I have some remarks on the facts as they occurred, which would seem to confirm the pilots' and fishers' observations on this head.

The slight interruptions in the steadiness of the easterly winds of the spring, to which I have alluded, in the south-western part of England, may probably, in some measure be thus accounted for. I consider the changes as mainly, if not solely, dependant on the temperature of the air over those parts of the island bordering on the Atlantic; and that the westerly winds which effect the interruption, are regressive. The outline of the process is as follows: an unclouded sky, with a low thin haze, usually attends the easterly wind, and the sun's rays being unobstructed, and a vast portion of the land's surface being newly ploughed up, the absorption of heat is thereby facilitated. The luminary's transit over the equator necessarily increases the temperature to the northward; and this heat of the lower atmosphere of the land, slowly, but progressively increases towards a maximum over that of the

western ocean; at the same time the source of the easterly winds is daily becoming more inert from the very same cause, but is subject to fluctuations from supervening causes. When, therefore, the temperature over the south-western coasts exceeds that over the sea to the westward, then a movement of the air next nearest the land takes place, and is regressive, as well as slightly progressive; the gentleness of the easterly wind being insufficient to repel it. If it happens to be spring-tides at the time, the vapours will be brought inland, rain follows, evaporation becomes active, the temperature is lowered sufficiently to suspend the movement of the air from the western ocean, and the easterly wind, which had not shrank far back, and being still colder than the land air, resumes its ascendancy, and so on, until supervening causes are sufficiently matured to effect a steady supremacy of the western wind.

It has been observed, that the easterly wind sometimes at this season becomes suddenly augmented in force. This may, perhaps, arise from the melting of the ices and snows, and the activity of evaporation, which would have the effect of increasing the movement of the air from that quarter.

It seems highly probable that on the eastern portions of the island these unsettled westerly winds are not felt; nor further westward than from one to five hundred miles from the Lizard; and that the extent of the easterly wind over the western ocean, will in some measure be regulated by its force; when that is feeble, it is natural to suppose that its range cannot be far from the land; and when strong, that it may reach quite across to America. But there are intervening obstacles to the fulfilment of the latter, of which we know nothing on this side of the Atlantic.

From undoubted facts we learn a curious circumstance that ought to engage the close attention of seamen. During the spring of the year 1839, when the easterly breezes were brisk over this island, and uninterrupted in their domination, the ships homeward bound from the southward, and from the westward, experienced westerly and south-westerly gales until their arrival near to the entrance of the English Channel, when they were met by the opposing easterly wind. I have experienced this unexpected, and, at the time, provoking change; indeed it repeatedly occurs both to the outward and homeward bound vessels, but passes unheeded, without so much as a single attempt being made to account for it!

And here we cannot help observing that a manifest indifference is displayed by seamen to such matters, which are, not only of interest to them as professional men, but which are of considerable importance in navigation. Of what use it may be asked, is the intelligence of their minds, if they will not exercise it upon occasions of this sort? It is not to be supposed, indeed, that they are qualified to afford a strictly philosophical explanation of the causes of such phenomena; but there are many, it may be admitted, among so large a class, who are capable of reasoning, not unscientifically, on the subject, and from which, if no decisive conclusion can be drawn, an approach towards the truth may be obtained. At all events, the exercise of talent in this way would relieve the profession of a rather discreditable apathy; and be instrumental in disseminating a spirit of emulation for observation, which, if

it brought no accession to our knowledge, would assuredly afford pleasure and gratification to the individuals who followed it up. If philosophers are too closely engaged with weightier matters to trouble themselves about the minutiæ of such facts, surely we are warranted in overhauling these ourselves, in the best way we are able, so that, in some measure, we may not be left solely dependent on these aristocratic masters of science; but by our own exertions endeavour to relieve our profession of a discreditable ignorance? At all events, it is probable, that no one would rise up to dispute the right which every man lays claim to of thinking for himself, and of submitting his opinions for discussion. For, assuredly it would come with a very bad grace from those who are gifted with superior talents to contemptuously sneer at the essays of the humbler practical man to elucidate physical phenomena, which the others will not be at the pains to do for him.

But, let us enquire why these two winds—the easterly and the westerly—blow toward a line, and stop short when arrived there. I have reasoned out the question with all the attention which I was capable of bestowing upon it; and although it may appear by no means easy of solution, and is susceptible of different explanations, I shall venture to add my own ideas on the subject, without, however, presuming to advance these as the correct ones: they may, perhaps, whether right or wrong, be of use in leading to enquiry, without which I cannot expect to advance.

Of the effect of temperature in producing wind there is abundant authority; and there are few writers who dissent from that theory. Briefly then, it appears to me that the western parts of England and France may be considered as the line of attraction for the colder oceanic air on either side, and to which line the movement of the atmosphere easterly and westerly is directed. In using the word *easterly*, I do not mean to fix the course of the wind to the cardinal point from its source, as it may originate in a north or north-east vein of fluent air, and curve in its prolonged course.

As a general fact, the western side of a continent or of an island, in the temperate zone, enjoys a higher degree of temperature than the opposite parts; but I shall not stop here to enquire the reason of this.

Admitting the proposition, it ought to follow that, the two winds, whatever number their force may be of, should be quite, or nearly equal, so as to balance each other; for upon this point hinges the capacity for mastery, that is to say, the strongest will drive back the weakest, and it is only from some intervening cause or causes that any alteration takes place, and the dominance of the one or the other becomes established for any length of time.

A great deal of close observation, extended, as well as local, is yet required before these intervening causes can be fixed. I can however, merely hint here, that the fall of snow or its melting in the east or north-east, and the drift of the barrier ice, may be the causes of the brisk movements of the air, from these directions; and the fall of rain, with electrical discharges in the south-west and west, may give rise to the other changes, in concert with the absorption of heat by the land, &c.

It sometimes happens that we experience very fine settled weather and gentle airs, for a considerable time, comparatively speaking, in a

climate which, from the position of the land, is so subject to variation. We may be assured on such occasions that, all the concurrent causes which produce changes, are nicely balanced in power, and that within an extended circuit of many miles an equilibrium of the air has been attained from that circumstance. An interruption of this agreeable state of the weather, may no doubt first commence locally, but I imagine that it as frequently originates at a considerable distance, in some instances gradually, in others suddenly. And this difference will perhaps serve as a clue, to guide us in determining whence the origin of the change; for, if gradual, granting that the unrestrained operation of the sun increases the temperature around any given place, by absorption and radiation of heat, we may reasonably assume that the change has commenced locally, and the contrary if it should be sudden; analagous in effect to the difference observed in floods of large rivers which respectively flow from lakes, or from fountain heads.

In the first case, the rise of the waters, technically the "fresh," will be gradual, in the other, sudden; especially if the sources be in mountainous lands, and the fall or declension of the bed of the stream be great. These signs of distinction are of valuable use to the traveller, in drawing conclusions when complete investigation is denied him; and they are worthy of the attention of the seaman also.

In like manner, pebbles rounded by attrition from the action of the surf, and the flowing waters of a torrent, or a rapid river, are easily distinguished the one from the other, supposing these to be picked up at a distance from the sea, or from land streams, by simply observing whether they be globular, or oval and flattened. In the first instance they appertain to a sea-beach; in the second, to a river or torrent, the action of the water upon the material being different. On a strand the pebble is rolled upwards and downwards, and assumes eventually the shape of a globe, from the abrasion of its angular points by its neighbours as well as from the acquired action in the bed of a stream. The propellant force having no refluent motion, the pebble slides along in a continued course, and is occasionally turned over abruptly, rounding its edges, against the stationary rocks which lie in its course, as also by close contact with its travelling companions. It may be often remarked, however, that the sea-pebbles are not globular, but egg-shaped;* this

* On some occasions upon examination, I have found also that on particular beaches, a degree of flatness is formed on one side of the pebbles. This may be expected on those strands which are not steep, and where the water for some distance out is shallow. All these points, though not very important, are worth knowing,—it is just as well that the seaman should fill up the blank spaces in his mind, as let them lie empty,—it is an immateriality which he need not be apprehensive of overcharging,—there is no fear of repletion there! This facility which is afforded the traveller, in determining at once whether stones of the sort alluded to, pertain to fresh or salt water deposit, may be also of use to the seaman when on an unfrequented coast, in search of a river or stream of fresh water; as the flat pebbles brought down by the freshes will be distributed on the strand, near to the outlets whence they escaped. These different effects are of course the natural consequence of the dissimilarity of the mechanical actions of the waves of the sea, and of the floods combined with the disposition of the beaches and channel beds of the streams. But there is a certain regularity running through all the various systems of nature, which directs the attention at once to correct inferences. Hence the facility with which the botanist recognizes the class, &c., of a strange plant, whose fructification

difference I imagine to proceed from there being a paucity of pebbles where the ovate ones are found; so that the abrasion goes on regularly on their length only, there being a want of neighbours to round the ends.

But, to return to the changes of weather. During the winter some remarkable discrepances certainly occur with respect to temperature, and which are exceedingly perplexing. In these cases, however, we think that the causes are not alone, if at all, to be looked for locally, but at remote distances. As I have given my ideas on the point, in another paper (in the hands of the Ed.) I shall not stop to discuss them here, adding merely, that, the violence or progressive force of a wind when powerful, and whilst the originating cause is actively continued, will neutralize the effect of difference of temperature and reverse the general principle, by warm air flowing into that which is colder.

In every climate, even in that of the Arctic Regions, the seasons are under some degree of variation in their general character, in different years. The expectations of seasonal rains; of warmth, or high temperature; of cold; of storms; of calms; of electrical discharges; of dry weather; are repeatedly, according to the finite calculations of man, out of place, either premature or in retardation.

I have had no means hitherto for fully and clearly detecting the causes of these, to us, seemingly strange vicissitudes; and, perhaps, I never shall, there being a limit fixed to the human understanding that "as mere mortals we should not aspire to be gods." But, if our natural sagacity and intelligence fail us in the elucidation of the causes, combined experience and observation,—the touchstone of enquiry, assures us that the consummation is only delayed; and that whatever seasonal weather is to be expected in any climate, if it comes not at its accustomed periodic return, it will nevertheless subsequently follow; so that, although apparently irregular in time, the wise dispensation of a superintending Providence is manifest in the consequences. The truth of this could not fail to strike every reflecting person in the year 1840;

lies before him, and the certainty with which the comparative anatomist determines by merely the sight of fossil teeth, the order, and indeed the very form of the extinct animal. Thus, the Peterodactile had been thought to be a bird, but "the form of a single bone, the *os quadratum*, enabled Cuvier to pronounce at once that the creature was a lizard," a flying lizard, an animal which now has no real existence, and "found only among the dragons of romance and heraldry."

All knowledge of this sort is useful to the seaman, as the general laws of nature, if studied, may be made subservient to the purposes of navigation. For example, the acute eye of our celebrated circumnavigator Captain Cook, on entering a newly discovered inlet, determined at once on seeing the growth of the plants at the high-water line, that it was a pacific anchorage; that is to say, there was no violent surge, —surf in the proper acceptation of the word of course, there was none. Now, this, simple as it may appear, is a very useful guide to those who visit unfrequented shores. Such an example, indeed, is not to be compared with those which the naturalist or the geologist can determine, because, though here nature follows a general rule, it is such as requires only the simplest exercise of common sense to detect; whereas, the results of the others can only be arrived at from deep study, and practical familiarity with the details of physical phenomena, whether of the animal, vegetable, or mineral kingdoms, or of the terraqueous globe. But, common-sense is not always at hand or exercised, for a very clever man in Captain Cook's situation might have entered the inlet, and passed out again without forming any opinion on its security, from merely observing the condition of the reeds, &c., growing at the margin of the sea.

but, the natural persistency of purpose, for the general good, has been repeatedly exemplified in this island, however, the causes which produce these variations, may have been hidden from us.

May I be permitted to speculate a little on a very interesting subject, and which is not altogether foreign to that we are treating of?

Would it be presumptuous to imagine that the intellect of man, in successive generations, expands in intelligence and capacity, and in that peculiar sagacity which seizes upon the display of the phenomena of the heavens and of the earth, of the vast accumulations of embedded organic remains, which speak of ages long past, before human creation, and impressively lays before our wondering gaze, the exemplifications of the wisdom and unbounded power of the great Author of the Universe, and the design of the existence of His varied creations?

The remarkable advances which have been made within the last and present centuries, would seem to give a colour to such a surmise; for, however true it may be that the love of sciences has from remote times been exhibited, certain it is, that like the reversion of the steps of a pyramid, knowledge has been progressively advancing in width and solidity, from a basal point, as it were, to a very extended summit, and if it should continue to progress with the same results as have attended geological research, and astronomical investigation, until the expansion of the human mind shall have reached to the *ne plus ultra*, which creative Providence has assigned to it, as a limit beyond which mortal attributes cannot soar, and that nothing farther shall be left for the exercise of the mind's ingenuity,—would it be presumptuous to imagine that the final day of man's existence on the earth shall arrive, when he shall pass at once from time to eternity, amidst the consummation of one of those grand material revolutions which this planet has undergone, to fit it for the reception of a new order of beings?

With respect to the pluvial change of weather, although generally, apparently connected in some measure with the spring tides, and the southerly and westerly winds, yet undoubtedly the agent of its action is often inactive throughout a lunation, and indeed many lunations: so that any prediction solely built on the age of the moon, and consequently on the rise of the tidal waters, and the quarter whence the wind blows, although it may prove correct in seven or eight instances out of twelve, yet anticipation, even from the assumed appearance of the clouds, which, when the modification of the *nimbus* occurs, offers reasonable expectation of a fall of rain, may be delusive throughout a lengthened period. Hence the proverbial expression among country persons that, "the rain is loth to come," when there has been every indication of its fall happening speedily, without a realization of their expectation.

Whatever may be the agent that creates a precipitation of moisture, it seems certain, that whether facilitated by auxiliary principles, or not, it has the power of acting independently of external influences; and that though generally attended by a south, S.W., or west wind, the movement of the air from any other quarter, offers no decisive check to its consummation. This is obvious, as we know from experience that with the wind from every point from west to north, round to east, and south, rain has fallen.

On the 31st May (1840) the new moon occurred; wind was at west,

and from appearances rain was anticipated, only very light and transient drizzles happened on the 2nd of June.—On the 5th, wind east, small rain, attended with fog, continued the whole day. We have, however, an important fact before us as occurring very lately, dry weather having continued for upwards of sixty consecutive days, a proof that the governing power is independent of lunar or tidal influences, or of the direction of the wind, that power, probably, being electricity.

The reverse of this has also occurred for a similar length of time, with trifling interruptions. These apparent irregularities seem inexplicable from any local influences acting conjointly with the sun's place and consequent power. They, most probably, were the result of general causes operating with overpowering energy for a universal purpose, of which we can have no conception, but can fully appreciate the wise dispensation; the benefits arising are manifest.

If electricity, as supposed, with reason, be the agent, although so far uncontrolled by other natural principles as to remain quiescent whilst the particular drought alluded to continued, it admits, perhaps, of co-operation under a conjunction of circumstances; and hence the regularity often observed in the recurrence of rain during spring tides, and, the reverse in neaps, which has given rise to the distinguishing appellatives to the phases of the moon, of the wet and the dry quarters.

I here close my essay on the changes of weather, and have only to hope that, the spirit of enquiry which appears to have been awakened by the important discovery of Mr. Redfield, (to which I shall advert in another paper, to direct attention to a point yet untouched,) will be followed up by master-minds to the fullest extent it is capable of being carried.

The Report.

Whilst lying in our little schooner, nearly becalmed, a few miles from Cape St. Nicholas, in Hayti, the high land bearing N.N.E., the reports of several guns were heard in succession, and the circumstance duly entered on the log-board. The mid. of the watch, a self-opiniated youth, made his report to the lieutenant commanding, who, in a short time came up, with his telescope under his arm, and enquired of Rattle the mid, whence the sound proceeded. Rattle pointing to the high land of the Cape, replied that, the reports came from thence, and no doubt the vessel which had fired the guns was on the other side. "Indeed!" said the lieutenant smiling, "there is not, I believe, a tunnel through those hills. Hands up, make sail." This was speedily done, and the little barkey slid away to the S.S.W. The manœuvre astonished Rattle, who turning towards a brother mid., remarked, "Why he's running away from whence the sounds came!" "Perhaps," replied the other drily,—"he's only going to take a circumbendibus!" "D—n me, I think he must be a little shy, or confoundedly stupid to chase the sound, instead of looking round the corner for the substance," returned the vain mid. of the watch. "Ah!" edged in the old gunner, who had been listening very calmly to these remarks,—"Ah! Master

Rattle, ye dinna ken the thing just sufficiently. The leaftenant is na foo' I'll warrant ye, and I ha' kenn'd his metal afore to-day. Ye'll be larnin' better in a wee bit o' time.

At this moment, the stern steady voice of the commander was heard, —"Keep a good look-out ahead for strange sail—d'ye hear masthead-man?" "Aye, aye, Sir." "Astern, he means;" said Rattle, almost loud enough to be heard! "Ye desarves," smartly replied the old gunner, with a most indignant frown, "to ha' your starn-frame sarved out for that; I'll be telling ye, Master Rattle, y're a greenhorn yet, ye dinna ken the thing just particularly; ye'd better be clapping a stopper upon y'r rattle, mon." "Pshaw!" snapped the conceited mid.; "you do'nt pretend to tell me, old rusty-fusty, that I can't believe the evidence of my senses!" "But, indeed Master Rattle, I'll be telling ye just the vary same thing." "Sail O!;" reported the masthead-man; confounding the very *able* retort which "Master" Rattle was about to pour forth on the old seaman. He looked queer however, and was silent, as if conviction of his error was flitting across his brain; and was fairly startled when the "Right ahead Sir," of the look-out man, responded to the commander's interrogatory "Where?" and, the ejaculation "By Jupiter!" was scarcely out of his lips, when another sail was announced astern of the first.

"Go up, Mr. Rattle, with a glass, and see what you can make of them," said the lieutenant. In a short time, with rather a subdued tone of voice, the mid reported,—"A frigate in chase of a fore-top-sail schooner, Sir." "Hands up—wet sails;" followed the lengthened note of the boatswain's pipe. The engine played, and the breeze freshened as we drew off the land. In an hour we ran alongside of the schooner, which pouring in her broadside, and receiving ours, hauled down the tri-colour. She proved to be the well-known privateer Fleche, and a beautiful little craft she was. The noble frigate came ranging up, reducing her canvass in fine style, and backed her main-top-sail.

It appeared that the reports were from guns which she had fired at the chase, the times when heard by us corresponding. We were, of course, all in very good humour, and the the vain middy, in addition to his share of the forthcoming prize-money, got a "wrinkle," by learning, for the first time, that there was such a phenomenon as reverberation of sound; and what was morally of more importance, he was corrected in one of the most common faults of the youthful aspirant—judging the motives of his senior officer through the medium of an immature mind, possessing little thought and less reflection.

When the guns were secured, old Lock, the gunner, came sheering up to young "Master" Rattle, who was preparing his "traps," in readiness to take charge of the prize; with a look of ineffable archness, whispered as he passed into his own berth—"Ye'll be just asking the doctor to tell ye the meaning of *Hex-pari-hence-i-say-doo-set!*"—"Go to Flanders, you old wad, and talk to the windmills in your d—d high Dutch coiled against the sun,"—retorted the mid. now in high glee. "Na reflections" drolled out the rawboned Heland doctor as he uncoiled his lengthy frame from the nut-shell berth,—"Na reflections, I pronoonce it capital, and be me faith it isn't every *lock* that hath sic a *stock!* ha, ha, ha!!"

At this moment, the clerk and purser's steward called loudly for the boatswain, but he, drowsy from his morning's labour, had taken his all-potent "nor-wester," and laid himself at length on his chest, his heels protruding outside of his berth, and had fallen asleep.—"Where's the Bosen"—"I say Bosen?" Rattle who was as busy as a magpie with a ball of thread, packing up his "duds"; on the question being repeated, threw himself into a theatrical attitude, and suiting the action to the words, commenced singing the following *beautiful* extemporary stave!!

"Bosen?—there lays he as sound as a rock,
His nasal pipe a-sounding!
A fid knows not he from a purser's frock
In long loose threads abounding!
Like Paddy's queer band, his tune's all grunt,
When bound to Ballynamore!
There—steady he lies like the barge or the punt,
Without a rudder or oar!"

Seizing the lay, the doctor continued;—

"Wake up, wake up thou snoosing old sinner,
The Scribe and Pharisee call!
'Tis vulgar quite to snoose before dinner.
And drum of thy senses *pall*!
Rouse! rouse ye, thou son of a tar-barrel,
Dolphin are sporting amain!
Art thou less a professor than old Yar-rell?*
Up then, and handle the *grain!* [*Shakes him without success.*
Not a word, nor a laugh, nor a sound hears he,
Fast lock'd his upper-story;
The thunders may roll, and the lightnings flee,
For he's alone in his glory!"

The circumstance above related was brought to my recollection when reading the following, in Mr. Benson Hill's work, "Reminiscences of an Artillery-officer:—

"A singular illusion, for which I have never been able to account, occurred on our near approach to the American lines, at New Orleans. The roar of musketry and cannon seemed to proceed from the thick cypress-wood on our right, whilst the bright flashes of fire in our front, were not apparently accompanied by sound. This strange effect was probably produced by the state of the atmosphere and the character of the ground. But I leave the solution of the mystery to time and the curious."

SONOR.

THE BONETTA ROCK.—*The Wreck of the Charlotte.*

THE excitement recently occasioned by the wilful loss of the Dryad, in the West Indies, and the Lucy, on the island of Sal, with all the proceedings consequent thereon, had scarcely sobered down, and passed by as a matter for history, when we meet in that invaluable record of maritime information, the *Shipping and Mercantile Gazette*, an account of the loss of the barque Charlotte, of Alloa, on the Bonetta Rock. Now the Bonetta Rock happened to be an old acquaintance of ours,—an old offender which had taken up his abode in the charts for many a long year, but shifting that abode in a very extraordinary manner, just as it suited the fashion of the day, and strictly accommodating him-

* A well known Ichthyologist.

self always to the last place assigned to him. Indeed it would be difficult to find a reputed maritime danger to which a greater variety of positions had been most respectfully awarded, than the Bonetta Rock. Now, with a due regard for our old friend, who we found had got another new place, and remembering our exclusive right of investigating the title assumed by those terrors to navigators, the sunken dangers of the ocean, to hold the places thus so liberally assigned to them, we determined on looking into this last at all hazards, and accordingly prepared for what seamen would designate, an overhaul. We had scarcely sealed our resolution, when the following account of the event was received by her Majesty's Government, from the British consul at the Cape Verds, thus investing the new locality of the Bonetta Rock, with something of an official character, which tended still more to encourage our resolution.

Extract from Consul Rendall.

12, *Cape Verdes, April 30th*, 1841.

"I have the honour to report to your Excellency, the total loss of the barque Charlotte, Capt. Forrester, bound to Sydney, with a cargo of sundry goods and live stock, in consequence of striking upon a sunken reef, twenty-three miles to the eastward of the Hartwell reef, at the north-east point of this island, which is laid down by the Captain to be in latitude 16° 17′ north, and longitude 22° 21′ west. No lives lost.

"The reef upon which it is alleged the Charlotte struck, appears to be the same the Madeline, Capt. ———, was wrecked upon in 1835, and the one sought for by one of her Majesty's vessels, under the command of Capt. Vidal, in 1838.

"I shall consider it my duty to learn every information concerning the reef in question, and report the particulars, with the loss of the Charlotte, to the senior officer of her Majesty's squadron on this coast.

"I have, &c.,

"JOHN RENDALL."

Here, then, was enough for us to go to work upon in earnest; and remembering besides the search which had been unsuccessfully made by Capt. Vidal, in the Ætna, in which all the old-fashioned dwellings of the Bonetta Rock had been routed up, from the first to the last, and which search we had very carefully laid before our readers in our volume for 1839, our first step was to apply to the Captain of the Charlotte for his account of the place in which he found it, and also to the owner of the vessel for the use of her log, with a view to its publication. There is no denying that such formidable dangers as concealed rocks in the ocean, should be as publicly known as possible, and every possible means taken to put an end to those roving habits, which they are too fond of, and to fairly fix them in one unchangeable position, such as real rocks, generally do very properly assume as their own natural right. And so it appears, thought the owner of the Charlotte, the last of the Bonetta vessels, who, with the same feeling for the safety of navigation, which possesses all honest men, immediately conceded our request, and the result was the appearance of the Charlotte's log, in the September number of this journal. Now, then, we said within ourselves, we shall see what reality there is in the title which these

roaming dangers assume from time to time, to hold their last position. What the authority really consists in, for being thus found in one place by one vessel, and in another place by another. But lest we should look at the matter with a feeling of prejudice, and be inclined to say the right was wrong, we accompanied the log, with a request that any of our readers who had sufficient leisure, would have the goodness to work the days' works for themselves, and send us the results for publication. By this process, they would at all events assign their own place to the Bonetta Rock, and perhaps some of them would afterwards have an opportunity of looking for it in their own positions, uninfluenced by any opinion of ours. That request has been most readily complied with, and we have received no less than five communications, containing each day's work, shewing the position of the Charlotte every day at noon, from her leaving Madeira to the time of her striking on the rock.

As in duty we are bound to do, we now lay them before our readers, and we have adopted the following tabulated form as being that most convenient for reference. The contributions are distinguished from each other by letters throughout. The Nos. 1 and 2 in the longitude column are those of the two chronometers on board the Charlotte; and that in the column No. 3, is the mean of the two. It will be as well to precede the table with the communications themselves, and we therefore, commence with the first signed J. McDougall. This gentleman concludes his days' works, which we have called *b* in the table, with the following:—

				0°	11′	53″	0° 23′ 38″
				21	57	13	21 57 43
							21 57 13
							43 54 56
Means of the longitude by both chronometers							21 57 28W.
Latitude by observation carried on from noon							16 17 58N.

The above is the latitude and longitude of the Charlotte, when she struck on the Madeline or Bonetta Rock, on which she was wrecked April 19th, 1840.

The bearings supposed to have been taken of Point San Lorenzo, the east end of Madeira, in lat. 32° 33′ 45″ north, and long. 16° 38′ 15″ west; and the bluff part of the south point of the Northern Deserta in 32° 31′ 41″ north, and 16° 32′ 0″ west.

J. McDougall,
13, *Hanway Street, Commercial Road.*

The next in the table marked *c*, is that of Mr. Livingstone, who accompanies his days' works with the following letter:—

105, *Duke Street, Liverpool, Oct. 6th*, 1841.

Sir.—In compliance with your request at the foot of page 681 of the *Nautical Magazine* for this month, I have attempted to analyze the log of the Charlotte, of Alloa; and *that the more readily*, because from the

late Mr. Lincoln's (commander of the brig Inca,) and his mate's information, I believe in the existence of the Bonetta rocks, or shoal; and in addition, when commanding the brig Jane in April 1824, I pursued very nearly the same track as the Charlotte; had too, fine weather, smooth water, clear atmosphere, numerous observations for magnetic variation, taken under favorable auspices, and with good instruments.

I append the result of my calculations, in which I applied the variation according to my own observations, and have not attempted the greatest accuracy in computation, as the rough manner in which the log is given did not seem to require it.

I had hoped the old plan of *two* hours' logs and *half-knots* had been nearly abandoned in the merchant service.

I have, &c.,

ANDREW LIVINGSTONE,

To the Editor, &c. *Teacher of Navigation, Nautical Astronomy, &c. and late master-mariner.*

The point of departure is assumed from the latitude stated as observed, and the mean of the chronometric longitudes, "nearly," as in lat. 32° 31′ N. and long. 16° 21′ W.

One mile less than the log distance up to 8h. P.M., is allowed because the vessel struck at 7h. 50m. P.M., and consequently going at the rate of six knots hourly, exactly gives one knot for ten minutes.

The chronometric longitude is that carried on by account from noon of the 18th.

The shoal's position—lat. 16° 17′ N., and by account 21° 47′ W., or by chronometer combined with account 22° 06½′. The chronometer being to the westward of account 0° 1½′. The current of S. 15° W., 41′ on the 15th seems a gratuitous assumption, and irreconcilable with facts.

The next marked *d* is from a gentleman, signed A. Broadhurst, who accompanied his work with the following letter:—

3, *Rodney Terrace, Mile End West, 6th Oct.*, 1841.

SIR.—Having worked the days' works of the Charlotte, from the day of her leaving Madeira, I forward them for your information, should you not have received them from any of your correspondents. As there is no mention of variation made in her log, I have allowed the quantity marked on Horsburgh's charts, which I have always found correct. The longitude is taken from the mean of her two chronometers.

The above is the exact latitude given in your excellent work* of the Bonetta shoal, and as the longitude of the Charlotte differs only four miles from that assigned to it, there can now be no doubt of the existence of it. Horsburgh does not mention it in the last edition of his directory. I find, on referring to the log of the H.C.S. Canning, in April, 1822, we must have passed close to it, as at 4h. 30m. P.M. 21st April, we were in latitude 16° 19′ north, longitude 22° 23′ west, with the centre of Bonavista bearing W.b.S., six or seven leagues, and the peak of Sal N.N.W., but did not perceive any appearance of danger.

I have, &c.,

A. BROADHURST.

* February number for 1837, p. 101.

The next marked *e* is the communication of Capt. Hains, of the Honorable East India Company's Service, and that which follows it marked *f* is unaccompanied by letter. The following letter contains Capt. Hains's remarks:—

Jerusalem Coffee House, Oct. 22nd, 1841.

SIR.—I have worked the log of the Ship Charlotte, as printed in the Nautical Magazine for this month, from Madeira to the shoal on which she was lost April 19th, 1840, and beg to enclose the result.

In working the log up, I have of course availed myself of the daily observation for the latitude to correct the dead-reckoning, but the longitude I have brought on by account from the position of the ship at noon April 11th together with the bearings of Madeira and the Desertas, and which bearings agree tolerably well both in latitude and longitude with the noon observation on that day.

The variation of the compass I have taken from my own journals and observations, in passing over nearly the same track in the H.C. Ship Lowther Castle, under my command in 1833.

Some difference occurs between my work and that of the printed log which probably arises from a misprint. See the log of the 15th April, the course is stated to be due south 119 miles, the latitude by account 25° 25′ N. making a difference of only 78 miles of latitude, whereas the latitude by account should have been the same as by observation, viz. 24° 24′ N. Again the longitude by chronometer on the previous day the 14th April, is put down 21° 33′ W. whereas I should think it ought to be 20° 33′ W. I have therefore not used the daily longitude by Chronometer to correct the longitude by dead-reckoning.

From the spot where the Charlotte foundered, (the boats having laid to all night) the Island of Bonavista is stated to have borne N.W. at daylight. This appears to be impossible, for the Island of Sal bears by compass N.W., and Bonavista W.S.W., unless the ship after striking, and prior to foundering had run many miles to the southward.

By referring to the Admiralty chart, corrected to 1830, it will be seen that H.M.S. Leven in the year 1819 nearly passed over the spot where the Charlotte was lost, when cruising for the Bonetta Rocks.

The latitude brought on from noon April 18th, nearly agrees with the Portuguese position of the above rocks, and also with that assigned to them by Horsburgh in his chart of the North Atlantic, but the longitude differs considerably from Horsburgh, and agrees nearer with the Portuguese account.

If the Charlotte's longitude be correct, it is possible that the reef on which she struck, may be the long-looked for Bonetta Rocks, and which lay further to the westward than has been hitherto supposed.

I am, &c.,

H. HAINS,

To the Editor, &c. *Com. H.C.S.*

Ship Charlotte at noon April 11th, 1840, Lat. obs. 32° 31′ N.
Madeira, south point bearing N.W. Long. means of Chro. 16 21 W.
Desertas, south point W.N.W.

It ought to be remarked that but little dependence can be placed upon the Charlotte's dead-reckoning, scarcely a single log being correctly added up.

I make the latitude and longitude by account, at 8 P.M., April 19th, when the ship struck—lat. 16° 19′ N., long. 21° 41′ W.

The Charlotte's chronometers appear to have gone regularly, inasmuch as the difference between Nos. 288 and 784, during seven days, but slightly varied.

No.	April 11th, noon.	Diff.		April 18th, noon.	Diff.
288 shewed	16° 15′ 15″ W.	11′ 45″	288 shewed	21° 47′ 45″ W.	12° 15′
784 „	16 27 00 W.		784 „	22 00 00 W.	

	Longitude shewn by each Chronometer. No. 288	No. 784	Means Chros.	Daily diff.	Long. entrd. in log.
	° ′	° ′	° ′	′	° ′
April 11th.	16 15	16 27	16 21	12	16 21 west.
Diff. long.	1 56	1 56			
" 12th.	18 11	18 23	18 17	12	18 15
	1 51	1 51			
" 13th.	20 02	20 14	20 08	12	No observation.
	47	47			
" 14th.	20 49	21 01	20 55	12	21 33 *qy* 20°33′
	00 00	00 00			
" 15th.	20 49	21 01	20 55	12	20 44
	12	12			
" 16th.	21 01	21 13	21 07	12	21 19
	13	13			
" 17th.	21 14	21 26	21 20	12	21 33
	00 00	00 00			
" 18th.	21 14	21 26	21 20	12	21 54
	+ 21	+ 21			
" 19th. at 8 P.M.	21 35W.	21 47W.	21 41	12	22 15

NB.—It does not appear in entering the daily longitude by chronometer in the log-book whether the longitude shown by No. 288 or 784, or the means be used.

If an error exists, as I suppose, on the 14th of April, the longitude by account, corrected by the longitude by chronometer, and brought on to 8 P.M. 19th, will then be 21° 54′ west

Long. per means of chronometer brought on, noon Ap. 18, 22 15

44 09

Mean longitude 22 4 30 W.

Latitude of shoal 16° 19′ north, longitude 22° 05′ west.

[The longitude on the 14th is evidently as Capt. Hains states it 20° 33′ on the 14th, perhaps an oversight; whereas the error on the 15th is something more.—Ed. N.M.]

They will therefore stand thus:—*a*, Charlotte; *b*, McDougal; *c*, Livingstone; *d*, Broadhurst; *e*, Hains; and *f*, Usborne.

Day.		Course.	Dist	D. Lat.	Dep	Lat. acc.	Lat. obs.	D. Lon	Lon. acc.	Lon. No. 1	Lon. No. 2	Lon. No. 3	Var.
		°	′	° ′	′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	°
Monday 12.	*a*	S. 38 W.	178	2 26		30 3	30 6		18 6			18 15	
	b	S. 35 W.	178	2 26	101	30 4	"	1 57	18 6				21½
	c	S. 35 W.	178	2 26	102	30 5	"	1 59	18 20			18 15	
	d	S. 35 W.	173	2 22	99	30 9	"	1 56	18 17			18 15	
	e	S. 35 W.	173	2 25	99	30 9	"	1 56	18 17				21
	f	S. 35 W.	178		102	30 5		1 59	18 14			21	
Tuesday 13.	*a*	S. 42 W.	164	2 8		28 5	27 48		20 12				
	b	S. 39 W.	163	2 7	102	27 58	"	1 55	20 2				20½
	c	S. 38 W.	163	2 8	101	27 58	"	1 56	20 16				
	d	S. 39 W.	159	2 3	100	28 3	"	1 55	20 16				19½
	e	S. 38 W.	159	2 5	97	28 1	"	1 51	20 8				21
	f	S. 38 W.	163	2 8	100	27 57	"	1 55	20 9				
Wednesday 14	*a*	S. 49 W.	87			26 48	26 43		21 16			21 33	
	b	S. 34 W.	88	1 13	49	26 36	"	55	20 57				20
	c	S. 28 W.	85	1 12	45	26 26	"	50	21 6			21 33	
	d	S. 32 W.	83	1 10	44	26 37	"	49	20 59			21 33	18¾
	e	S. 30 W.	82	1 11	42	26 37	"	47	20 55				20
	f	S. 30 W.	85	1 13	42	26 34	"	48	20 57				21
Thursday 15.	*a*	South	118			25 25	24 44		20 44				
	b	S. 3 E.	122	2 2	2	24 42	"	2	20 55				19¾
	c	South	118	1 58	0	24 45	"	0	21 6			20 44	
	d	S. 1 E.	119	1 59	2	24 44	"	3	21 30			20 44	18
	e	South	119	1 59	0	24 44	"	0	20 55				17
	f	S. 4 E.	122	2 2	8	24 41	"	9	20 48				
Friday 16.	*a*	S. 10 W.	162			22 5	22 12		21 55			21 19	
	b	S. 2¾ W.	162	2 42	8	22 2	"	8	21 16				18½
	c	S. 4 W.	162	2 41	12	22 3	"	13	21 19			21 19	
	d	S. 4½ W.	159	2 38	13	22 6	"	14	20 58			21 19	17
	e	S. 4 W.	158	2 38	11	22 6	"	12	21 7				17
	f	S. 1 W.	162	2 42	5	22 2	"	5	20 53				19
Saturday 17.	*a*	South	167			19 27	19 41		21 41			21 33	
	b	S. 14¼ W.	168	2 27	12	19 24	"	13	21 16				
	c	S. 4½ W.	168	2 47	14	19 25	"	15	21 34			21 33	
	d	S. 5 W.	162	2 41	15	19 31	"	16	21 35			21 33	16
	e	S. 4 W.	161	2 40	12	19 32	"	13	21 20				17
	f	S. 3 W.	168	2 48	9	19 24	"	10	21 3				18
Sunday 18.	*a*		159			17 2	17 4		21 41	21 48	22 0		
	b	South	157	2 37	2	17 4	"	1	21 18	21 48	22 0		16½
	c	South	157	2 37	0	17 4	"	0	21 34			21 53	
	d	S. 2 W.	157	2 37	5	17 4	"	6	21 39			21 54	15
	e	South	154	2 34	0	17 7	"	0	21 20				
	f	S. 1 E.	157	2 37	3	17 4	"	3	21 0				17
Monday 19.	*a*					16 17			22 21				
	b	S. 24 W.	50	0 46	20	16 18		21	21 40	22 9	22 21		16
	c	S. 14½ W.	50	0 47	12	16 17			21 47			22 6	
	d	S. 24½ W.	49	0 44	20	16 19		21	22 15				15
	e	S. 25 W.	49	0 45	20	16 19		21	21 41				
	f	S. 23 W.	50	0 46	20	16 16		21	21 41				16

We have yet to state, that the positions of the Charlotte each day at noon, we have placed as *a*, first on the list. It is obvious, that our reasoning on the positions of the vessel, must depend on the observations for latitude and chronometers as they stand recorded in the log. We know nothing further of them, than appears there. But, we conclude that the longitude of Madeira being so well known, enabled the Charlotte to obtain a new rate for her chronometers, which would be given by her departure, as recorded in the log and the *sea* rates she would thus obtain, would be far better than those which she sailed with, for they do not appear to have been very good, although the chronometers appear to be so.

The quantities in the table are also set down to the nearest minute, as being evidently considered to be quite near enough for the common purposes of navigation, in such vessels as the Charlotte. To say that there is a rock in a certain position is one thing, and toprove that there is *not*, is another. There can be no question as to which is the most difficult task; therefore, if in performing the latter we should be found rather discursive or lengthy, our readers we trust will find an excuse for us in the importance of the subject.

We have now before us the authority on which the Bonetta Rock has assumed a new position on the charts. It stands at the head of the list of days' works as A 1, to use a nautical phrase, divested of that mysterious importance in which all such accounts are enveloped in the absence of the reasoning or demonstrative part of the question. Now we should be paying those gentlemen who have sent us their days' works a very bad compliment, after the trouble they have taken to work the Charlotte's log, if we were to adopt the Charlotte's position of the rock as the true one, in preference to any one of theirs. Were we even inclined to do so, each would have a fair right to consider his own just as good as the Charlotte's, and thus, besides the places it has already had, there would be at once five more new ones for it. But we are not inclined to do any such thing. There is quite sufficient evidence in the Charlotte's log to convince us that, that position is worth nothing. When we consider the unsatisfactory agreement in general, between her reckoning and those of the five beneath it, the serious discrepancies on several days, the ready manner in which a current of nearly two knots an hour is brought in to make up for an imaginary dificiency of distance, arising from a mistake in calculation, and which is designated by Mr. Livingstone as "a gratuitous assumption, and irreconcilable with facts," the absence of the chronometers, except on the last *two* days; all these are sufficient in our estimation, to justify us in pronouncing that the Charlotte's position for the Bonetta Rock is no less "a gratuitous assumption," than the current of forty-one miles above-mentioned.

Indeed, with reference to that entry in the log, such a mode of accounting for a mistake cannot but occasion a smile, if it were not for the consideration, that it is to such navigators as make them, that the property of individuals, and the lives of seamen are intrusted by this country; and, perhaps, we may add, by this country alone! If we are not wrong in thus discarding the Charlotte's position of the Bonetta, we certainly should be so in adopting it as true, in preference to the positions assigned to it by those of our subscribers who have so considerately

taken the subject in hand for us. But a deference to these, with the reasons we have pointed out, render such a conclusion unavoidable.

Before we quit this part of the subject, we must not omit to observe, that the Charlotte's position of the rock appears, we are informed by the owner, in her captain's protest; and so it may be concluded we presume, did the place which the Madeline assigned to it, and all the vessels severally gone before her, each laying it down as it seemed right to each. Certain it is that it cannot be in all of them. But we have a word to add about protests;—the Lorton Rock, in the Providence N.E. channel, has shewn how much faith is to be placed in them. In our volume for 1839, at p. 810, in alluding to Capt. Vidal's search for the Bonetta Rock, we said, "We recollect a case of this kind (saying sunken rocks exist where they do not) which occurred in the West Indies, and which we ourselves have recorded of a vessel, stated to have been lost on a rock in the very middle of the Providence N.E. Channel, and this was the Lorton Rock. The account of it may be found in our volume for 1833, (p. 561); there it stands with our very careful precautionary remarks warning navigators against it. We might have entertained certain suspicions about it in our innocence on such matters, but we did our duty, and in the very next volume, a few months after, we had to record Capt. Owen's refutation of its existence. (See p. 131, vol. 1834.) Happily for our Nassau ships, the *Lorton's ballast, and certain iron pipes on board of her* as cargo, were found on Egg Island Reef, and the bugbear of a doubtful danger, lodged six feet under water, and no bigger than a 'boat's bottom,' was consigned to oblivion, instead of worrying them (if they were not in the secret,) by its appearance in the very fairway of the channel from Nassau." We said more than this at the same time, concerning the Bonetta; all of which as yet we have found no reason to alter. But we adduce this passage as an instance of the faith to be placed in protests as to the position of sunken dangers. But where after all is the Bonetta Rock? Good service has been rendered in helping us to find it, and perhaps with such assistance we may be able to do so without sending *another* ship after it! We have said it is not in the position which the Charlotte's log assigns to it, recomputed as it has been by so many of our contributors.

It is quite clear that the only instance of a current being taken into the Charlotte's account is that to which we have already alluded as no current. The days' works are computed with the mere distance given by the log, down to the time when the vessel struck, and thence the position of the rock is inferred. And yet it is notorious to any experienced seaman, that there is a dangerous current in that part of the ocean passed through by the Charlotte. The charts too, that we have seen, caution the seaman, by well-known indications in the shape of arrows, to be on his guard, shewing the general direction in which it sets. But as the *first* authority on currents, let us refer to the late Major Rennell's valuable work, "On the Currents of the Ocean," and see what he says. Although not a seaman, he bequeathed to seamen a most important work compiled from a large mass of good practical experience, with an assiduity and perseverance which is very rarely to be met with. Our ground is between Madeira and the Cape

Verde Islands, and at p. 37, of the Major's work, we find the following paragraph:—"In the usual line from Madeira, south-westward to the *sight* of San Antonio, the north-westernmost of the Cape Verde Islands, the current almost always sets to the south-eastward as far as the latitude of 25° north, when it will be found to be south-westward, or *more westerly*, obeying the general trade-winds. Indeed, the south-west current commences in twenty-eight degrees of latitude." So says Major Rennell.

But suppose we take another authority. There is an excellent compilation well-known to seamen, entitled "A Memoir, descriptive and explanatory to accompany the New Chart of the Atlantic Ocean," by Mr. John Purdy, containing a large mass of information, equally useful, interesting, and instructive. We quote from the sixth edition of 1829, not having seen a more recent one. In p. 109 we read that "In proceeding to Tenerife, Sir Erasmus Gower observed a constant current setting to the southward, at the rate of a mile an hour, equal to twenty-two miles in the distance between Madeira and that island." In p. 114, Baron Roussin say, "The general currents on the African coast between Cape Bojador and the Isles de Los, with the exception of some places subject to a more or less regular tide, are uniform during the eight months which comprise the fine season. They follow exactly the trend of the coast from north to south." We might multiply such proofs as these were it necessary to show what every seamen knows, that a southerly current sets throughout that part of the ocean between Madeira and the Cape Verde Islands, varying as we have seen, first to the south-east, then to the south-west. Accordingly then we should expect to find the Charlotte when to the northward of lat. 28° to be to the eastward of her reckoning, and when south of that parallel to be to the westward of it, but indisputably to the southward of it.

Now we need be at no loss for any proof of this general southerly current in the case before us, for there is ample evidence of it even in the log of the Charlotte. The whole difference of latitude given by the log, from the departure to the time she struck amounts only to 16° 9′, while it is admitted by observation to be 17° 12′, shewing a set of seventy-three miles to the southward since the departure from Madeira unaccounted for. Here then we say is ample proof of a southerly set. With all this evidence then before us of a current under which, and indeed along with which the Charlotte was sailing, how is it possible, we would ask, to agree in the truth of her position of the Bonetta Rock, when such current has not been allowed for in her reckoning. According to that reckoning, as reported in the Consul's letter, she struck on the rock in latitude 16° 17′, longitude 22° 21′ west; and the same remark is applicable to those vessels that have found it before her. But it may be said we have not taken the real difference of latitude given by the log, as it will vary according to the course, as well as the distance made good. Well then, let us refer to the work of our contributors. The greatest difference of latitude which is made by *f* amounts to 16° 41′, and the least by *e* amounts to 16° 7′, and the mean of all amounts to 16° 23′. Even with this mean then there is fifty-nine miles shewn

as the effect of a southerly current, not being accounted for by the Charlotte's log.

But the Charlotte had two chronometers embarked, which, we are told by Capt. Hains, of the Hon. East India Company's service, performed exceedingly well; and our best acknowledgments are due to that officer for the pains which he has taken to show the behaviour of these chronometers, which indeed appear to have gone remarkably well. Such attention to the subject is quite in accordance with that high character in these matters which has always distinguished the officers of the service to which he belongs.

We shall not trouble our readers with any comments on the discordances presented in the table, although we might remark on some wide differences which appear here and there. But we will turn to the last day: this presents a tolerable agreement in latitude as well as the day before, but along with it very wide differences in longitude. Therefore, as we have said, we shall leave them, and turn at once to what is recorded in the Charlotte's log of her chronometers, which if they have not done good service for the Charlotte, they have for us, in helping us to find the Bonetta rock. And what do they say? Why, that while the vessel is making a *south* course by her reckoning from the noon of Saturday to that of Sunday, the day she was lost, the mean of these chronometers shows a *westerly set* of 21 minutes of longitude. One of them shews a set of 27′, and the other 15′ to the westward. Even the day before when by the account the Charlotte had made 14′ easting, the chronometers shew the same amount of westing! If our readers will refer to pages 680 and the following, this will be apparent to them.

Surely this was sufficient to open the eyes of any one entrusted with the charge of a ship! to the fact of her being influenced by a formidable current, the action of which can only be discovered by these valuable machines; for what purpose were they on board the Charlotte, but to detect the influence of currents, and to correct her reckoning.

Now the first step that would be taken in the prudent management of a vessel on approaching the position of a reputed danger, or at any rate a part of the ocean which has been fatal to so many vessels, would at least have been a careful look-out to avoid the same disastrous consequences, and such a direction of the vessel's course adopted as would have avoided it. A careful commander would have reasoned thus, when he made the discovery on Sunday at noon:—The chronometers have shewn a considerable set to the westward both to-day and yesterday, and I am not clear of the Cape Verdes. Will my present course keep me so? A S.S.W. course from where I am in 17° 2′ and 22°, the westernmost of my chronometers, will keep me clear of Bonavista, and I shall not keep further away till I am to the southward of this island; I can then alter course and make Mayo and St. Jago.—Such would have been the determination of a discreet commander of the Charlotte.

But what did the Charlotte do? Only two hours after, when she was yet forty miles to the northward of Bonavista, the very elbow of the Cape Verdes, she keeps away two points more, and in consequence is brought up by the reefs off that elbow! Even if she had cleared

Bonavista we should have heard of her running against Mayo or St. Jago with such a course.

We have already shewn by the high authority of Major Rennell, by Baron Roussin, and by Sir Erasmus Gower, and also by the Charlotte's log and her chronometers, that she was within the influence of a strong southwesterly current, but we have deferred another evidence of it until we came to the consideration of that part of her voyage immediately preceding her loss when she was close to the Cape Verde Islands. The evidence to which we allude, although it might never have been seen on board the Charlotte applies most especially to her case. We mean a certain little chart which was published in this journal in 1839, containing the tracks of the Ætna in search of the Bonetta rock. Besides containing the tracks and soundings so carefully laid down by Captain Vidal, it shows also the currents by which his ship was influenced. A vessel cruizing about like the Ætna in search of a sunken rock, with her reckoning properly attended to, and astronomical observations for latitude and longitude properly made, *can* show the direction and force of a current, on which dependance may be placed, Now within about forty-five miles of the north-east side of Bonavista, we find the following currents on this chart:—

		D. Lat.	Dep.
S. 71° W.	12′	3·9	11·3
S. 30 W.	11	9·5	5·5
S. 38 W.	14	11·0	8·6
S. 40 W.	10	7·7	6·4
S. 45 W.	10	7·1	7·1
S. 17 W.	14	13·4	14·1
West	13		13·0
S. 52 W.	84	52·6	66·0

Or, a mean distance of 12′ in the twenty-four hours on the above course; or giving a current of about half a knot per hour.

It is true that there is a northerly set also on the chart, but the currents noted on it with the exception of this one are to the south-west.

We will now take the courses steered by the Charlotte from noon on the day she was lost, along with the westerly set shewn on the preceding day by the chronometer of about a mile an hour, and allow with this a set of S. 52° W., half a mile an hour. The case will stand thus:—

		D. Lat.	Dep.
S. 7° W.	13′	12·9	1·6
S. 39 W.	40	34·6	20·0
West	8	0·0	8·0
S. 52 W.	4	2·5	3·2
		50·0	32·8

giving a course made good from noon to the time she struck S. 33° W. sixty miles. The westerly set of eight miles, or a mile an hour, is amply shown by the Charlotte's chronometers on the two preceding days; that of S. 52° W. four miles would have been but a just precaution when the vessel was running before the wind in the direction of

the current. Then if we consider the Charlotte to have been in 17° 4′ and 22° W., as shewn by her commander while on her voyage, by one of her chronometers, it will be seen by laying down this course that she will not even clear the eastern extreme of Bonavista! So that a little acceleration of the current on approaching the island, as might be expected to take place, a little wild steering with an erroneous compass would be quite enough to set her on the reefs, lying between three and four miles off the north-east side of it. Indeed the distance sixty miles brings her within six miles of them.

So much for the result of the data afforded by the Charlotte's log. When there was even a possibility of such data being correct, which the result has proved it to be, no seaman can say that the courses she was steering were justifiable

Now let us see what is said of the reefs off Bonavista:—in p. 270 of the Atlantic Memoir above quoted, we read that "the eastern side of Bonavista is partly environed by a reef; and on the north-east are the reef on which the Hartwell East Indiaman was lost in 1787, and on which the Resolution, Captain Cook, was nearly driven by a *southerly current*."

We further find in the same page that there are three cays between which there is sufficient depth of water for ships to anchor inside of them; "but many rocks are here scattered with only twelve or thirteen feet over them and four fathoms close along them." Between two of the cays the channel is three-quarters of a mile broad, and has regular soundings from fifteen to five fathoms, frequented by H.M.S. Bulldog in 1787, which vessel several times anchored, with one cay bearing N.E.b.E. and another S.½W. in six or seven fathoms. It appears that there is also deep water between them and the shore.

Now the account given of the reef and reported by the American Consul's letter in page 562 of our August number, states that "it is 300 feet in length, under water, in the shape of a crescent, open to the northward, and the sea breaks only at particular times of tide." We should say at all times of tide, considering that there must always be a heavy sea on it, and the rise of tide being not more than 4½ feet at the Cape Verde Islands.

Again the log says in page 681 "breakers were seen close ahead," (what was the look out about that they were not seen till "close ahead") ship on the *reef* from ten to fifteen minutes," but the topsails, (the haliards having been let go by the run when the ship struck) and the courses were set and the ship forged off to the eastward, after which she just clears breakers on the lee bow." There is something more here than a single rock just under water. First it is a rock, then a reef, and now we have got two reefs, or a reef and afterwards (how long is not said) breakers which were just cleared. There is something more there after all than a single rock.

But we must pause for a moment and ask a question. The Charlotte had studding sails set on both sides; those on the larboard side were set on the 17th, those on the starboard on the 19th. She has the wind at N.N.E. and is steering S.W. Now the nearest way to throw her up into the wind, would have been to have put her helm a-port; but it is put to starboard, and she has therefore to go round four points

more than necessary. Now, was this the consequence of hurry and confusion, or was it that there were certain other indications of danger on the starboard bow, which the reefs off the island would show by the surf breaking on them? This is best known to those on board. But we have a right to expect that to clear a solitary rock in the ocean such as the Bonetta is reported to be, she would take the shortest means of getting up to the wind; and this was not done!

Well, the Charlotte just clears the second breakers on the lee bow, and she heads about E.N.E. But she is a sinking ship from this time and is abandoned to her fate, half an hour after midnight. We have endeavoured to ascertain how much easting she really did make at this time; but our question is unanswered. Probably she may have made five or six miles, perhaps eight, (we should think not more) when the crew and passengers are in the boats, and we are told by the log "lay to until daylight," when Bonavista is found to bear "N.W". Here we come at once to a most important statement, imparting to the chain of our reasoning, a strength, which could hardly have been expected in matters of this kind. The island of Bonavista bears N.W. Will our readers lay down the Charlotte's own position of the rock as stated in the Consul's letter in 16° 17′ N. and 22° 21′ W. From this position we will suppose her to have made good, about six miles due east; she was heading E.N.E. the variation and current would be against each other, therefore she may have made a good easterly course of six miles. Here the boats leave her as she foundered. Now the boats must have had some slight drift before daylight; say they drifted four miles to the S.W. From this position as Captain Hains observes, the island of Sal bears N.W. but that was too far off to be seen, and the boat must have drifted at least 16 miles further south, or 20 miles in all, at least, to bring even the northernmost part of this island to bear N.W. This again would be 20 miles off them and invisible in a boat, but the highest part of the island might have been seen at that distance; and to bring that to bear N.W. they must have drifted at least 3 miles more to the S.W., making in all a drift of 23 miles in about five hours.

We may fairly conclude such a thing impossible among the Cape Verde Islands. But it would be quite possible to have the island bearing N.W. allowing the reef she struck on to be about four miles off the land, and that the vessel had made the same easting after she struck, and the boats had drifted south-west about four miles after leaving her. The island might then be about ten miles off them on the bearing of north-west. Now we know from experience that distances at sea are always overstated. A vessel will suppose herself twenty miles from a coast when she is much less. Could we arrive at the actual distance of the boat the next morning from the land, it would go far towards deciding the question. If it be admitted that the north-west bearing is correct, that, along with the reasoning which we have adduced is sufficient to determine it. But if that be stated to be incorrect, what part of the log is correct we would ask? No, we could admit of no such statement. The bearing is deliberately entered in the log; the log is brought home and delivered to the owner many days after, and we are bound to receive it as a true statement to the best of the master's judgment in common with the rest of the contents

of the log. Had the master taken the angle of elevation of the highest land of Bonavista, that would have enabled us to arrive at the distance of the boats from the land; but these things are never thought of, or if thought of, are seldom or never done on these occasions.

What then are our conclusions? It is shown by the reckonings of our correspondents, that the place of the rock assigned to it by her commander is incorrect, or else their own must be. It is shewn by the Charlotte's log and the observations, that she was under the influence of a south-west current,—which current it is also shown, by the high and indisputable authorities we have quoted, is prevalent about the Cape Verde Islands. It is shown that there are two reefs instead of one, the Charlotte having struck on one, and getting off it about a quarter of an hour afterwards, just cleared the second on her lee bow. It is shown that by the bearing of Bonavista the next morning from the boat, the rock on which the Charlotte struck could not possibly be either in the place assigned to it, by her commander, or our correspondents; and it is shown that the most probable place of the Bonetta rock is the Hartwell reef. Such are our conclusions, and when we see that the current has not been considered, either by the commander of the Charlotte, or the gentlemen who have so considerately worked her days' works; we do not see how it is possible to arrive at any other. While we are rejecting the position which the Charlotte places it in, we do not for a moment doubt the veracity of her commander. We are satisfied that he believed his reckoning to be perfectly correct; he gave the position of the rock, as he had found it; and we are no less satisfied, that, striking suddenly on the reef at the distance of four miles nearly off land, in the dusk of the evening, the island might not be seen through the mist occasioned by the surf, and the confusion which would ensue. The distance from the island the next day, which might have been determined by an angle of elevation of the land, would, as we have before observed, determine the question. But such as it is in its present state we leave it, fully persuaded that, under all the circumstances we have stated, and the deep water soundings which the chart presents in further support of our views, the Bonetta rock is no more than a part of the Hartwell reef. But whether it is or is not, sufficient reason will have been adduced to caution vessels to make a good allowance for the effects of a current in passing to windward of the Cape Verde Islands, without passing to the westward of them, as recommended by the American Consul, to avoid "the outlying reefs of Bonavista."

There are one or two points yet which have arisen in this discussion, on which we may say a word before parting with it. The Hartwell reef has been before us, and it would be interesting to know where the Hartwell considered herself to be by her reckoning when she struck. Her log, we presume, is preserved in the India house, as she is said to have been an East Indiaman, and having treasure on board.

Another remark we would add is, that all the positions assigned to the Bonetta Rock, are comprised within seventeen miles of latitude, but range through nearly a degree of longitude, and all to the northward and eastward of Bonavista,—shewing a far greater westerly set than a southerly one, and agreeing with the conclusions of Major Rennell.

The only other remark we have to add, relates to the form of the Charlotte's log. As Mr. Livingstone says, we were in hopes "the old-fashioned plan of two hours and beginning the day at noon had discontinued." Really it is high time they should be. Of what earthly use can it be to begin the day at noon, but to perplex and confuse statements in which the civil day is used, beginning at midnight. This method of reckoning, was long since discontinued in the Royal Navy, and why not discontinue it in the merchant service. The two hour courses we look on as perfectly discreditable in the present day, and as a mode of keeping a reckoning that should not be allowed by any owner. We have already extended these remarks beyond ordinary bounds, but we must conclude them with the following extract from Mr. Raper's Practice of Navigation, in the sentiments of which we entirely coincide, and are glad to find them in a work which we have already recommended to our readers, as the first of its class yet published.

"It certainly seems desirable that a systematic method of keeping ships' logs should be universally adhered to. It appears a needless, and is surely, a very perplexing arrangement, that the forenoon should be Saturday and the afternoon of the same day Sunday. The astronomical day (which is reckoned in this way,) has, indeed, for its beginning the sun's meridian passage at noon, because this is a fact that may be observed, and is taken as a point of departure; and when we have to make astronomical calculations, we of course, refer to the beginning of the astronomical day. But surely no satisfactory reason can be given for employing *astronomical time* for *civil* purposes, and thus perplexing the common transactions of life by considerations which have nothing whatever to do with them.

"In merchant ships the log is most commonly marked every two hours only; much is thus left to guess-work in cases of alteration of course or wind. But this is not the worst part of the system, for instead of writing against the hours the *distance run*, the *rate* for the two hours is written, so that instead of adding up distances with a reasonable chance of some compensation of errors, the rates are multiplied with the certainty of doubling the error upon each hour's run."

THE GOODWIN SANDS—*The foundation.—Plan for boring.*

Ramsgate, Nov. 4, 1841.

SIR.—As there appears to exist much anxiety, (in a geological as well as mechanical point of view,) to ascertain what is really the base of the Goodwin Sands, I am induced to offer a few observations upon the subject.

That its base is a ledge of chalk clift or rocks, there is little room to doubt, while ships anchor upon all its outskirts over a chalky bottom; and from the nature of all chalk formations on land, it is fair to infer, that but for the abrasion of the waters, there would have been no steep face or side to the outer edge of these shoals, and that a line curving from the inner to the outer soundings, similar to all chalk downs on shore, would give, with tolerable accuracy, the depth of sand accumulated on their crown. Through this upper strata of sand, many

attempts have been made to bore with augurs, very similar to those used in sinking an artesian well, and thus far such efforts have been ineffectual; because, when the augur is withdrawn, the live sand fills up the orifice, and polishes the augur so effectually in its return through it, as to obliterate all traces of the chalk or other soil, which it might have reached in its lowest depression, I believe it has been perforated to a depth of twelve or fifteen feet, when the tools used have given way, being unequal to the work,—and it is therefore necessary to consider, whether assistance cannot be given by mechanical means.

I should imagine that a combined operation of boring and driving might give better prospect of success. Suppose a strong pile with a small iron tube, sufficient for the augur to pass throughout its whole length in the core or heart of the timber, and fitted with a temporary cap at its upper end while driving. When the driving became heavy the cap might be removed, the augur inserted, and boring commenced; and with an augur properly constructed to free itself, the loose sand would be drawn up the iron tube, and the lower end of the pile being thus eased by loosening and drawing away the strata from its foot driving might recommence, and thus the two operations facilitate each other in alternate succession. Again, that beautiful invention the screw-pile, I should think, might be constructed with a tube in its centre through which an augur might be passed and worked with alternate power and effect.

I throw out these few hints to practical mechanics, there is a long winter for cogitation on the subject, and when the calm days of spring set in, I hope the scientific and adventurous will have better tools provided for their operations.

I am, &c.

H. B. MARTIN,

To the Editor, &c. *Harbour-Master.*

CHINESE METAPHORS.

THE few sentences here given will exhibit some of the most current notions of the Chinese upon the heavens, and metaphors drawn from them. The explanations are also those of the Chinese. Few people relish racy sayings and neatly turned allusions better than this people, and few use them more frequently.

1. When the primeval chaos was first separated, then the dual powers began to be fixed.

The idea of chaos is expressed by bubbling, turbid water; heaven and earth are the dual powers; before the chaos was separated, these two powers were mingled and pent up as a chick *in ovo;* but when the renowned Pwankoo appeared, who was the offspring of these powers, then their distinction and operation were apparent. *Pwan* means a basin or receiver, referring to the shell of the egg; *koo* usually means ancient; but here it means (we are told) solid, to secure, intending to show how the first man Pwankoo was hatched from the primeval chaos by the dual powers, and then settled and exhibited the arrangement of causes which produced him—(we would add)—a mode of explaining the creation peculiarly Chinese.

2. The light and pure parts of chaos ascended and floated, forming heaven.

3. The heavy and foul parts of chaos descended and solidified, forming earth.

Gods are the noble (*yang*) spirits of heaven; demons are the ignoble (*yin*) effluence of earth. The light and pure ether was 10,800 years in rising and forming heaven; the glorious and animated portions concreted and made the sun, moon, planets, and stars, which when completed all moved in harmonious concert. The heavy and foul parts that descended were also 10,800 years in solidifying and forming the globe; from the best were made the hills, rivers, and fountains, and when all where completed, cities, and towns arose.

4. The sun is the focus of all the male principles.

5. The moon is the type of the great female principle.

The sun is the lord of life; like a great prince, he nourishes and bestows his favors; the, moon, his spouse or queen, is matched to him; together they arrange and marshal their nobles and courtiers, *i. e.* the stars and planets.

6. The rainbow is called *tae tung*, and is the impure vapor of heaven and earth.

7. The toad in the moon is the bright spirit of the moon.

When the foul vapors rise from the earth, and meet those descending from the sky, a rainbow is the product; it is always opposite to and tallies with the sun, and is duplicated. The Chinese fable that Chang-go drank the liquor of immortality, and straightway ascended to the moon, where she was changed into a toad, which they always trace in the face of the moon.

8. A whirlwind is called a ram's horn.

9. A flash of lightning is called the Thunderer's whip.

10. When the flakes of snow fly in sixes, it is a sign of a fruitful year.

Snow and rain come from the earth, they do not descend from the high heaven. The flakes of snow and the petals of flowers are usually in fives, and when the snow is in sixes it shows a predominance of the *yin* principle, or that of the earth, and by consequence that there will be much rain.

11. "The sun is up three rods," is to say that you are late.

12. "The dogs of Shuh barking at the sun," is a metaphor for those who learn little from what they see.

13. "The oxen of Woo panting at the full moon," ridicules those who are excssively timid.

The hills of the country of Shuh were so high that the days were very short, and the dogs on seeing the sun were terrified, and set up a simultaneous howl. The country of Woo had oxen which feared the heat, and seeing the moon, began to pant, supposing it to be the sun; just as Poo Fun, who, fearing the cold, shivered as he saw the north through a glass screen.

14. 'To cover one's-self with the stars, and to put on the moon,' speaks of a fleet post travelling early and late.

15. 'To be washed by the rain, and combed by the wind,' is a figure for the hard toil of those who are exposed to the weather.

16. To be busy without a purpose is like the clouds driven about without a thought; *i. e.* such a man is at the mercy of circumstances, as the clouds are driven by the wind.

17. A benevolence which extends to all around is likened to the vivifying spring having legs; *i. e.* its diffusive goodness is like the heat of spring upon vegetation.

18. When one makes a present to another to show his respect, he says, '[In giving this] I have the simplicity of the man who presumed to teach his betters to sun themselves.'

19. When one engages another to be his advocate, he [politely] says, 'I wish to put my case upon a strength able to turn heaven.'

In the Sung dynasty, there was a clodpole sunning himself one day; and, being ignorant that the empire contained large palaces with deep apartments, or that people wore silks and furs, he said to his wife, 'people do not know that the sun is warm to their backs; I will go and report it to the king, and he will certainly give me a large reward.'—'To turn heaven' refers to a talented statesman of the Sung dynasty, who by his wise counsels turned the purposes of the emperor, and saved the country from disaster.

20. The kindness which moves one to save another from death is termed a second creation.

21. The affection which induces one to rescue another from death is called a 'second heaven.'

22. He whose power easily vanishes (*i. e.* depends on the whim of the sovereign) is called 'an ice hill.'

23. The morning stars resemble wise and good men who are neglected and forgotten.

24. The echo of thunder resembles different accounts agreeing.

25. The man who frets himself exceedingly to no use, how does he differ from the man of Ke who feared the sky would fall on him?

This man of Ke was so afraid lest the sky should fall on him, and he be able to find no place to escape to, that he could hardly eat or sleep. One told him that the sky was made of solid ether and would not fall. 'If so,' he replied, 'the heavenly bodies ought not fall down (*i. e.* set).' They are merely the bright spots of ether, and do not injure when they fall.' On hearing this, he was appeased.

26. He who undertakes an affair for which he is not capable, nowise differs from Kwafoo who chased the sun.

27. When Confucius finished the *Chun Tsew* and *Heaou King*, the rainbow was changed to pearls.

28. The Hyades desire wind, Sagittarius desires rain; they are like two people whose thoughts and wishes cannot agree.

NAUTICAL COLLECTIONS.

Addenda to the "Old Tar's" Paper on the Destruction of Merchant Ships, in p. 130.

MANY years ago, I recollect that the master of a vessel, I believe a brig, called the Harlequin, was hung at Bristol, for having, in a voyage to Cornwall with a fictitious cargo, scuttled and sunk the vessel, in order to cheat the underwriters;—the carpenter who was the instru-

ment, turned king's evidence,—I believe the vessel was subsequently raised. For the sake of human nature we trust and hope the instances are rare.

Among the many causes which lead to the loss of vessels, errors in the tables used in navigation may be added. I know an instance of a very fine ship having been wrecked upon the Grand Cayman, from an error in the table of the sun's declination; but until very lately, I was not at all aware of the extent to which these errors have been detected. The following extract will, perhaps, surprise most Nautical readers, and serve to show how devoted to the one absorbing object, the individual ought to be, who undertakes such a work as the Nautical Almanac, or any other containing tables of reference, as also that *several* heads should be employed in the examination for the purpose of detecting errors.

Instances of errors detected in tables.—In a "multiplication table, (as far as 100 times 1000,) constructed by Dr. Hutton, for the Board of Longitude," forty errors were discovered in one single page, taken at random. In the solar and lunar tables, from whence the computations were formerly made for the Nautical Almanac, more than 500 errors were found by one person. In the "tables requisite to be used with the Nautical Almanac," more than 1000 errors were detected by a single individual. In certain tables, published by the Board of Longitude, a table of errata, containing 1,100 errors was affixed! It was afterwards found necessary to have an errata of the errata! and one instance has been known of an erratum of the errata of the errata!!

The sources of errors are so numerous, that it is difficult to counteract or remedy them all; for instance, some result from falsely computing, and others from falsely transcribing; some from the compositor taking wrong types, and others from a displacement of the types, by the inking-ball used by the printers, and then by the faulty replacement of such types by the pressmen.

To remedy these defects, Mr. Babbage invented his self-calculating machine, which may very well rank as one of the most wonderful productions of human genius known, but it is not yet complete. I cannot refrain from copying the following passage.

"We believe that the machine,* so far as it is yet constructed, is national property, and that Mr. Babbage has neither received, nor desires to receive, any pecuniary benefit from the invention. If this be really the case, it is difficult to conceive a more honourable position than that which the inventor must occupy, in the estimation of all to whom the well-being of society, and its advancement in knowledge, is a desirable object." Z.

Cables.

It may not be unimportant to direct attention to the case of the Pique frigate, at anchor during a hurricane. It would appear in this instance, that, more dependance is to be placed on the hempen cable than that of chain.† This may probably, in some measure, arise from

* It has been already Twenty years in progress.

† The Impregnable, 104, parted her chain cable at Plymouth during a late gale.

the slight elastic property of the former; also from the difficulty of insuring perfection in all the links of a metal cable; as, likewise, from heavy strain causing the links to yield, or stretch unequally, by which certain portions are weakened, and yield to the jerks in the actions of heaving and setting of the ship.

If such a quality as elasticity be essential in relieving the great strain which must necessarily exist, when a cable is at its utmost tension from the force of a violent wind on the supported body, would not the Coir cable answer better than any other, supposing it to be of equal strength with that of hemp, upon such an occasion?

It is perhaps questionable whether the cocoa-nut fibre of which the coir cable is made, being short, would bear an equal steady strain, when laid into rope, with one of hemp; but although not intrinsically as strong, would not the property of stretching and contracting, in degree far exceeding hemp, make up for any deficiency in point of strength? To obtain this quality in a greater degree than possessed already, it is worthy of consideration whether the use of india-rubber, in the manufacture of all cable-laid rope, for the use of anchors, would not be beneficial.

For ordinary uses the *coir* cable is, I believe, objected to on account of its extreme buoyancy, (its lightness is a positive advantage, as it lessens manual labour,) but it is nevertheless extensively used in the East Indies, and has to stand the test of many a furious typhoon.

There is another cable of somewhat similar properties, manufactured from a species of grass, vulgarly called "Bass," (its botanical name, unknown,) much used by the occidental Spaniards.

Have any experiments been tried with the three sorts of cables, in order to determine their respective quality of strength?

GROUND TACKLE.

Veering of the Wind.

THE long-established axiom of seamen respecting the instability of wind which veers against the sun, appears to be deserving of every confidence. I do not recollect an instance to the contrary since my first familiarity with the ocean, and on shore I have met with none in more than two years' close observations daily; but the strongest confirmatory reason for the truth of the fact is that, in the southern hemisphere, the reverse happens; that is, to expect a change of wind to become steady it must veer against the sun.

I have but recently been made acquainted with this curious, and not unimportant fact, regarding the action of the wind; my informant being a naval officer of great experience in both hemispheres. Comparing this with the remarkable example of the gyration of the wind in circular storms which has been pointed out by Colonel Reid, may we not consider that the veering of the wind in ordinary cases is governed by a fixed law of nature? Hence the northern distich:—

> "When the wind veers against the sun,
> Trust it not, for back it will run."

Another doggerel was common among the prime old tars of the re-

nowned city of "Brigstowe", and I was assured by one of the best and most gallant seamen of that port, that, during near a century, from the observations of his father and himself, it was found correct:

"An east wind of Saturday's moon,
Will not last until Sunday's noon."

The philosophy of wind, or rather of the winds, is still in its infancy; such a remarkable circumstance, supposing it to be invariable, appears a curious enigma, and is too deep for me to presume to philosophise upon, I therefore leave it to the acute sagacity of the meteorological savans.

A CLERK OF THE WEATHER-OFFICE.

Gyration of the Water-Spout.

YOUR notice, Mr. Editor, of the direction of the rotary motion of the fluid in a water-spout, as seen by Captain Barnett, R.N., at Nassau, New Providence, agrees with the observations of Colonel Reid, made at Bermuda, as stated to the British Association, in September last, at Glasgow, by Sir David Brewster.

The extract from the letter of the talented Governor of the Bermudas is as follows: "Three days ago (*i. e.* on the 14th of August 1840,) I had a fine opportunity of observing a water-spout under my house, and could, with a spy-glass distinctly observe that, at the surface of the sea, it was revolving like the hands of a watch; and the same observation was made at a telegraph station near government house."

This is the fifth account well authenticated in north latitude: all five revolved in the same way. RECORD.

Geographical Terms.—Entrance to a River.

IT seems strange that we have no specific hydrographical term in our language expressive of the outer extreme of a river. The common word *mouth* seems not suited to the general taste, perhaps, more on account of its inelegant sound than from its unfitness as far as its meaning goes. Hence, it has given place to the French *embouchure*, very generally among writers; but in colloquial language it appears to be considered too long; too great a mouthful, as it were, to please every Englishman, notwithstanding his disposition for the introduction of foreign phrases. Indeed, it cannot be denied, whether it proceeds from their constitutional taciturnity, or other cause, that Englishmen have imbibed a decided partiality for abbreviating words: in the provincial idioms we have abundant examples of this propensity.

The Spaniards have "entrada," independent of the vulgar "boca;" but there is a disinclination to borrow from such a source. The ancient British term "aber," which is still used by the Welch, although sounding pretty enough when prefixed to the name of a river, would, perhaps, be considered too abrupt for general use: as little would the Saxon "muth" be tolerated.

But, although fancying that, we are a little too fastidious in these matters, I am not an advocate for indiscriminate substitutions; nor have I any desire to follow blindly our trans-atlantic brethren in their aptitude for coining words. But, on such an occasion as this, where the poverty of our language tempts us to risk a literary forgery, to supply our want of mouth, we may help ourselves without leave to a very tempting foreign *morceau*, without being subjected to a prosecution from the censor of the hydrographical mint office, should there be such an institution.

Near to the imboccatura, or entrance of the noted river Tiber is, or, perhaps, more properly speaking, was, the Port of Ostia. Now, taking this name as a root, let us graft upon the stock, a branch, and, we shall have Ostiary,* the entrance of a river. The word is smooth, and goes off the tongue "glibly," no small recommendation; and its foreign original would, I imagine, be no objection to the naturalization of the derivative here, especially as we have a gap to fill up, and our language is a compound of others.

I beg to submit this to the piquant taste of our talented surveyors, both maritime and civil; and having thus, Mr. Editor, brought the *flood* of my argument to an *end*, I shall remain to the *termination* of life's *current*,

Your devoted correspondent,
AN ANCIENT MARINER.

[We shall leave this in the hands of our readers, but cannot see why our correspondent should despise, in the first case, the first word which he uses for the same purpose, viz. "entrance."—ED. N.M.]

Newfoundland.

THERE is no geographical *im*-proper name so familiar to the ears of her Majesty's maritime subjects, "gentle and simple," as this counterfeit compound? Eternally are they saluted with the dulcet sounds of "*Newfoundland fish, water fish!*" from piscatory dames and demoiselles, as if fate had decreed that the ungrateful act of so naming it should be dinned in our ears until justice be done to the merits of the Anglo-Venetian family.

I am, Mr. Editor, presumptuous enough, and I hope to be forgiven to marvel, at times, whether those sounds ever sweep through the air, around the hydrographical office, like the wail of a departed spirit demanding that justice should be done to the memory of the discoverer.

> One single record in thy chart I claim,
> Nor isle, nor cape, *yet* bears Cabota's name!

Shall the appeal be in vain?

With a full conviction of the reasonableness of the demand being undeniable, I advocate (though strong alone in zeal) the case of one who worthily led the way for a Drake, a Cook, and a Parry; and who on the score of *priority* and *originality*, may rightly be considered as *not* even *second* to Columbus himself?

That bold and clever seaman Sebastian Cabot, as I believe it is settled

* Preferable to the Latin term Ostium.

that the father did not make the voyage,) who enjoyed the first land, (whether it were island or main has been doubted), and descried in the Western Atlantic, "*Prima Vista*," certainly possessed more practical good sense than he who thought he could improve the name by altering it to Newfoundland, as if time were never to grow old! It is surprising that such a misnomer should have been tolerated beyond the day. The re-discovery, if such it could be called, (the name implies as much) could not warrant such an appellation. The supercession was unjustifiable under any circumstances, and an insult to the memory of Cabot, which has been most disgracefully and ungratefully neglected.

If it should be urged that Prima Vista belongs to some part of the coast of Labrador, then we may claim St. John, for the island as named by Cabot; the principal harbour retains that name. Why not then call the island generally Cabot's Land? The fear of confusion, depend upon it, Sir, is, to be somewhat vulgar, "All my eye and Betty Martin." Has any resulted from calling "Plymouth Dock," by the more euphonious "Devonport," or, "New Holland," "Australia," &c. &c.!

MISNOMER.

QUARANTINE REGULATIONS.

[The following extract, from the *Malta Chronicle*, places in a very strong light some of the absurdities of the existing Quarantine Regulations at that emporium of Quarantine, Malta.]

We have much satisfaction in being able to announce that the subject of the Quarantine Regulations, has of late engaged the attention of many influential persons, and we are led to hope that ere long the whole topic will undergo a complete revision, and that these regulations will be modified in a manner more conformable to the spirit of the age, and to the increased activity in the Naval and Commercial world. It is not our present purpose to go into the whole of this much vexed question, but merely to point out one of its flagrant absurdities, the removal of which is so perfectly simple and safe that the alteration could not alarm the most timorous on the score of contagion, while it would prove of the greatest advantage to the public service at large, and a great boon to many persons in private life.

The sole avowed purpose of the Quarantine system, is to prevent the transmission of disease, and chiefly of the Plague, from place to place; and it would be idle to deny that this is an object of great importance. But it is no less obvious that the measures adopted in this view should be so contrived as to cause the smallest possible amount of inconvenience to the public and to individuals. Now, we have no hesitation in saying that this principle is, on many occasions, altogether lost sight of, and that great inconvenience, loss of time, heavy expences, and other evils, are produced by the present system, in a manner having so little reference to the real object as to be fairly called, not only wanton departures from common sense, but positive infractions of the liberty of the subject.

The inconveniences of the Quarantine laws naturally divide themselves into three branches; one of which only we propose at present to

touch upon. These are, first, the loss of time, frequent loss of market, and various heavy expenses, incurred by merchant ships, while detained in quarantine durance: secondly, the trouble, privations, expense, and loss of valuable time, and frequent injury of health, to which travellers, and all other persons, unaccustomed to imprisonment, are subjected, when moving from east to west in the Mediterranean: thirdly, the great inconvenience to the public service of the state, caused by the quarantine imposed on Her Majesty's Ships, an inconvenience which is not only directly injurious to the service, but one which is indirectly productive of no small mischief by the very natural dissatisfaction which it often gives rise to among the officers and crew of Her Majesty's Ships.

It is with this branch of the subject that we propose at present to deal, but only with one particular point of it, which we select because we cannot doubt that we shall have the sympathy and concurrence in all respects of every rational minded person, in our recommendation that so manifest an inconsistency should be done away with.

A certain number of days of quarantine discipline, after leaving a suspected port, are considered essential to security against infection. For example eighteen days for a ship coming from Beyrout, twenty-two from Alexandria, five from the Ionian Islands and Patras, twelve from Tunis, and so on. Now, without entering at present into the questions which regulate these distinctions, which may or may not be well grounded, we come at once to the anomaly which stares every one in the face at Malta. We allude to the local regulation which refuses to allow the time a ship of war has been at sea on her passage to count as a part of the required time. On what principle this can be refused we cannot conceive, unless it be alleged that in the interval, that is during her passage, the ship may have held intercourse with an infected ship, or touched at an infected port. But if this be all, can it be doubted that a formal report, under the hand of the captain and surgeon, would prove amply sufficient to allay the scruples of the most timid?

In these days of rigorous responsibility, to say nothing of the publicity and certainty of detection in the event of any such report being otherwise than strictly correct, it is surely a most unworthy reproach on the character of naval men, to hesitate to receive their official declaration, on a simple matter of fact, as well known to every man and boy on board, as to the captain himself. In former times this privilege existed, and men-of-war were released from quarantine the moment they completed the required number of days, *counting from the date of sailing from the suspected port*. This reasonable allowance was withdrawn, it is said, in consequence of some captain having abused the indulgence and failed to communicate that on her passage she boarded a vessel from a suspected place. If this were true, it ought to have been dealt with very differently. The captain ought to have been brought to a court-martial, (as he would be now, most assuredly,) and if found guilty, he should have been punished. Instead of which, for the last twenty years, and upwards the *whole naval force in the Mediterranean*, arriving at Malta, from the Levant, are positively punished for this alleged, and probably imaginary, offence, of one officer! The consequence is,

that whatever be the length of passage, however healthy the ship may be, or however exact her discipline and state of cleanliness, the beginning of her quarantine takes date only from the time of her arrival at Malta!

This most unfair and utterly needless regulation affecting her Majesty's ships and packets, brings along with it some great practical absurdities.

In the first place, the regulation which prevents the days at sea, or the passage of one of her Majesty's ships, being counted as part of the quarantine time at Malta, does not apply either to Gibraltar or to England, at both of which places pratique is given the moment the requisite time has been completed, counting the passage from Malta as part of the time required to make up the quarantine commenced at Malta. On what possible principle, can the same privilege be denied to Her Majesty's ships arriving at Malta, the head-quarters of the navy in the Mediterranean.

The next anomaly has arisen from the superior speed of steam vessels, and as it is one which presents the matter in a very striking light, we shall illustrate it by several recent examples, to the correctness of which we pledge ourselves.

H. M. Steam ship Stromboli left Beyrout on Saturday afternoon the 28th of August last, and reached Malta on the 2nd of September, on which day her quarantine commenced. As this lasted eighteen days, she obtained pratique on the 19th.

H. M. Ship Powerful sailed from the same place, Beyrout, on the morning of the next day, viz. Sunday the 29th, but instead of being only five days on her passage, as the steamer was, she was twenty days; that is to say, she anchored in Malta on the 18th of Sept.; but having been seen from Valetta on the evening before, her quarantine period took date from the 17th. It also lasted eighteen days, so that she did not get pratique till the 4th of October, that is fifteen days after the Stromboli had been released; though the two ships sailed from the same port within a few hours of each other, neither of them held any intercourse with other ships in the interval, and were both perfectly healthy all the time!

Again, H. M. S. Rodney left Alexandria on Tuesday the 21st of September last, and arrived at Malta on Monday the 4th October, when her quarantine of twenty-two days commenced, so that she was not released till Monday the 25th October. Meanwhile the Oriental (a private company's steamer) left Alexandria five days after the Rodney; but, by reason of her superior speed, she reached Malta on the 30th, when the quarantine of her passengers, who remained here, commenced. They got pratique on the 19th, that is after twenty days confinement. But the Rodney's officers and crew were kept till the 25th or six days later, though they had sailed five days before the Oriental.

This is inconsistent enough, it may be thought, but we are at a loss to conjecture by what principle of extra unfairness it happened that the unfortunate people of the Rodney, merely for being in Her Majesty's service, should have twenty-two days of this irksome surveillance, not

including the time passed at sea, when the passengers by a private steamer had only twenty, including the time they passed at sea.

We shall give only one more instance out of the many we could cite.

H. M. S. Inconstant left Beyrout on the 20th September, and the Phoenix steam-frigate on the 26th that is six days after her. The steamer arrived here first, and thus got pratique on the 25th October, but the Inconstant will not be released till the 27th.

To persons resident at Malta it is needless to state the excessive inconvenience which is caused to the public service by this protracted quarantine imposed so despotically, and unreasonably on Her Majesty's Ships. But to persons at a distance we may be allowed to mention that the whole action of the naval service is benumbed and retarded by the interference of the quarantine. To return worn out stores, and to get on board new ones, are rendered by it affairs of infinite trouble. Indeed it may be said that the whole course of a ship's refitting is often materially counteracted, and much of that promptitude and energetic activity which characterise such a process elsewhere, is necessarily damped by the confinement and multifarious other restrictions of the quarantine.

(To be continued.)

SURVEY OF THE GOLD COAST OF AFRICA.—*By Captain Vidal, R.N.*

TWELVE chronometers were provided by the Admiralty,—ten of which were embarked in the Etna, and two in the Raven. To those of the Etna, a small cabin was appropriated on the lower deck, near the after hatchway, in which was a massive oak table secured to the lower deck by copper knees, and free in every part from the surrounding bulkheads. This table was divided into compartments, lined with cotton wadding, covered with coarse woollen cloth, and each watch was secured within its own compartment by a packing of the same material. With a view to secure all possible care and uniformity in the handling of the chronometers, they were placed entirely under the management of one person, my assistant, Mr. Church.* To avoid any interference with the occupations of the day, they were wound and compared every morning at six o'clock, and whenever observations were made for the critical determination of time, they were again compared at noon. On such occasions, the pocket chronometer employed in the observations, was compared with the standard watch before and after the morning observations were made;—at noon, also, and again before and after the afternoon observations.

At Portsmouth, the chronometers were rated by transits of the sun, but as rapidity of movement was deemed a very important consideration, the method by equal altitudes of the sun was adopted at all the succeeding stations, as most simple and expeditious.

The sextant and artificial horizon were the only instruments required for this purpose; they admitted of easy conveyance, and immediate application, and with careful management were susceptible of

* Now Lieutenant Church, R.N.

great accuracy. To promote this latter object, two observers were employed and several instruments, the indexes of which were fixed at different altitudes, and left untouched, merely timing the contacts of the upper and lower limbs of the sun, in his passage from and return to those altitudes.

Lastly, in reference to the chronometers employed on this occasion, their rates having been carefully determined at the first and last stations of the series of meridian distances, measured via Sierra Leone and Fernando Po, the resulting longitudes were corrected for change of rate, on the supposition that such change had taken place uniformly in the interval between the times of rating.

The latitudes of the chronometric stations were not observed at the times of measuring the meridian distances, that the pocket watch might be exclusively devoted to the latter observations, and also, because we could not then afford the time they would necessarily require. These, therefore, and indeed the latitudes of all the principal stations, were determined as we arrived at them in the regular course of the survey, and are without exception, derived from circum-meridian observations of stars, situated to the north and south of the zenith. Sextants and artificial horizons were here also, the instruments generally used in taking these observations, but occasionally a repeating circle was employed. There were usually two observers, sometimes three. The chronometers were rated during a period of eight days, by transits of the sun, at the observatory in Portsmouth yard, after their embarkation. The vessels sailed from England on the 18th of December, and reached Madeira on the 7th of January, after a long and boisterous passage.

By observations obtained at the house of Mr. Veitch, the consul, the longitude of that spot, from a mean of eleven chronometers, was found to be 16° 54′ 9″ west, the interval between the observations in England and those at Madeira being twenty days.

From Madeira, to Mr. Bartlett's, the British consul at Santa Cruz, Tenerife, in an interval of seven days, the meridian distance was 40° 13′ east, from Tenerife to Quail Island. Porto Praya in seven days, 7° 16′ 8″ west from Quail Island to Sandy Beach, on Crawford Island. Isles de Los in nine days, 9° 42′ 7″ east, and from Crawford Island to the North Battery, at Sierra Leone, in two days 33° 58′ east. From these measurements, the longitude of the several places stand thus:—

British Consul's Garden.			
House Madeira	16°	54′	9″
Do. Santa Cruz, Tenerife	16	14	77
Quail Island, Porto Praya, St. Jago	23	31	57
Sandy Beach, Crawford Island	13	48	85
Sierra Leone, North Battery	13	15	27

The preceding observations had mainly for their object to verify the positions of those places visited on the run out, which had been determined by Captain Owen, when in command of the Severn, in 1822, and the Eden, in 1827, especially off Sierra Leone, as on its meridian depend all the longitudes of the west coast of Africa included in this survey.

A further motive was to test the value of the different watches. Capt. Owen has fixed the longitude of the North Battery at Sierra Leone, in 13° 14′ 2″ west, and as our passage out occupied a period of time exceeding six weeks, during which we underwent great change of temperature, from the winter of England to the oppressive heat at Sierra Leone, from 50° to 84° of Fahrenheit, by which the rates of the chronometers were materially affected. I did not venture to make any alteration in this longitude, but adopted it as the true meridian. The rates of the chronometers were determined from equal altitudes of the sun at the North Battery, at Sierra Leone, between the 3rd and 11th of February, and from thence the meridian distance was measured to.

Cape Mesurada, by ten chronometers in five days	2°	25′	59″ E.
To Cape Palmas in eleven days . .	5	30	24
To Accoodah Cove, Cape Three Points, in sixteen days	11	12	37
To Titway flag-staff, near Cape St. Paul, in nineteen days	14	13	64
To Benin River, Hope Factory, in twenty-four days	18	21	1
And to Adelaide Isles, Fernando Po, in thirty days	22	01	79

The interval between the last observations at Sierra Leone, and the first at Fernando Po, amounting to a month, it was thought hazardous to the accuracy of the measurements to extend it further, before submitting the rates of the chronometers to a fresh examination. They were accordingly rated at Adelaide Islet, between the 13th and 20th of March, and thence the meridian distance was measured to the Crown Sand, in Corisco Bay, in an interval of eleven days 38° 4′ east, which completed the proposed series of chronometric stations.

Returning from Fernando Po to Sierra Leone, in May and June, on our way back to the Canary Islands, the meridian distance between those two places was again measured by the same ten chronometers 22° 01′ 8″ west, which agrees perfectly with that first obtained. The interval between the observations on each occasion was exactly thirty days.

By the above measurements, in combination with the latitudes at the same points, all the headlands along our whole line of operations became fixed, and our next duty was, to complete the survey of the coast between them by the following method.

The Etna and Raven, or the decked barge were anchored off one of these primary stations, at a sufficient distance from each other to form with it, or some remarkable object upon it, an equilateral or nearly equilateral triangle, the length of the side formed by the two vessels was then measured by the velocity of sound. To obviate any errors which might arise from the relative positions of the vessels with respect to the wind, three guns were fired alternately on board of each at intervals of three minutes. The time elapsed between the flash and the report was measured by the beats of a pocket chronometer, and the mean result of these six intervals was used to calculate the distance.

The side of the triangle constituting the base thus determined, usually measured from four to five nautic miles.

At a given signal, previously concerted by the officers conducting the work, simultaneous angles were taken between the vessels, and all such prominent objects as the land presented, and their true bearings were

obtained. From this base, and these angles, the points, trees, forts, and other conspicuous objects were laid down on the plan, the vessels remaining in their respective positions, until the accuracy of the whole work, depending on them, was verified.

The outline and representation of the coast in all its details, was confided to one particular officer, whose attention was exclusively directed to this important portion of the survey. It was performed in a light boat, in which he proceeded close alongshore, following the sinuosities of the coast, and sketching its peculiar features. His position, whenever required on this track was determined by measuring the angles subtended by the vessels and other fixed objects around him; and while he was thus employed other boats were despatched to take the soundings, their places being fixed in a similar manner by angles between the known points.

Each boat besides being furnished with a general set of signals had her own distinguishing flag, which she hoisted whenever a line of direction to her from the ship was considered necessary to fix her place; a circumstance of frequent occurrence on a low, monotonous, and thickly wooded coast. When the boats were sufficiently advanced to render the Etna at her first station no longer useful, she weighed and moved on to her next station ahead No. 3, which she took up on a previously arranged bearing from the Raven, at anchor in station No. 2; and at a certain distance from her, determined by a given angle, subtended by that vessel and one of the fixed objects on the land, so calculated as to form when practicable, an equilateral triangle as before.

So soon as the Etna anchored in her next station No. 3, and was secure, a signal was made to that effect, and on its being answered by the Raven, the angles to all objects around were again simultaneously taken, and then that vessel weighed in her turn, and proceeded to station No. 4, which she took up in the same manner as that described for the Etna. This mode of operation was employed along the entire coast from Cape Mesurada to Quitta, and as the prevailing winds were from the south-westward, the work was carried on from west to east, or from windward to the leeward stations, which enabled the ship to pick up her boats at close of day. From the masthead of the ship as she lay at anchor in her station, the shore was carefully examined through a telescope, and angles taken to every rocky point, detached rocks, extremes of sandy bays, peaks, forts, or any other remarkable objects that could be seen, which might assist the officer charged with the coast survey, and act also as a check upon his work.

It may be well to mention that it was our invariable practice to project the station of the vessels in advance with reference to the true meridian, and that the same practice extended to all long lines of direction to distant peaks, or other objects. Intermediate stations were determined at distances varying from forty to seventy miles of each other by carefully observed latitudes and meridian distances; the latter being measured from the nearest primary station. The triangulation between these minor points, was then adjusted to them, and the work continued from a fresh base.

From Cape Mesurada to Cape Three Points, the coast was traced and laid down by the late Mr. Willson. For the delineation of it, from

thence to Cape Paul, I am indebted to the taste and talents of Mr. Church.

There is a bank of soundings along the whole of this coast, varying considerably in its distance from the shore. The extent and general character of it was determined by running out lines of soundings from shoal water near the land to its outer edge, until no bottom could be found with 200 fathoms of line, and thence continuing them in again to the coast.

The inner parts of these lines are fixed by the land objects so long as they continue sufficiently distinct; the outer extremities depend generally on latitudes and meridian distances, the latter having reference to the stations of the survey near it; but in some instances they are laid down from courses, (corrected for various influences, including the effect of currents,) and from distances measured by the patent log. From Cape Mesurada to Cape Three Points, this bank was traced by Lieut. Bedford, in the Raven. From Cape Three Points to Quitta is principally by the Etna.

The currents were regulary registered at the several anchorages, to the depth of three fathoms, and numerous observations were made under other circumstances with a view to its determination.

The times of high water, and the rise of tide were ascertained by tide poles erected at most of the principal stations, but the high surf which prevails so generally on the greater part of this coast was very unfavorable for such observations.

The magnetic variation was found by theodolite on shore, whenever it could be done conveniently, and the ship was swung at several places for the local attraction, by which to correct the variations obtained afloat.

The magnetic dip and horizontal intensity, were also observed at all the primary stations.

The heights of many objects, both inland and on the coast, were found approximately from their angles of elevation above the horizon, measured by sextants at numerous stations of the vessels.

The whole coast comprised between Cape St. Ann and St. Paul as represented in the charts and plans, now delivered into the office, is as completely original as if we had been its first discoverers: and I may make the same observations on those of the Canary Islands. In no instance have the works of others been copied, or in any way introduced into the survey.

The Variation of the Compass.

(Continued from p. 765.)

Royal Observatory, Oct. 24th, 1841,
Magnetical and Meteorological Department.

Mean Magnetic Variation for September 1841—23° 24′ 17″.

Mean Magnetic Dip for September.

At 9 A.M.	At 3 P.M.
1841—68° 43′	68° 38′

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

Erratum in p. 765, in "Mean Magnetic dip"—*for* "July" *read* "August."

ACCOUCHEMENT OF HER MAJESTY.

Birth of the Prince of Wales.

Buckingham Palace, November 9th, 1841.

This morning, at twelve minutes before eleven, the Queen was happily delivered of a Prince. His Royal Highness Prince Albert, her Royal Highness the Duchess of Kent, several Lords of her Majesty's Most Honourable Privy Council, and the Ladies of her Majesty's Bedchamber, being present.

This great and important news was immediately made known to the town by the firing of the Park and Tower Guns: and the Privy Council being assembled, as soon as possible thereupon, at the Council-Chamber, Whitehall, it was ordered, that a Form of Thanksgiving for the Queen's safe delivery of a Prince be prepared by his Grace the Archbishop of Canterbury, to be used in all Churches and Chapels throughout England and Wales, and the town of Berwick-upon-Tweed, on Sunday the 14th of November, or the Sunday after the respective minister shall receive the same.

Her Majesty and the Infant Prince are, God be praised, both doing well.

It is rather a remarkable circumstance that the Infant Prince of Wales should have been born on the morning of Lord Mayor's Day, only a few hours after Mr. Alderman Pirie had been sworn into office, and who is now in consequence entitled to a Baronetcy. It is however generally supposed, that that honour will be conferred both on the present Lord Mayor, and his predecessor Mr. Alderman Johnson.

In the course of the day government messengers were despatched to Foreign Courts, with the important and gratifying intelligence of the Birth of a HEIR to the THRONE of the BRITISH REALMS.

The Prince of Wales. The important event of yesterday produced a far greater degree of joyous excitement, than has been exhibited on any occasion within the memory of the oldest inhabitant of the metropolis.

The 9th of November—Lord Mayor's Day, as it is familiarly termed, is ever held, amongst the citizens at least, as a day of jubilee. It was yesterday converted into one universal holiday by all classes and conditions of her Majesty's subjects.

The auspicious event, although daily anticipated for the last fortnight, has come upon the country with a pleasurable sudden surprise; and those grateful emotions are considerably enhanced by the official announcement with which the Gazette Extraordinary concludes:—Her Majesty and the infant prince are, God be praised, both doing well.

Although not generally known to the public until half-past eleven, there were certain indications in the immediate vicinity of Buckingham Palace which prepared those who take early exercise in St. James's Park for an event of the happy issue of which all felt more or less anxiety. During the whole of Monday her Majesty continued in full enjoyment of her usual health and spirits, and even, as stated in the Court Circular, took her accustomed walk in the palace gardens, accompanied only by her Royal Consort Prince Albert. There were no commands to the royal table on that evening, three covers only being laid, for the Queen, Prince Albert, and the Duchess of Kent, the latter illustrious personage having been a constant inmate of the palace since her Royal Highness's return from the Continent. Soon after dinner was served her Majesty complained of fatigue, and evinced such other symptoms as induced the Duchess of Kent to direct the immediate attendance of Sir James Clark and Dr. Locock in the ante-room.—The result of the conference was, that a special messenger was despatched at a quarter past 10 o'clock that night to the residence of Sir Robert Peel, in Whitehall Gardens, to apprise the Right Hon. Baronet that the accouchement of her Majesty might possibly take place before the next morning. On receipt of this intelligence, expresses were sent off to

the Archbishop of Canterbury, the Bishop of London, and to the several Cabinet Ministers, in order that they might hold themselves in readiness should their presence be required during the night. Her Majesty, however, becoming more composed towards midnight, Sir James Clark and Dr. Locock judged that her Majesty's accouchement would not, in all probability, take place for several hours, and this opinion they communicated to Prince Albert, through the Lord Steward and the Lord Chamberlain. The medical officers, already named, however, deemed it right to send for Dr. Ferguson and Mr. Blagden, both of whom promptly attended the summons, and remained at the palace during the whole night.

Between six and seven o'clock yesterday morning her Majesty's symptoms assuming the distinctive character peculiar to her critical situation, the several Cabinet Ministers and great officers of state were summoned by special messengers, whose departure from Pimlico Gate attracted, even at that early hour of the morning, the notice of the inhabitants of the neighbouring streets, and the intelligence soon spread to more remote quarters of the West-end. Sir Robert Peel arrived at the palace a few minutes before eight o'clock, and was received by the Lord Steward. The Right Hon. Baronet had an immediate interview of the medical gentlemen, and was assured that her Majesty was going on most favorably. The Archbishop of Canterbury, the Lord Chancellor, and the Bishop of London, arrived at 10 o'clock, and were speedily followed by the Duke of Wellington, the Duke of Buckingham, the Earl of Aberdeen, Sir James Graham, the Marquis of Exeter, and several other noblemen and commoners, members of the Cabinet or Privy Council.

Her Majesty's accouchement took place (as stated in the Gazette Extraordinary,) at 12 minutes before 11 o'clock. In the room with her Majesty were Prince Albert, the Duchess of Kent, Dr. Locock, and the other medical attendants, Sir James Clark, Dr. Ferguson, and Mr. Blagden; and Mrs. Lilly, the nurse.—The royal infant was immediately after birth taken into the room where the Cabinet Ministers and great officers of state were waiting, and the safety of her Majesty and that of the infant prince having been ascertained, the various persons summoned to witness the interesting event quitted the palace, with the exception of Sir Robert Peel, who remained until 12 o'clock, when the Right Hon. Baronet proceeded to Whitehall, to attend a Privy Council, specially summoned, at which the Gazette Extraordinary was ordered to be issued, announcing her Majesty's safe accouchement, and the birth of a prince. The council rose at two o'clock, and as the several ministers departed, the populace cheered loudly for "the Queen and Prince of Wales," the intelligence having by that time spread all over the western extremity of the metropolis.

The Union Jack was hoisted from the steeples of the several parish churches, and the Park and Tower guns fired royal salutes, half minute time, at two o'clock, the ships and steamers below bridge displaying the gayest ensigns. This, together with the gorgeous pageant exhibited on the river, during the aquatic procession of the new Lord Mayor to and from Westminster. rendered "Old Father Thames" a most attractive feature in the combined festivities of the day.

The Duke of Wellington looked in better health and in higher spirits than for many years past. After the Council broke up, his Grace, who went on horseback to the Palace, entered the park through the Horse Guards-gate, and meeting with the Earl of Liverpool, who was on foot, his Grace alighted, and giving his horse to the groom, took the Earl of Liverpool's arm, and walked across the park, followed by an immense concourse of persons, who cheered his Grace most vehemently all the way up Constitution-hill, and until he entered Apsley House. The Duke frequently acknowledged the congratulations of the multitude, and seemed pleased with the spontaneous fervour of their enthusiasm.

Several parties were given in commemoration of the auspicious event.

Chinese Intelligence.

Official accounts of the late Naval and Military Operations in China.

(Concluded from p. 776.)

H.M.S. Hyacinth, off Canton, May 26th, 10 p.m.

Gentlemen.—I have the honour to acquaint you, that I am in communication with the officers of the Chinese Government, concerning the settlement of difficulties in this province upon the following conditions:—

1. The Imperial Commissioners and all the troops, other than those of the province, to quit the city within six days, and remove to a distance exceeding sixty miles.

2. 6,000,000 dollars to be paid in one week, for the use of the Crown of England, 1,000,000 payable before to-morrow at sunset.

3. British troops to remain in their actual positions till the whole sum be paid. No additional preparations on either side; but all British troops and ships-of-war to return without the Bocca Tigris as soon as the whole be paid. Quangtong also to be evacuated, but not to be re-armed by the Chinese Government, till all the difficulties are adjusted between the two Governments.

4. The loss occasioned by the burning of the Spanish brig Bilbaino, and all losses occasioned by the destruction of the factories, to be paid within one week.

For the purpose of completing this arrangement, I have to request that you will be pleased to suspend hostilities till noon.

I have, &c.,

Charles Elliot,

To Major-Gen. Sir H. Gough, K.C.B., and Capt. Sir H. L. F. Senhouse, K.C.H., &c. *Her Majesty's Plenipotentiary.*

H.M.S. Hyacinth, off Canton, May 27th, 3 p.m.

Gentlemen.—Herewith I have the honour to transmit you an English version of the arrangement this day concluded with the officers of the Chinese Government, and also of the full authority given to the Kwang-chow-Foo to act for their Excellencies.

I shall take an early opportunity of communicating with you again upon this subject.

I have, &c.,

Charles Elliot,

To Major-Gen. Sir H. Gough, &c. *Her Majesty's Plenipotentiary.*

Terms of agreement granted to the Officers of the Chinese Government, resident within the city of Canton, on the 27th May, 1841.

1. It is required that the three Imperial Commissioners, and all the troops, other than those of the province, quit the city within six days, and proceed to a distance of upwards of sixty miles.

2. 6,000,000 dollars to be paid in one week, for the use of the Crown of England, counting from the 27th of May; 1,000,000 dollars payable before sunset of the said 27th day of May.

3. For the present, the British troops to remain in their actual positions; no additional preparations for hostilities to be made on either side. If the whole sum agreed upon be not paid within seven days, it shall be increased to 7,000,000 dollars; if not within fourteen days, to 8,000,000 dollars; if not within twenty days, to 9,000,000 dollars. When the whole shall be paid, all the

British forces to return without the Bocca Tigris; and Quangtong and all fortified places within the river to be restored, but not to be re-armed till all affairs are settled between the two nations.'

4. Losses occasioned by the plunder of the factories, and by the destruction of the Spanish brig Bilbaino, in 1839, to be paid within one week.

5. It is required that the Kwang-chow-Foo shall produce full powers to conclude this arrangement on the part of the three Commissioners, the General of the Tartar garrison, the Governor-General, and the Fooyuen of Kwang-tung.

(Seal of the Kwang-chow-Foo.)

Written the 26th, agreed to the 27th of May, 1841.

(True copy.) J. R. Morrison,
Acting Secretary and Treasurer.

Yishan, Generalissimo; Lungwan and Yang Fang, joint-Commissioners; Atsinga, General of the Garrison; Kekung, Governor of the two Kwangs; and Eliang, Lieut.-Governor of Quangtong, hereby issue instructions to the Kwang-chow-Foo.

The Plenipotentiary of the English nation being now willing to observe a truce, and make arrangements for peace, the said Kwang-chow-Foo will conduct the details of the pacific arrangement and settlement. He is not, upon any plea, to excuse himself. These are his instructions.

The foregoing to the Kwang-chow-Foo, thus be it.

Taoukwang, 21st year, 4th month, 7th day. (May 27th 1841.)

[Signed and sealed by the Generalissimo, the Governor of the two Kwangs, the Joint Commissioners, and the Fooyuen of Kwangtung.]

Return of killed and wounded in her Majesty's forces at the attack on Canton, from the 23rd to the 30th of May, 1841.

May 25th.—Killed	9	Wounded 68
May 30th. "	5	" 23
Total	14	91

Officers killed and wounded.

Killed.—Major Becher, Deputy Quarter-Master-General, died from over fatigue. Lieut. Fox, of the Nimrod.

Wounded.—Mr. Walter Kendall, mate of the Nimrod, lost his leg, dangerously. Mr. W. T. Bate, mate of the Blenheim, slightly. Lieut. Morshead, of the Hyacinth, slightly. Mr. Peter Barclay, mate of the Hyacinth, slightly. Mr. E. Fitzgerald, mate of the Modeste, dangerously. Mr. William Pearce, ditto, slightly. Mr. Hall, commanding the Nemesis, severely burnt. Mr. Vaughan, assistant-surgeon of the Algerine, slightly. Lieut. Rundell, of the Madras Sappers and Miners, dangerously. Capt. Sargeant, 18th Royal Irish, severely. Lieut. Hilliard, ditto, slightly. Lieut. Edwards, ditto, severely. Lieut. Pearson, 49th, severely. Lieut. Johnstone, 26th, slightly. Ensign Berkeley, 27th Madras Native Infantry, severely.

Return of the ordnance mounted in the fort on the heights above Canton, when stormed and captured on the 25th of May, 1841, by the forces under the command of Major-Gen. Sir H. Gough, K.C.B., Commanding Expeditionary Force serving in China.

Names of the Forts.	*Guns of all Calibre.*
Yung-Kang-Tai	13
She-Ting-Paon	6
Paon-Keih-Tai	11
Kong-Keih-Tai	19
Grand Total	49

Remarks.—In each fort a number of gingals and a considerable quantity of powder found.

J. KNOWLES, *Capt.*
Com. Artillery Brigade.
A. S. H. MOUNTAIN, *Lieut.-Col.*
Deputy-Adjutant-Gen. Exp. Force.
H. GOUGH, *Major-Gen.*
Com. Expeditionary Force.

EXTRACTS from a despatch from Capt. Le Fleming Senhouse, KCH., to Commodore Sir J. J. Gordon Bremer, CB. and KCH., commander-in-chief, &c., dated "Heights above Canton, May 29th, 1841," continued on board Her Majesty's Ship Blenheim, French River, June 2, 1841.

I closed my former letter with the details of our proceedings up to the moment the expedition was about to leave Hongkong for Canton. I have now the gratification to enter upon the details of a succession of operations, highly honourable, I trust, to Her Majesty's arms; and by which the large and populous city of Canton has been laid in complete submission at the feet of the Queen's forces.

No overt act of hostility had taken place up to the 21st of May, except remounting the guns in the Shamien battery, but the Chinese appear to have been perfectly ready for attack. All remained quiet in the river until about 11 o'clock P.M., when an attempt was made with fire-rafts to burn the advanced vessels. This attack not only totally failed, but was followed up by a gallant attack on the Shamien battery, and the silencing of it by the vessels of the squadron, under the immediate superintendance of Capt. Herbert of the Calliope, and the destruction of a large flotilla of fire vessels, which the Chinese had been preparing, and had brought out of the branch of the river which leads north of the town. About the same time, though later in the night, the Alligator was attacked off Howqua's fort; and to show how necessary it was to have been always on our guard, the fire-junks came up with the flood-tide in a direction with the merchant-vessels at Whampoa, where all seemed to sleep in security.

No. 1. Capt. Kuper's account of his prompt and decisive conduct in repelling the attack I have also the honour to forward.

Opinions were uncertain as to the feasibility of entering the northward branch of the river, and at floating at low water. To determine this I availed myself once more of the zeal and great ability of Commander Belcher, who most handsomely volunteered to explore it with his own boats, assisted with three others from the Pylades, and Modeste, and Algerine, all placed under the command of that gallant and judicious officer Lieut. Goldsmith of the Druid, who was attached to the Blenheim, in that ship's launch, and who had orders to protect Commander Belcher in his surveying operations.

The Major-General and myself went to Canton to make a reconnoissance and a personal inspection on the same day, the 23d. In our progress we observed a firing and explosions in the direction of Capt. Belcher's party; and Commander Belcher's letter, a copy of which I enclose (No. 2), gives the detail of a gallant and spirited affair which took place in the creek. At 11 o'clock, Commander Belcher returned with the gratifying intelligence that he had discovered an excellent landing-place on a pier, with water enough for the Sulphur close to it at low water. The ground directly around it rose in low hills, and a line of hills appeared to continue to the height near the city, although there might be swampy ground in the small valleys dividing them.

Our united force consisted of the following ships and vessels:—

Forming the Macao fort division—Blenheim, Blonde, Sulphur, Hyacinth, Nimrod, Modeste, Pylades, Cruizer, Columbine, Algerine, Starling, Atalanta, steamer, and Nemesis, steamer.

Forming the Whampoa division—Calliope, Conway, Herald, and Alligator.

At Quang-tong, in the Bocca Tigris—Wellesley, sent up her marines and 100 seamen.

The above ships and vessels comprised in their crews, officers, seamen, and marines inclusive, about 3,200 men, out of which about 1,000 officers, seamen, and marines were landed to serve with the army. The military force under that gallant, distinguished, and experienced officer, Major-Gen. Sir Hugh Gough, comprised Her Majesty's 49th regt., 311 in number; 37th Madras Native Infantry, 240; Bengal Volunteers, 79; the Royal Artillery, 38; Madras Artillery, 232; Sappers and Miners, 171; Her Majesty's 18th Royal Irish, 535; and Her Majesty's 26th Cameronians, 317—making about 2,223.

Capt. Herbert was stationed at Whampoa with the Calliope, Conway, Herald, and Alligator, and was directed on the 24th to take the command of the force afforded by the four vessels under his orders, and pushing up with the flood-tide with such vessels as could proceed, or with the boats of the ships, endeavour to take possession of and secure the arsenal. I informed him that the ships near the factory would drop down and secure the Dutch fort, and to keep up an enfilading fire on the face of the works thrown up in front of the city, where I understood many guns were mounted. I left it to his own judgment to act according to circumstances, in endeavouring to drive the enemy from the French fort, and to endeavour to open the communications with the ships-of-war to the westward, and with the commanding officer of the left column stationed at the factories. I beg to enclose a letter (No. 3) I have received from Capt. Herbert, detailing the part he took in the affair that followed, where the usual gallantry and zeal were displayed by Her Majesty's seamen and Royal Marines. Commander Warren, with his gig's crew, placing his colours first on the walls of the French fort. Commander Warren, was also ordered with the ships under his command, to take up his anchorage in line along the town from the Western fort as far as the factory, and to cannonade the exterior to prevent the enemy from firing on the right column as it passed. After the enemy's fire had been silenced he was to leave the Nimrod, and another vessel to keep the enemy in check at that quarter, and to detach the rest of his force to secure the Dutch fort, and to place them with the Atalanta so as to enfilade the line of batteries in front of the city, but he was not to expose his ships to the front fire of the heavy guns said to be placed there until the enemy were shaken in their position.

The landing of the left column was placed under his particular charge, and it was not to land until he had made the signal.

So effectually and vigorously did Commander Warren execute these instructions, that when the right column passed his station everything had been completed and all was still. The detail of this gallant affair is annexed in a copy of his letter (No. 4), where I regret to observe the loss of men was more than had been ordinary.

No. 5.—A return of the killed and wounded is here added, and, although it may appear strange to see the wounded of the army in a naval report, yet the two corps had been so entirely mingled together, their services so blended, and such intimate harmony has existed, that it would be difficult to make any separation between the acts of either or the circumstances that concerned them. The two officers who had fallen, Major Becher of the Indian army, Deputy-Quarter-Master-General, a very old officer who had served ably in the Burmese war, and Lieut. Fox, first of the Nimrod, have united the regret of all by their characters and services. The same shot took off the legs of Lieut. Fox and of Mr. Kendal, his shipmate, the gunnery mate of the Nimrod. The former fell a victim to his wound; the latter has survived amputation. I thought it would gratify Mr. Kendal to give him an acting commission as lieutenant of the Nimrod in Lieut. Fox's vacancy, on the field of battle, until your pleasure is known, though his wound will disable him from doing his duty perhaps for some time, and may oblige him to go home.

I have the honour to enclose lists of the officers who have been personally engaged in the operations on shore and afloat in boats, but it must be remem-

bered that the duties and fatigues of Commander Pritchard, of the Blenheim, and of those who remained on board their respective ships, were increased in the same ratio as their numbers were diminished, and that the ultimate success is the attainment of the whole body, each working in his particular sphere. The names of many will be seen who have already, distinguished themselves at Chuenpee, Anunghoy, Quang-tong, and the many affairs in the Canton river, and no doubt have already, like their brother officers at Acre, been so fortunate as to secure their country's notice. Never was there a finer set of zealous, able commanders. Commanders Belcher and Warren have only continued in that path of able and judicious service on which they have so long travelled—their own services will always attract attention. Of the lieutenants, Lieutenants J. Pearce, Goldsmith, Watson, Sir F. Nicholson, and Morshead, first of their respective vessels, may perhaps be named without injury to all others, who well played their parts; to Lieut. Kellett, of the Starling, I am much obliged; and Lieut. Mason, of the Algerine, has won his promotion by a long series of gallant and brave services. I beg to acknowledge the zeal and assistance I have had from every captain and officer of the squadron whom I have had the happiness to command.

(No. 1.)

H.M.S. Alligator, off Howqua's Folly, May 22d.

Sir.—I have the honour to acquaint you that last night, shortly after 12 o'clock, an attack was made by the Chinese upon her Majesty's ship Alligator, under my command, by fire-rafts.

They were chained in pairs, and brought down in a direct line for the ships on a flood tide; owing to the confined position I was in, and the sunken junks and line of stakes astern, I could not ship; but by steering the ship, and the activity of Lieut. Stewart, first of this ship, and Messrs. Woolcombe and Baker, mates, in command of the boats, they were towed clear, although they passed within ten yards of the bows: as I had reason to believe that a considerable force was assembled in the vicinity, to take advantage of any accident that might occur, I fired several shots on both sides to clear the banks. No damage has been sustained.

I have, &c.,

Augustus L. Kuper, *Act.-Capt.*

To Capt. T. Herbert,
Commanding the advanced Squadron.

(No. 2.)

Off Canton, May 23rd.

Sir.—In pursuance of your directions, I proceeded up the creek on the western side of the Canton, in order to examine the nature of the country, our force consisting of the Druid's launch, Lieut. Goldsmith, (1st lieut. of the ship,) Sulphur's pinnace, and two cutters, Modeste, Pylades, and Algerine's cutters, Starling's cutter, and my gig, the two first-named boats carrying guns.

On approaching Neishang, where the boats of the squadron were yesterday engaged, I observed the "fast boats" of the enemy collected in great numbers; part retreated by a creek to the left, but shortly after returned and manifested a disposition to impede our progress, by firing guns and drawing up across the creek. Our advance, and notice of our determination by a round from each of the boats carrying guns, put them to flight, and in a very short period thirteen fast boats, five war-junks, and small craft collected, amounting to twenty-eight in all, were in flames. Fire-rafts were in readiness on the banks of the creek, but too well secured by chains, and therefore beyond our ability to destroy during our short stay.

The whole force behaved with their usual gallantry, and the commander of

the division under my direction, (Lieut. Goldsmith,) afforded me that steady determined support, which so particularly distinguishes him, and which caused me to ask you for his co-operation.

The enemy being posted in force on a hill above us, prevented me, in obedience to your orders, from exposing my small party by an attempt to dislodge them. But I fully succeeded in effecting my reconnoitre, by being hoisted to the masthead of the largest junk, whence I was able to survey the whole surrounding country.

From that examination, I am happy to acquaint you that landing on solid ground is perfectly practicable; that the advance to the batteries situated on the hills north of Canton is apparently easy, and I have every reason to believe that our artillery will not meet with an extraordinary difficulty.

On my return, I landed at the Mandarin temple at Tsing-poo, where I found sand bags and five small guns, which were spiked and thrown into the sea. This temple, with other large commodious buildings, will afford ample quarters for the troops which may first be landed.

No casualties whatever occurred, I brought out with me one large fast boat of sixty oars, the boat from which the Mandarin escaped; and in pursuance of your separate orders, collected vessels for the conveyance of 2,000 soldiers.

I have the honour to enclose a list of boats and officers engaged.

I have, &c.,

E. Belcher, *Com.*

To Capt. Sir H. L. F. Senhouse, K.C.H. &c.

(No. 3.)

H.M. sloop Modeste, off Canton, May 26th.

Sir.—I received your orders of the 24th inst., a little before noon on that day, and immediately proceeded with the boats and marines of the Calliope and Conway to the Alligator, off Howqua's fort, making the signal to the Herald to close and send her boats.

I ordered Capt. Kuper to move the Alligator up to the right bank of the river, past Napiers Fort, where he anchored her in her own draught, and the boats were pushed up as far as possible, without exposing them to the enemy's fire. A little before sunset I observed the Algerine moving down past the Dutch fort, and she shortly anchored and engaged a battery on the Canton side, which she silenced. Anxious to co-operate with her, I went a-head with Capt. Bethune to reconnoitre, but was stopped by a shot through my boat from the French fort.

I remained under cover of the point until dark, when I sent Capt. Bethune with a division of boats to support her, and a concerted signal having been made, I joined her with the whole force at 2 A.M.

The arsenal being secured, I reconnoitred the line of defence, and perceived that it could not be attacked with advantage without having heavier guns in position than those of the Algerine. I therefore lost no time in ordering the other sloops down, and at the same time put myself in communication with Major Pratt, commanding her Majesty's 26th, in the factory.

Finding that the Modeste was the only vessel likely to be got across the bar, and there appearing even some doubt of her accomplishing the passage, I fitted shell guns in three of the captured war-junks.

Capt. Eyres having succeeded by great exertion in getting his vessel over the bar, I this morning moved her, the Algerine, and the gun junks on the French fort; the enemy deserted the upper defence, and about 9 A.M. opened the fire from the fort, which was speedily silenced; I then cleared the beach by a few well directed broadsides, and made the signal to advance. Capt. Bethune immediately landed on shore with the storming party, and the fort was carried in the most gallant style; the whole line of defence, extending about two miles

from the factory, which, with the exception of the French fort, had been lately constructed in the strongest manner, has been destroyed, and communication is opened with the ships at Napiers Fort. The guns destroyed are sixty-four in number, including four ten and a half inch calibre; the Dutch fort was not armed.

To that excellent and able officer, Capt. Bethune, I feel particularly indebted, and my best thanks are also due to Commanders Warren and Gifford, who assisted in the attack. This is the sixth time I have had occasion to mention the gallant conduct of Commander Eyres. Lieut. Mason, commanding the Algerine, acquitted himself entirely to my satisfaction, and both Capt. Eyres and himself speak in the highest terms of the assistance they received from Lieut. Shute, and Mr. Dolling, mate, their seconds in command, and all the other officers and men.

Lieutenants Haskell and Hay, senior of Cruizer and Pylades, directed the guns in the junk with the greatest ability. Capt. Bethune speaks in the highest terms of Lieutenants Watson, Beadon, Coryton, Collinson, Morshead, Hayes, Hamilton, and Brown, master, as also Lieut. Hayes of the Bombay marine, and of all the other officers and men employed more immediately under his orders, a list of whom is annexed. The party of Marines was commanded by Lieut. Urquhart, assisted by Lieut. Marriott, Lieut. Somerville, Agent of Transports, aided by some boats of the transports. Lieut. Gabbot, of the Madras Artillery, threw shells with great effect from one of the junks, and Major Pratt offered in the handsomest manner to co-operate in the attack, if required.

I enclose a list of vessels captured, afloat, and building.

I have, &c.,

T. Herbert,

Capt. H.M.S. Calliope, and Senior Officer present.

To Capt. Sir H. L. F. Senhouse, K.C.H., &c.

List of officers employed on the 26th of May, 1841, off Canton.

In the Calliope—Mr. Watson, lieutenant; Mr. D'Eyncourt, lieutenant; Mr. Brown, master, Messrs. Daly, Rivers, Le Vescomt, Egerton, and Taylor, mates; and Dr. Butler, assistant-surgeon.

In the Conway—Messrs. Beadon and Coryton, lieutenants; Messrs. Read and Kane, mates; and Mr. Forster, second-master.

In the Alligator—Mr. Stewart, lieutenant; and Messrs. Woolcombe and Baker, mates.

In the Hyacinth—Mr. Morshead, lieutenant; Messrs. Barclay and Osborne, mates; Dr. Robertson, assistant-surgeon.

In the Cruizer—Messrs. Haskell and Hayes, lieutenants; Messrs. Drake and Bryant, mates,

In the Pylades—Mr. Hay, lieutenant; Messrs. Jeffrys and Sauley, mates; Dr. Tweeddale, assistant-surgeon.

In the Columbine—Mr. Hamilton, lieutenant; Mr. Miller, mate; and Dr. Crawford, assistant-surgeon.

In the Hon. Company's steamer Atalanta—Mr. Grieve, lieutenant; Mr. Eden, midshipman.

In the Rattlesnake—Messrs. Cowell and Waddington, second-masters; Mr. Brodie, volunteer of the first class.

Lieut. Somerville, with boats of the Minerva, Sulimany, and Marion.

Lieutenants Urquhart and Marriott, of the Royal Marines, Conway and Alligator.

Lieut. Collinson, attached to the surveying department, was exceedingly active in getting the ships into their positions.

T. Herbert,

Captain and Senior Officer present.

RETURN of war junks and row-boats, &c. found in the Chinese naval arsenal on the 27th of May, 1841.

Twelve war junks building, 24 row-boats, and 12 war junks lying at anchor off the arsenal.

A large quantity of timber, gun-carriages, and various stores.

T. HERBERT,
Captain and Senior Officer present.

(No. 4.)

H.M.S. Hyacinth, off Canton, May 26th.

SIR.—I have the honour to acquaint you that immediately on the receipt of your letter of the 24th inst., I weighed with the advanced squadron, and ordered Her Majesty's sloop Nimrod to attack the Samien Fort on the west end of the suburbs, supported by her Majesty's sloop under my command, being placed abreast of the English factory, to silence and dislodge any troops that might be there, and also with a view of covering the landing of her Majesty's 26th Regiment; her Majesty's sloops Modeste, Cruiser, and Columbine, taking up a position to attack the Dutch Folly fort, and to enfilade the line of batteries lately thrown up in front of the city to the eastward of that fort, On the ships taking up their position, three fire vessels were sent adrift, and, although the tide was running very strongly, by timely despatch of boats they were enabled to clear the ships and tow three on shore and set fire to the suburbs.

In the performance of this service they opened their fire on the boats and shipping. In half an hour the enemy were completely silenced to the eastward of the Dutch Folly fort. After reconnoitring the factory, and finding it quite deserted, I immediately ordered the pre-concerted signal for Her Majesty's brig Algerine, and Atalanta, steamer, to approach, with Her Majesty's 26th regiment., when they landed and took possession of the factory, without the slightest casualty. This service being completed, I ordered Lieut. Mason, commanding Her Majesty's brig Algerine, to proceed to attack a fort to the eastward, which I feel much pleasure in reporting to you was done in a particularly spirited and gallant style by that officer; but, perceiving the firing to be so heavy from the forts, I ordered the boats of Her Majesty's ships to her support—Her Majesty's sloop Hyacinth's, under Lieut. Stewart, and Mr. P. Barclay, mate; Modeste's, Mr. Fitzgerald, mate; Cruizer's, Lieut. Haskell, and Mr. T. J. Drake, mate; Pylades, Lieut. Hay, and Columbine's, Lieuts. Hamilton and Helpman, and Mr. Miller, mate. It is gratifying to me to inform you, by half-past seven the fort of eleven guns was silenced, and the guns spiked, under a heavy fire of gingals and musketry from houses; at the same time I regret to add, it was not done without considerable loss. It would be impossible to particularize upon an occasion where every officer and man was engaged, against an enemy defending themselves with much vigour at all points, but in addition to my best thanks and acknowledgments to Commanders Barlow, Eyres, Gifford, Anson, and Clarke, and Lieut. Mason, I hope you will give me leave to recommend to your particular notice my own First-Lieut., W. H. Morshead, who was wounded in the hand in a personal engagement with a Mandarin. Lieut. Mason, of the Algerine, speaks in the highest terms of the conduct of Mr. Dolling, mate, and Mr. Higgs, second-master of that vessel. I cannot conclude without expressing my approbation of the steadiness of Commander Rogers, of the Indian navy, in conducting the Atalanta to her station.

I have, &c.,
W. WARREN, *Commander.*

To Capt. Sir H. L. F. Senhouse, K.C.H., &c.

(No. 5.)

GENERAL return of killed and wounded in her Majesty's forces at the attack on Canton, from the 23rd to the 30th of May, 1841.

Blenheim—Killed 2; Wounded 9; 1 officer, 1 Royal Artillery, 1 acting-corporal Royal Marines, and 8 seamen.
Wellesley—Wounded 6; 3 seamen and 3 royal marines.
Blonde—Killed 1; Wounded 1; 1 seaman and 1 royal marine.
Calliope—Wounded 1 seaman.
Hyacinth—Wounded 2 officers and 3 seamen.
Nimrod—Killed 2; Wounded 4; 2 officers and 4 seamen.
Modeste—Killed 1; Wounded 9; 2 officers and 8 seamen.
Columbine—Wounded 2 seamen.
Algerine—Wounded 4; 1 officer, 2 seamen, and royal marine.
Nemesis—Wounded 1 officer.
Madras Artillery, 1 wounded; Sappers and Miners, 1 wounded; 18th Royal Irish, 2 killed, 19 wounded; 26th Cameronians, 3 killed, 15 wounded; 49th regiment, 1 killed, 17 wounded; 37th Native Infantry, 1 killed, 13 wounded; Bengal Volunteers, 1 wounded, Camp followers, 1 killed, 3 wounded; Staff, 1 killed.

Total, 15 killed, 112 wounded.

The following is an outline of the instructions which Sir Henry Pottinger has received from Her Majesty's Government for his guidance in the settlement of the British claims on the Chinese:—His Excellency is to demand fifteen millions of dollars, as an indemnity for the opium seized by Lin, the expenses of the war, and the Hong debts. Immediate payment of a portion of the above sum, equal to the estimated value of the opium, is to be required: the remainder to be paid by instalments within five years, and to bear interest in the mean time at the rate of five per cent. per annum. Sir Henry has further been directed not to negociate with any Mandarin who does not hold plenary powers from his Sovereign. He is also to insist on a British Envoy being allowed to reside at Pekin, and hold direct communication with the Emperor. All the principal ports to be thrown open to foreign trade, and at each of them ground sufficient in extent for the erection of factories is to be ceded to the English. Hongkong is to be retained by the British as a permanent settlement. The Home Government appears to have resolved on bringing the Celestials to their senses. Energetic measures have been adopted for this purpose by despatching additional troops and vessels of war to China. We may therefore hope that within a year from the present time the holders of opium scrip will receive their just dues, and the trade between Great Britain and China will be placed on a firm and honorable basis.

Public Notice to Her Majesty's Subjects.

Macao, June 10, 1840.

Her Majesty's Plenipotentiary thinks it necessary to warn all Her Majesty's subjects that he considers the entrance of British shipping within the river under present circumstances, imprudent and unsafe, and recommends that they should forthwith proceed to Hongkong.

He has further to declare that any attempt of the Chinese authorities to interfere with, or obstruct the freedom of trade and intercourse with Hongkong, will be answered with a close blockade of the port of Canton.

Charles Elliot.

A Proclamation.

It is hereby declared to the merchants and traders of Canton and all parts of the empire, that they and their ships have free permission to resort to and trade

at the port of Hongkong, where they will receive full protection from the high officers of the British nation; and Hongkong being of the Chinese empire, neither will there be any charges on imports and exports payable to the British Government.

And it is further clearly declared, that there will be an immediate embargo upon the port of Canton, and the large ports of the empire, if there be the least obstruction to the freedom of Hongkong.

Persons bringing information to the British officers which shall lead to the detection of pirates will be liberally rewarded; and the pirate will be taken and delivered over to the officers of the Chinese government for punishment.

At Macao, this 7th day of June, 1841.

(From the *Canton Press*, June 19.)

Our accounts from Canton are to the 14th. At that time there was no interruption to trade, and we learn that several chops of teas had been sent to the American ships at Whampoa. The English ships there were discharging their cargoes. The foreign residents at Canton were few, not exceeding, we believe, four or five in number, American and English. The latter, however, we think, will consider it expedient to leave, particularly since Capt. Elliot only a few days since gave their friends warning, that he considered their stay at Canton, or the remaining of their ships at Whampoa, any thing but safe.

Death of Sir H. Le Fleming Senhouse.

It is with deep and sincere sorrow, we have to announce to our readers the death of Sir Humphrey Le Fleming Senhouse, K.C.B., senior naval officer of Her Majesty in China. This much-lamented event took place on board Her Majesty's ship Blenheim, on Monday, the 14th inst., at half-past eight in the morning, and the immediate cause of the veteran commander's death was a violent fever brought on by physical and mental exertions, and by exposure to the sun during the late expedition to Canton. It was, we understand, Sir F. Senhouse's wish to be buried in Macao, in preference to the British settlement of Hongkong, by which the late gallant officer seemed to call in question the probability of the permanent settlement of that island.

The mortal remains of Sir Fleming Senhouse were consequently brought to this city in the steamer Nemesis, and arrived here on the evening of last Wednesday, when notice was given by Capt. Herbert, now senior naval officer, that the funeral would take place on the morning following, and that the funeral procession would form at Capt. Elliot's house at five o'clock.

The following was the order of the procession :—

The band of the Governor of Macao.
A Colonel's Guard of Portuguese troops.
Lieutenant Pitman, Royal Navy, chief mourner.
Captain Clarke, of Her Majesty's ship Columbine, bearing the decorations of the deceased officer.
The Coffin
Borne by Twelve Sailors belonging to Her Majesty's ship Blenheim.

Pall-bearers—Captain Bourchier, R.N. Colonel Mountain,
Captain Smith, R.N. Colonel Morris,
Captain Kuper, R.N. Major Johnson;

Followed by the governor of Macao and staff; Major-General Sir Hugh Gough and staff; Captain Herbert, senior officer of the fleet; Mr. Johnston, Deputy-superintendent; and about seventy naval and military officers, and almost all the British and foreign community. The band during the progress of the pro-

cession towards the British burial-ground played a funeral march; the funeral service was read by the Rev. Mr. Cooper, chaplain of Her Majesty's ship Bleuheim, and after the body had been consigned to the earth the Portuguese guard fired three volleys over the grave.

Typhoon in the China Seas.

The following account of the effects of the typhoon has been sent us by Commander Collinson, employed surveying on the China Coast.

In the typhoon I had a most providential escape. We left Macao in the Young Hebe at 10 A.M. on the 20th. The day was sultry, and it fell calm about two, when we anchored. The tide setting at five we weighed again, and drifted to within three miles of the south-west point of Lantao, where we anchored about nine, the Louisa cutter with the Commodore and Captain Elliott on board, being about three miles to the south-east.

Towards midnight, a breeze sprung up from the north, with rain. This increased rapidly so much so, that at one we weighed and ran for shelter under Lantao, making every precaution for a typhoon, by getting everything on deck.

It rained incessantly during the night, and about seven in the morning the gale increased. The drift from the sea was so great during the squalls, that we could not see a cable's length before us. At 11h. 30m., in a violent squall, we were thrown over, gunwhale under, and cut away the masts to righten her. The second anchor was let go, this having been reserved in case of slipping and trying to run to sea. The wind gradually drew round from N.N.W. to E.N.E., which it was now, and at 3 P.M. E.S.E. During the lulls, we discovered that we were driving and passed within half a cable's length of Chungchow-sye, under the lee of which having drifted about five miles, we brought up, and the gale abated the following morning, when we rigged jury-masts and got back to Macao.

The cutter Louisa was not so fortunate, being further to the southward she was more exposed to the sea, and drifted down upon Tchow, to avoid which they slipped and made sail with a shred of the mainsail. The master being knocked overboard by the boom was drowned. After running the gauntlet through the Luna Islets, and twice narrowly escaped the rocks, they were wrecked on the island Myloo, and made prisoners by the Chinese the following morning. Fortunately not being known they succeeded in prevailing on the Chinese to convey them to Macao for three thousand dollars. Had it been known to the Chinese that fifty thousand dollars was offered for either of them alive, or thirty thousand for either of their heads, it would have been all over with them.

A small schooner privateer with 100,000 dollars on board, on her way from Hongkong to Macao has not been heard of since the hurricane. One man belonging to the Rose, a schooner with 180,000 dollars on board, from the west coast, was picked up at sea by the Good Success, which vessel brought in also forty-eight Chinese, and the Coromandel three.

The Sulphur and Royalist (an opium clipper bought by the commo-

dore,) totally dismasted, and the Wellesley much damaged by vessels getting foul of her. The Starling was missing for three days, but was found at last off Fansyak, having parted from her anchors, and drifted through the Capsing Moon until brought up with her gun.

On the 25th we had another severe gale which veered round to the south-west, and obliged the Algerine to cut away her masts to prevent her going on shore.

Chinese Further Intelligence.

(From the Malta Chronicle, 26th October, 1841.)

The Hon. Company's steamer, Atalanta, arrived here on Saturday evening, the 26th ult., from China, bringing intelligence to the 24th of August. Among her passengers are Commodore Sir J. J. G. Bremer, nd the late Commissioner Capt. C. Elliot.

The only intelligence of importance she brings with her as to our operations there, is a plain, manly, straitforward proclamation by Sir H. Pottinger, the new Plenipotentiary.

The Sesostres, which left this on the 17th July, reached Macao on the 9th of August.

A frightful typhoon had blown over the Chinese Seas on the 21st and 26th July, and done fearful damage to the shipping.

The following is an extract of a private letter from Hongkong, dated 1st of August:—The fleet consists of

74 Wellesley, Captain Maitland—Sir W., Commander-in-Chief.
74 Blenheim, Captain Herbert
38 Blonde, Captain Bourchier
28 Alligator, Captain Pritchard
42 Druid Captain Smith
26 Herald, Captain Nias
18 Hyacinth; Bentick, surveying vessel; Starling, schooner.
18 Pylades, Capt. Anson; Sesostres, st.-frigate; Queen, armed steamer.
16 Cruizer; 16 Columbine; 18 Modeste; Phlegethon, iron steamer.
10 Algerine; 12 Royalist; 6 Sulphur; Nemesis, iron steamer.

The fleet of transports consists of forty-four vessels: we muster three thousand bayonets.

Everything is in a great state of preparation for our departure, and only wait the arrival of Sir H. Pottinger; and the Queen leaves to-day to bring him over from Macao. The first of our operations is to be the reduction of Amoy, then the devoted Tsing-hae,—where the fleet and forces winter. Strong opposition is expected at Amoy, but no Chinese, or China army can stand against the long-tried courage of the English troops.

Sir G. Bremer hauls down his flag from the Wellesley to-day, and Admiral Sir W. Parker shifts from the Blenheim to that vessel.

Major Malcolm, the seeretary, has been sent with a letter to Canton, advising the government with Sir Henry's arrival, and letting his Highness, the Governor know, that his Excellency would wait the Emperor's reply at Chusan, "being after taking Amoy on the way." This is really and truly acting the Irish Ambassador. The letter to

the Emperor demands payment in full for the opium, the expenses of the war, and a free trade and consular rights. What will his Majesty say to this? This is not dealing with subordinates. We all expect to be soon back. The Emperor will give it; and as Keshen is reported again in power,* there is no doubt he is too knowing to allow their provincial towns to be battered down.

A smart fire consumed Hongkong on the night of the 15th; but the light material of which it is built rendered it easily re-erected. The Phlegethon and Starling have been to Canton to pull up the stakes which our friends have been employed fixing in the river. They have succeeded so far in placing stones, that a junk or two well sunk would fill up the western passage.

19th.—The Nemesis arrived from Macao to-day, to accompany the fleet northward. The 21st is the day fixed upon for a start. This day's return of bayonets is 2,670.

(From the Bombay Overland Courier, Oct. 1st, 1841.)

Rear-Admiral Sir W. Parker and Sir H. Pottinger arrived at Macao in the steamer Sosostres on the 9th of August. Their Excellencies landed on the following morning, and took immediate steps for assuming charge of their respective departments. The former as naval commander-in-chief hoisted his flag in the Blenheim, but subsequently shifted it to the Wellesley, in consequence of Sir J. J. G. Bremer having determined to return home. The commission appointing Sir H. Pottinger sole Plenipotentiary and Chief Superintendent of Trade in China has been published in the Hongkong Gazette, together with a letter from Lord Palmerston. These documents intimate that Sir Henry is only to obey such instructions as he may from time to time receive from her Majesty, the Privy Council, or one of the principal Secretaries of the State. It is evident, therefore, that the Governor-General of India cannot interfere with the proceedings of the expedition.

On the 12th of August, the new Plenipotentiary issued an official notification addressed to Her Britannic Majesty's subjects, and all other foreigners resident in China. This document is couched in terms at once clear and decisive. It has, therefore, given general satisfaction; furnishing a strong contrast to the effect produced by those which emanated from the pen of Captain Elliot. Sir Henry declares that though he shall be most happy to listen to the wishes of all parties, and as far as possible consult their welfare; "it is his intention to devote his undivided energies and thoughts" to the grand object of speedily and satisfactorily terminating the "*War*." He, therefore, will allow no consideration connected with mercantile or other private interests to interfere with the carrying out the stringent measures which he may find it necessary to adopt towards the Chinese. His Excellency has notified to the provincial authorities at Canton, that the existing truce, in reference to that city will be respected by the British, but that the slightest infraction of its terms by the Chinese will lead to immedi-

* Others say he is handed over to the Board of Punishment.

ate hostilities. The Plenipotentiary further warns her Majesty's subjects, as also all other foreigners, against placing themselves or their property within the power of the Chinese, and declares if they do so, it will be at their own peril.

On the 21st of August, a large squadron sailed from Hongkong to the northward. Sir Henry Pottinger had previously despatched his secretary, Major Malcolm, to Canton, with a letter to the local authorities, intimating his having been appointed Plenipotentiary and Minister Extraordinary to the Court of Pekin. A letter for the Emperor was enclosed, and it is reported that Sir Henry intimated his intention of awaiting a reply at Chusan. The imperial commissioners appear to have been much alarmed by the forward movement of the British, and are said to have offered ten millions of taels of silver, in order to prevent the departure of the squadron from Hongkong. For this purpose the Kwan-choo-foo, who is the highest municipal authority at Canton, came to Macao, and had an interview with Sir Henry. This latter very properly refused, and referred the Kwan-choo-foo to his secretary.

Capture of a Slaver.

Admiralty, November 1st, 1841.

A despatch was this day received from Captain William Tucker, the senior officer of her Majesty's ships and vessels on the western coast of Africa, of which the following is a copy:—

H.M.S. Iris, at sea, August 5th, 1841.

Sir.—I beg to transmit, for the information of the Lords Commissioners of the Admiralty, the accompanying duplicate letter from Lieut. Littlehales, commanding her Majesty's brigantine Dolphin, addressed to Captain Nurse, the original of which was forwarded by the Forester, but did not reach either Capt. Nurse or myself, reporting a most successful and gallant attack and capture made by the boats of the Dolphin, under the immediate command of Mr. A. C. Murray, (a mate of six years' standing,) and Mr. John F. Rees, second-master.

I have great pleasure in requesting their lordships' attention to the fifth and sixth paragraphs, which report most strongly the conduct of Messrs. A. C. Murray and J. F. Rees, and of John Smith, (ab.,) who has this day been invalided from the effects of the wound.

At the same time, I beg to add my approbation and admiration of the conduct of those concerned, and of Mr. Rees to state, that since his arrival on this station, he has twice taken a passage in the vessel I have commanded, and proved himself a most zealous and gallant officer, particularly in the destruction of the slave factories at Corisco, by the boats of the Wolverine.

I have, &c.,

(Signed) William Tucker,

To R. More O'Ferrall, Esq., &c. *Capt. and Senior Officer in command.*

H.M. brigantine Dolphin, at sea, June 8th, 1841.

Sir.—In having the honour to make a special report of the detention of the Brazilian brigantine Firme, fully equipped for the slave trade, I trust you will excuse the rather lengthened detail of the circumstances connected with her capture, as I have every reason to hope it would induce you to make the strongest possible report to the Lords Commissioners of the Admiralty, in favor of the two officers in charge of the boats.

At daylight on the morning of Sunday, the 30th day of May, being under easy sail off Whydah, with the wind off the land, our head being to the westward, a brigantine was observed on the lee bow. All sail was immediately made in chase; the stranger soon after doing the same, steering to the southwest. We at first, (probably in consequence of being inshore, and having the land wind stronger,) closed her so much as to rise the top of her hull; but the wind getting light as we drew off, and the stranger increasing her distance, I was induced, at half-past six, to despatch the cutter and gig armed, with Mr. Murray, mate, and Mr. Rees, second-master, under the orders of the former officer, to endeavour to come up with and detain the chase, (evidently a slaver,) before the setting in of the sea breeze.

At nine we observed from aloft the boats apparently pull alongside the stranger, her head being then inshore. Not long after, I had the satisfaction to see her bear up for the Dolphin, which had then made all sail to the light sea breeze, just setting in. Shortly after noon the brigantine passed under our lee, hailing, to say they had captured her, after a resistance of twenty minutes, with, I regret to say, the loss of two seamen killed, Mr. Murray, and one seaman severely, and two others slightly wounded.

On Mr. Murray's appearance on board, I found that, after about two hours and a half pull, they had come up with the chase, the gig being rather a-head; for which the vessel, having no colours flying, as well as the lightness of the wind would permit, bore down, opening a sharp and continued fire of musketry, which was returned; when both boats, after steadily reloading under their fire, cheered and boarded on each quarter. Great resistance was met with in the act of boarding; but a little after Messrs. Murray and Rees, with four or five men, had once got fairly on her deck, most of the crew running below, firing their muskets as they retreated. The bowman of the gig, William Allen, AB., was shot through the heart in the act of laying his oar in, and the bowman of the cutter, William Jacobs, AB., when getting up the side.

I have great pleasure in calling your attention to the conduct of Mr. Murray (mate of six years' standing), who was the first to board, though he was knocked back into the boat with the butt end of a musket, which broke his collar-bone, but immediately clambered up the side again, in the act of which his left hand was nearly severed at the wrist with the blow of a cutlass. Another cut was made at his head, which he fortunately parried, cutting the man down. This circumstance, together with Mr. Rees crossing over at the same moment and cutting down another of the party opposing the boarders on that side, was the occasion of her quick capture. I beg to observe, that this is the second affair of this description in which Mr. Rees, a most active and zealous officer, and who has been constantly away in the Dolphin's boats, has been engaged during his service on the coast, he having been one of the officers who landed at Corisco when that place was destroyed by Capt. Tucker, the senior officer.

I beg also particularly to mention the conduct of John Smith, AB., an old and first-rate seaman, who has served on the coast in her Majesty's ships Ariadne, Brisk, and Athol, five years and a half. He was the first man to board, with his officer, and was engaged with three of the crew at once; his right arm being disabled by the blow of a cutlass and badly fractured, he continued fighting with his left. His life was saved through Mr. Rees cutting down one of the three on him. Of the two seamen who were killed, William Allen and William Jacobs, AB, the first was a very steady well-behaved man, and supported his aged parents, who depended solely on him, giving all his advance, and allotting half his pay to them previous to his leaving England; the other was the smartest seaman in the vessel, and a very well-behaved man. He has left a wife, to whom he also allotted half of his pay.

I trust you will excuse my bringing to your notice the circumstance that the cutter of the Dolphin is but a twenty-foot boat, having at the time only nine persons, including the officer, in her, the gig only six; both boats were soddened from constant blockading, and pulled very heavy, and that the crews had had a

long harassing pull of two hours and a half, under a hot sun, without their breakfasts, after a squally rainy morning, during which they were constantly employed trimming, and making sail. The sweeps of the brigantine were rigged out, which prevented the party boarding by the chains, thereby rendering it much more difficult to get on board, or for more than one or two to get up her side at a time, she being as high out of the water as the Dolphin. Her crew fired well, the shot falling in every direction round and through the boats, and amongst the people, they themselves never showing above the gunwale of the brigantine.

The Firme, a beautiful vessel (179 tons), lately built at Baltimore, was direct from Bahia, and had only just made the land, not having had communication. The regular official papers, with the Brazilian flag, were found on board, proving her to be Brazilian property. There were ten passengers not down in the official list, two or three of whom were to remain at Whydah and other places, as slave agents. They were all I fancy using muskets; at all events they were handing powder up from the cabin, and to persons firing from the stern scuttles in the cabin. I secured them, with the crew, hand and foot, and kept them on bread and water for eight days, landing all at Accra (except those necessary for condemnation), not being able, through the heaviness of the surf, to land them to the eastward.

In consequence of the crew of the prize keeping always beneath the gunwale, and running below after our people got on board, only two were killed; one severely, and six slightly, wounded.

From the passengers we understood, that the captain and crew were determined not to be taken by English men-of war's boats, and had paid the greatest attention to their arms, &c. during the passage.

I have. &c.

(Signed) Ed. Littehales,

To Captain Nurse, Senior Officer, &c. *Lieutenant Commanding.*

Admiralty, November 2nd.

With reference to the above despatch, the Lords Commissioners of the Admiralty have signed a commission, dated the 1st of October, promoting Mr. Augustus Charles Murray, mate, to the rank of lieutenant.

By a minute also dated this day, the Board have directed that Mr. John Fletcher Rees, second-master, be promoted to the rank of master, and that John Smith, able seaman, shall receive a boatswain's warrant, on their severally passing the required examination for their respective ranks.

Nautical Notices.

Hesselo Light, Kattegat.

Hydrographic Office, Admiralty, Oct. 9, 1841.

The Board of Customs at Copenhagen has given notice that—a Lighthouse has been recently erected on the Island of Hesselo, in the Kattegat, and will be lighted in the present month. It will be a revolving light, every revolution occupying one minute in the following order. A very strong light will continue for 11 seconds, this will be succeeded by 19 seconds of a weaker light, the light then becomes altogether invisible for 11 seconds, but will again appear for 19 seconds previous to the return of the strong glare.

The light being 85 feet above the level of the sea will be visible from all parts of the horizon within the distance of 14 miles.

The building, which is 32 feet high, will be kept whitewashed and stands in latitude 56° 11′ 45″ North, and longitude 11° 42′ 20″ East of Greenwich.

Gottenburg Lights.

Hydrographic Office, Admiralty, Oct. 26th, 1841.

The Board of Admiralty at Stockholm has given notice that—

1. A light on the island of Winga will be exhibited on the 1st of November next, and will be continued every night throughout the year.

2. The lights on the islands Buskar and Botto will also be shown on the 1st of November next, but they will continue only between the 15th of August and the 15th of April, every year.

Light on Isle Præstoe, *Norway.*

Hydrographic Office, Admiralty, Oct. 26th, 1841.

The Board of Admiralty of Stockholm has given notice that, a fixed light has been established on the island of Præstoe, in the Gulf of Folden, (Province of Drontheim) situated in latitude 64° 47′ 26″ north, and longitude 11° 8′ east.

The light is elevated thirty-three feet above the level of the sea, and is visible at the distance of ten miles.

It will be lighted every night between the 15th of August and the 30th of April.

Vessels bound to Næroe Sound, on leaving the Gulf of Folden, are to observe that the strongest glare of light is seen when it bears E.N.E. easterly, and that by steering for the light on this bearing they will avoid the dangers on each side of the channel to the south-west of Præstoe: and they are cautioned not to stand so far to the eastward as to lose sight of the light. As soon as they arrive at a quarter of a league from Præstoe, they should steer N.N.E. till it bears east, when a north-east course will carry them up to Næroe Sound.

N.B. The above bearings are magnetic, the variation being 20° west.

Buoys on the India Bank, Arklow, and Glassgorman Banks, *East Coast of Ireland.*

Ballast Office, Dublin, Oct. 14th, 1841.

The Corporation for Preserving and Improving the Port of Dublin, hereby give notice that a buoy has been placed at the south end of the India Grounds Bank, and that a beacon has been attached to the buoy at the north end of the Arklow Bank.

Specification given of the position and appearance of the buoys, by Mr. Halpin, the Inspector of Light-houses.

The buoy at the south end of the India Grounds Bank, is of black colour, having the words "India Grounds South," painted in white letters on its broad end; the buoy is moored in five fathoms at low water.

The buoy at the north end of the Arklow Bank is of black colour, with white zones or belts round its sides, the broad end painted black, having the words "Arklow Bank North," in white letters. A beacon of a conical form, coloured white, and borne on a triangular stand, has been affixed to the top of the buoy. It is moored in five fathoms at low water.

Wicklow head bearing	. .	N. ¼ W.
Mizen head "	. .	West

The Wicklow head lights kept in line lead between the India Grounds Bank and the Arklow Bank.

It is intended to place two beacons on the outer edge of the Arklow Bank, of which due notice will be given; its southern extremity is at present marked by the Arklow Bank Floating Light.

Westward of the Arklow Bank Floating Light, and off the coast of Wexford, is the Glassgorman Bank, on the north-east point of which there is a large buoy of black colour, having red stripes painted length-ways on the sides of the buoy

and the words "Glassgorman Bank," in white letters on the broad end; it is moored in five fathoms at low water.

Arklow Rock (outer point) bearing . . N.b.W.
Tara Hill . . . . . " . . West

The bearings stated are magnetic.

By Order, H. Vereker, *Sec.*

The Havre Rock, *North of New Zeeland.*

The following is important to navigators, not having yet found its way into the charts. It appears to have connection with a group of islands to the north-east of New Zeeland.

"Capt. Privat, of the whaler Havre, reports, that he has discovered, in the waters of New Zeeland, 5¼ leagues W.N.W. ¼ N. by compass, of the rock Esperance (middling variation 12° 10′ N.E.) a dangerous rock. According to soundings of the captain, it is the extremity of a rock about the size of a ship with only three to four feet water on the top of it, whilst all around it there were from twelve to nineteen fathoms. This rock is situated at 31° 19′ S. lat., and 178° 35′ E. long., according to two chronometers, which also agrees with the situation of the Rock Esperance. As this rock as yet never was laid down in any chart, the captain has given it the name "Havre."—*Shipping Gazette.*

Leghorn Light.

The Grand Ducal Government of Tuscany has given notice that the light of the Port of Leghorn (Livorno) in latitude 43° 32′ 41″ North, and longitude 10° 17′ 25″ East, which has hitherto been a fixed Light, will appear from the 15th of next December as an Intermitting Light, alternately Red and White, each for an interval of forty seconds, and with intervening eclipses.

The height of the light, being 154 feet above the sea, will render it visible at the distance of 20 miles; and during the eclipses a faint light may be seen within the distance of 9 miles, the total darkness not being complete except beyond that distance.

Light-houses and Beacons.

Extract of a letter received at Lloyd's, from their agent at Sydney, Cape Breton, dated Sept, 27, 1841:—

"I observe in some of the charts made up to 1839, that they have omitted to lay down the Light-house at Flat Point, at the entrance of this river, and instead of a beacon at the mouth of Louisbourg-harbour, a Light-house is laid down."

These are the kind of charts by which some ships are sailed; incorrect even to placing a beacon instead of a lighthouse, or a lighthouse instead of a beacon. Then the ships are lost and the charts are blamed. We advise their owners to consult the admiralty charts.

The Maidens Light-house in a Fog.

To render our light-houses conspicuous at all times and under all circumstances of weather, is a very important object. In clear weather, by night or day, they are sufficiently visible, but in fog they are unhappily not so. There are conditions, however, which may assist in rendering them conspicuous, if due attention be paid to them. With few exceptions it has been a general custom to whitewash the buildings, or paint them white, thus rendering

them perfectly invisible at any moderate distance in foggy weather. A white light-house is certainly rendered more conspicuous by a dark back ground either of downs or cliffs, but the cliffs in a fog would be seen when the light-house would not be.

Again, when seen with no back land whatever, owing to their having no strong contrasting colour, or being white of the same nature as the fog itself, they become fairly concealed by it, at the very time when they are most wanted.

This subject has engaged the attention of Capt. Beechey, R.N., who in the course of his survey of St. Georges Channel has had frequent opportunities of observing this great defect. To remedy it he suggested that a band or portion of the building should be painted red, which suggestion has been adopted with complete success. The Ballast Office at Dublin has readily carried out his plan on the Maidens Light-house, as will be seen by the following notice, and the good effects of it have become evident. We annex Capt. Beechey's report on it, accompanied by a lithographic view, which he has sent us, showing that the part of the Maidens light-house which has undergone the process is distinctly visible through fog, while the other part is concealed by it We have also a letter from a Master of the Royal Navy confirming this fact. Our commissioners of lights will see the importance of this subject to our coast navigation, and we have no doubt will give it immediate attention.

MAIDENS ROCKS LIGHT-HOUSES, *North-east Coast of Ireland.*

Ballast Office, Dublin, Sept. 9th, 1841.

THE Corporation for Preserving and Improving the Port of Dublin, hereby give notice that an alteration is now in progress of being made in the appearance of the towers of the Maidens Rocks Light-houses, which on and from the 1st of November next, will be marked with broad red belts or zones.

Specification given of the appearance of the towers, by Mr. Halpin, the Inspector of Light-houses.

Those towers have been hitherto coloured white; the lower spaces will be still continued white; the central belts red; and above these, white to the projecting galleries.

The red belts or zones will be nearly one-third of the heights of the towers from their bases to the outside galleries.

The belt being 18 feet in height on the North Light-house.
" 19 " South ditto.

NOTE—No change will take place in the appearance of the Lights.

By Order, H. VEREKER, *Sec.*

THE MAIDENS LIGHT-HOUSES.

DEAR SIR.—A few days ago we had an excellent opportunity of observing the improvement that has been made in the colouring of the Maiden Light-houses, by painting a broad red stripe across the tower, which before was entirely white.

We were endeavouring to make these light-houses in very hazy weather, and when within about a mile, we observed three dark spots somewhat elevated, and a long dark line at the horizon. The *spots* proved to be the *red band* which had been recently painted, and the *slated roofs of the light-keepers'* cottages; whilst the *dark line at the horizon* was the *natural colour of the rock* below the whitewash, but *no part of the whited tower* or of the *rocky island which had been whitewashed could be discovered;* and it was not until we were quite close that we could discover a faint outline of these objects, the appearance of which may be imagined from the sketch annexed.

There could not have been a stronger proof of the great mistake that has been made in white-washing many of the light-houses in this sea, in the hope of rendering them more conspicuous, but especially in the Maiden towers and rocks, which have been annually coated with lime *down to the waters' edge*,

and had it not been for the *red stripe* and the *dark roofs* of the cottages, which could not be seen when viewed end-ways, the vessel might have been too close to have avoided the danger, and had this occurred the loss of the vessel would have been entirely owing to the expensive process of whitening the rocks and towers.

On a clear day when the sun shines bright upon a whited tower we must all acknowledge the brilliant effect produced by the lime, but at such times we care very little about light-houses, and at night the light is, of course the best guide. It is in foggy and hazy weather and during gales, which in this sea are almost always attended with mists, that we want our land marks, and there certainly is not any colour which at such times so effectually evades the eye as white.

Captain White in his Channel directions, complains of the difficulty of discerning the Hook light-house in consequence of its whiteness. Lieut. Frazer in his recent survey to the southward of Dublin, could scarcely make any use of the lower Wicklow light-house from the same cause.

I have frequently run for Carlingford Lough, at the entrance of which there is a beautiful light-house 110 feet high, of snow white purity, and in the misty weather which usually attends such exploits have always seen the *Black house*, a low ruin about a cable's length inside the light tower, and even the *black base of the tower* below the whitewash, long before the tower itself could be distinguished.

I could furnish many other instances of a similar kind, but I hope that those which have been given will be sufficient to call further attention to the subject, and that the plan now upon trial at the Maidens under the direction of that most excellent Board, the Ballast office at Dublin, will be generally adopted. But I must observe that at present the plan is only half carried out at the Maidens, as the tower has only *one* band of red, whereas it should have *two*, each one third the height of the tower in width, and then the lantern may be white.

I must also remark that this rule should not be applied indiscriminately to all light-houses; for instance, Port Patrick, the Baily, Mull of Kintire, Douglas, and in fact all light-houses situated *close under cliffs* are decidedly more conspicuous when white; but all towers which stand alone, or, which have half a mile and more of atmosphere between them and the back ground, should be striped, and the stronger the contrast the better.

I am, &c.,

To the Editor, &c. F. W. B.

Sir.—Being off the Maidens Rocks on the 23d Sept. 1841, in hazy weather, the great utility of the red band lately painted round the light-houses was very apparent; this, the railing round the lantern, and the darkness of the two cottages at the base of the tower being the only parts visible. It is evident that the roofs of these cottages in certain positions cannot be seen, we should, therefore, have been very close to the rocks before they were discovered, had it not been for the band.

As these dangers are five miles distant from the nearest land, swept by a rapid tide, and the lead gives us no warning of an approach to them, every means should be used to render them visible in hazy weather. This appears partly accomplished; and were there another band leaving the centre of the tower white, it would be still more so, and at the same time prevent the possibility of their being (from a casual glance) mistaken for vessels under sail, which might be the case were they painted entirely red.

I am at a loss to account for the rocks being whitewashed, as they would surely be more easily seen were they left their natural colour, or blacked over. As it is in your power, through your valuable periodical, to call general attention to so important a subject, I venture to trouble you with this note.

To the Editor, &c. A Master, R.N.

(Continued from p. 709—cs crew saved—L lost.—D drowned)

VESSELS.		BELONG TO.	MASTERS	FROM.	TO.	WRECKED	WHEN.	
Alexander	380	Greenock	Stabr	P. Rico	London	founder'd	June	cs
Arieta		London	Found	abandond	on Marig	ana pre to	April 1	
Bell		Donegal	McInnes	Liverpool	Donegal	S. Geo. C	Oct. 19	cs
Bridget		Sunderland	———	Llanelly	London	Lands Ed	Sep. 23	cs
Brothers		Yarmouth	Warner	Shields	———	Herd Snd	Sept. 4	cs
Cambridge	385	Newcastle	Butyman	Reval	———	Baltic	May 15	cs
Charming Molly		———	Newman	Swansea	Jersey	Jersey	Sep. 25	
Clonmell		———	Tollervey	Sydney	P. Philip	Austral C	Jan. 2	cs
Clyde		Glasgow	McKenzie	Sydney	———	C. North	Sep. 24	cs
Commander Barclay		———	Out'rbrig	Jamaica	S. Leone	Inagua	July 14	cs
Cornelius	390	———	Simms	———	Cork	Malta	May 21	
Crown		Exeter	———	———	———	———	May 19	cs
Cygnet		Schooner	Resterick	Nassau	Turks I.	Southptn	July 20	cs
Dido		———	Carpent'r	Benin	Liverpool	Skerries	Oct. 12	2 D
Dryade		———	Heard	Maritius	London	at sea	cs ar. Bmbay	
Eleanor	395	Belfast	Bracgirdl	Belfast	Sydney	C. North	Sep. 24	
Elizabeth		Sunderland	Purse	Seaham	London	Swin	Oct. 16	cs
Elizabeth		———	Stiles	Sydney	N. Zeln'd	———	April 6	cs
Emulous		London	Gales	London	Dorchst'r	abandond	May 11	cs
Euphemia		———	———	Lisbon	Berlings	———	Aug.	cs
Fair Isle	400	———	Mills	Quebec	———	Anticosti	June 30	cs
Fox		Gravesend	———	———	———	Herd Snd	Oct. 24	
Glenlyon		———	———	St. John	Liverpool	Quaco I.	Oct.	
Hawk		London	———	———	———	Brewer I.	Jan. 9	cs
Henry		Sunderland	Brown	Sundrlnd	London	at sea	Oct. 18	cs
Huzza	405	———	Wilson	Wisbech	———	———	Sep. 4	cs
India		———	Campbell	Grenock	P. Philip	at sea Jly	19 by fire	18 D
Isabella		———	———	Whithvn	Belfast	Parton	May 17	
Iris		Dartmouth	Fox	Dartm'th	Neath	Longship	Aug. 26	cs
London		Yarmouth	Crosby	Liverpool	Jamaica	Gr. Turk	Aug. 24	cs
London	410	St. Johns	———	London	St. John	Mispeak	Oct. 3	cs
Majestic		———	Laidley	Mobile	Quebec	Colorado	April 20	cs
Mary Scott		———	Sadler	run foul	of by the	Brooklyn	9	8 L
Medway		———	Barker	Newcastl	Petrsbrg	Norfolk	May 3	cs
Miranda		———	Hayes	Hobart T	Lombock	Madeira	June	cs
Neptune	415	Timber la.	Adams	Quebec	Abrdvey	Abrdvey	Sep. 4	cs
Petersburg		———	———	Sundrlnd	Richbeto	St. Pauls	May 12	cs
President		London	Roberts	NewYrk.	London	at sea	all lost	
Rebecca		———	Daly	Liverpool	———	Bl'ktail B	Sep. 13	
Risk		Whaler	Renwick	———	———	Maldives	Feb. 2	cs
Rivals	420	———	———	Liverpool	R. Nunez	Conflct R	June 22	cs
Robert & Hannah		Sunderland	run foul	of schon'r	Surpriz &	s. on Scro	by S. Sp. 4	cs
Romp		Hull	Roundin'	Hull	Hamburg	off Cromr	Sep. 4	cs
R. Bonnery		Sunderland	Brown	London	Petrsbrg	Chrsti'na	Oct. 15	cs
Rosina		Sunderland	Corner	Sundrlnd	———	at sea	July 3	cs
St. Mary	425	Hull	Gruby	Quebec	Hull	Pentland	Aug. 21	cs
St. Patrick		———	Hughson	St. John	Bristol	N. Scotia	Sep. 15	cs
Sarah Davis		———	Davis	Harb. G.	Sydney	C. Frncis	Aug. 16	cs
Solway		———	———	———	———	———	———	
Success		———	Walsh	———	———	Labrador	July 25	
Surprise	430	Jersey	run foul of	Br. Rob.	& Hanah	s. on Cros	I. Sep. 4	cs
Susanna & Jane		———	———	Glasgow	Stettin	Listerlnd	Oct. 14	
Three Brothers		Belfast	Mitchell	———	———	St. Pauls	June 28	cs
Townley		Newcastle	Miller	Quebec	———	Anticosti	June 30	cs
Urania		———	———	Liverpool	Sydney	W. Hoyl'	Oct. 7	
Wensleydale		Sunderland	———	Quebec	———	Anticosti	June 30	cs
William & Tom	436	Cork	Murphy	Clonaklti	Cardiff	Ilfrac'mb	Oct. 17	cs

(To be continued.)

Inspection of the Present State of the Royal Navy.

Orders have been sent by the Lords Commissioners of the Admiralty to the chief surveyor-general of the navy, and the governors of Deptford, Woolwich, Chatham, Sheerness, Portsmouth, Plymouth, and Pembroke dock-yards, to send immediately to the Board of Admiralty a correct statement of the present efficient state or sea-worthiness of all the ships within their respective dock-yards, after undergoing a careful survey as to their fitness for service.

Messrs. Lang, Fincham, and Atkins, it appears, have surveyed, in the last fortnight, thirty-three ships in the ordinary at Portsmouth, notwithstanding the tempestuous state of the weather, blowing and raining every day more or less; these officers have previously visited Sheerness and Chatham, and examined the ordinary at each port; they will now proceed to Plymouth, on a similar service, having been selected by the Admiralty for the purpose. Mr. Lang is the senior master-shipwright of the profession; Mr. Fincham the fourth following, and Mr. Atkins the sixth, comprising one-half of her Majesty's builders, and forming a Board of Professional Men, (than whom none could be better) to ascertain the correct state of "England's Wooden Walls," which have long since been, and, we trust, will ever continue to be—the dread and envy of her enemies.—*Hants. Tel.*

Pensions and Pensioners.—The Lords of the Admiralty, taking into consideration the injustice of the regulation, under which two years' service of the Marines, on shore is reckoned only as one for pensions—have *rescinded* that regulation. Henceforth there will be no distinction between sea and shore service. Their Lordships have also conferred another act of justice, by allowing great coats to this gallant corps, the same as to regiments of the line. The Lords of the Admiralty have *rescinded* the regulations which prevented pensioners from receiving their pensions when serving in the royal navy; and all pensioners will, in future, if fit for service, be allowed to receive their pensions in addition to their pay. The Lords Commissioners have directed that in the case of any soldiers who may be temperance men being embarked on board her Majesty's ships, or troop ships, or in transports or freight ships, such non-commissioned officers and privates shall be allowed double rations of sugar, cocoa, and tea, for each ration of spirits stopped. (See our Admiralty orders.)

In consequence of the difficulty experienced in obtaining able-bodied seamen for the ships ordered in commission, the Lords of the Admiralty, wishing to hold out every inducement, have issued the following notice:—

"Sir.—I am commanded by my Lords Commissioners of the Admiralty to acquaint you that they have been pleased to rescind the regulations which prevented pensioners from receiving their pensions when serving on board her Majesty's ships, and that all pensioners will in future, if fit for service, be allowed to receive their pensions with their pay.

"To Captain ——." "I am, sir, your very obedient servant,

"John Barrow."

Reaction.

Our readers may perhaps remember that Ensign Rushbrook when on duty in Portsmouth dock-yard, a short time ago, lost his life by being blown into the North Camber dock, while visiting the rounds in company with a corporal who shared the same fate. His brother Mr. Rushbrook, mate, has in consequence been promoted to the rank of lieutenant.

In our last we recorded the death of Lieut. Helpman, of H.M.S. Beacon, surveying the Archipelago. The distressed mother of this much esteemed young officer, has had the gratification of seeing her only remaining son a mate in the Wellesley, promoted in consequence, to the rank of lieutenant.

We leave these gracious acts for the comments of our readers. With reference to the accident to Ensign Rushbrook, we understand that as a due precaution against any such accident occurring in the dock-yard for the future, a fence—partly permanent, and partly made to ship and unship in those parts at which stores are landed, is ordered to be erected around the boundaries. This fence is to be placed under the charge of the police, whose duty it will be to see that no part of it shall be removed but for some especial purpose, during the day, and that the whole of it be standing immediately after the working hours have closed.

The Pelorus.—Her Majesty's brig Pelorus was sold out of the service at Singapore 6th July last, by order of Commodore Sir J. J. G. Bremer, and on the following day the officers and crew, with the exception of the acting commander (Chambers,) were transferred to the brig Bentinck, which the commodore had purchased for 6.000l. This brig was fitting for service in China. Lieut. Chambers returns to England. Mr. R. A. Bankier, as Assistant-Surgeon, and Mr. T. R. Tate, as Clerk in Charge, &c., have joined the Bentinck.

The Snake, 16, has been commissioned at Sheerness.

The Hazard, 18, by Commander Bell.—*Shipping Gazette.*

General Steam Navigation Company.—The General Steam Navigation Company have recently made another important addition to their numerous and splendid fleet of steam-vessels by the purchase of the Hull steam-ships Vivid and Waterwitch, which have been for the last four years running between Hull and London. The purchase-money for the Vivid and Waterwitch is, we understand, 16,000l. their original cost being 24,000l. each. The General Steam Navigation Company lately bought the Mercury, the largest of the Gravesend steamers; and not long since launched the Trident, of one thousand tons burden. In number and tonnage their fleet of steamers now exceeds those of the Royal Navy, and their consumption of coals amounts to 50,000l. per annum.—*Morning Post.*

Pursers.—The following memorandum, has been published, dated Admiralty, Sept, 8, 1841,—"Pursers serving as Clerks," are only to wear the uniform of the station in which they are actually serving.—By command of their Lordships,—J. Barrow.

MEN-OF-WAR AGAIN.—The complement to be borne by the Queen, 110, is fixed to be 900. Of these there are to be 13 boys of the first class, and 18 of the second. She is to bear only one clerk, being a reduction of one. The Illustrious, 72, has had her complement of men increased to 628. She is to receive on board 110 supernumeraries, for distribution among the ships on the station to which she is destined, and is to be got ready for sea with all despatch.—*Hants. Tel.*

ANTWERP.—Oct. 20.—The Belgium steamer British Queen, is hauled into dock for the winter, and will make her first experimental voyage from this port to New York, in the month of March, 1842.—*Shipping Gazette.*

NEW BOOKS.

WHAT TO OBSERVE, *or the Traveller's Remembrancer.—By J. R. Jackson, Secretary to the Royal Geographical Society, &c.*—London, J. Madden, 1841.

What to observe! How much these three little words convey is amply told in the handy little work before us. It would not be possible to find in the whole range of *useful* works (and they are not a few) that have issued from the press within the last few years, or to select one that is calculated to be more generally useful in all branches of general knowledge, or one calculated to advance them, than the little unpretending volume before us entitled *What to observe!* How many valuable opportunities are lost of adding discovery to some branch of useful research, by not knowing "what to observe?" How many travellers and voyagers go forth every year from this country, some heedless, it may be, but many desirous of adding their tribute to enlarge the boundaries of some kind of knowledge, and that is not done from not knowing "*what to observe.*" Indeed, we may ask how many are there not, who, with a little work like that before us, telling them "what *to* observe" on every subject that may fall in their way, would not add something to the stock of general knowledge from the mere satisfying reflection of having made themselves as useful as they could. Very few, we will venture to say, there are, who would not do so. "What to observe" then, we consider a work especially directed to our readers, than whom few have better opportunities of making good use of it.

The author has separated the branches of his subject into eleven divisions, these again branching into sections, and the whole rendered of the easiest possible reference by an index. We will annex one or two of these heads:—

Division 1.—"Of a country considered in itself," includes geography, boundaries, aspect, and configuration, this latter including mountains, their names, arrangement and direction, height, form, and slope; also, plains. Section 2 of this division embraces hydrography, or the various waters of a country; and Section 3, its meteorology, or climate, temperature, and terrestrial magnetism.

The next division is that of productions subdivided again into three sections, the next "Inhabitants," involving a vast multitude of points for inquiry, or shewing "what to observe." But we should go far beyond our limits were we to enumerate one half of the divisions into which, "*What to observe,*" is classed.

We must not omit, however, to add, that in the last Division No. 11, in the Sections of "Instruments," and "Operations," the observer is supplied with a vast deal of information relating to them, and to their use; combining not only directions, but many valuable practical hints of a most useful kind. In catering for our naval readers, we cordially recommend this little work to their attention, most especially those going abroad, assuring them that they will find it a most useful companion, for we fully agree with the author in his quotation from La Croix, that "L'art d'observer est le seul moyen d'acquerir des connoissances utiles."

REMARKS ON HEAVING DOWN A SEVENTY-TWO GUN SHIP, *shewing the strain to be resisted, and in what manner the established allowance of stores may be rendered available, &c.—By Com. R. Harris, R.N.*

Did our readers ever hear of "Papers connected with the duties of the corps of Royal Engineers"? It is an annual volume in quarto, the title of which speaks for itself. Now, we have have often thought that the example of the engineer officers is well worth following by those of the Royal Navy. There are very many papers on subjects connected with their duties, which might be recorded and collected annually, to make quite as respectable a volume as the Royal Engineers produce. And of the kind of papers it might contain, the "Remarks" before us form a good sample. We might enumerate many more; such for instance as are found in this journal; but we throw out the hint, being satisfied that, if adopted, it would induce habits of close and correct observation among its supporters, and thereby promote individual, as well as general, good. The "Remarks" of Commander Harris commence with describing the various preparations for heaving down a ship, all of which are fully detailed; and these being intended for a line of battle ship, will form a good starting point for vessels of all sizes. These are followed by an introduction to the heaving down of the Melville which contains some highly useful practical remarks on the subject, and the whole is illustrated by diagrams, shewing the various arrangements that were made, and the position of the Melville and the auxiliary ships employed in the process.

A similar process that of heaving down the Medina is also described by Commander Harris which appears to have been done in a most seamanlike manner, and the whole is followed by some miscellaneous observations of a professional nature on setting and trimming sails, that ought to be looked into by every officer, as being one of the most important subjects in which he is concerned.

We highly commend the motive "an anxiety to enable others to profit by the experience" of these proceedings, and thereby to benefit a service "to which the greatest part of his life has been devoted," which induced Commander Harris to commit his remarks to the press; and we shall take an opportunity hereafter to transfer some of them to our own pages. In the meantime they ought to be in the possession of every officer afloat, as a professional work, and placed immediately in all our naval libraries.

FORBES'S EAST INDIA AND COLONIAL GUIDE.—*Houlston and Stoneham, London*, 1841.

A small hand-book containing information for all parties contemplating a voyage to the East and West Indies, and one of useful reference which ought to be very generally circulated.

NEW CHARTS.

In a preceding page we have inserted an extract from the report of Capt. Vidal, R.N., to the Hydrographer of the Admiralty, describing the mode which he adopted in pursuance of directions in performing the difficult and dangerous task of surveying the Gold Coast in H.M.S. Etna, in the year 1838. This is an important document, inasmuch as it forms a historical record of the construction of the charts now published as the results of that survey. The survey extended from Sherboro' Island to Cape St. Paul, an extent of 900 miles, and including as it does, a coast notorious for its unhealthiness, the greater credit is due to Capt. Vidal for the successful completion of such a task. It was not performed however without some sacrifice of life, for seventeen, we believe, fell in the course of the survey. But they have done a service to their country with their gallant leader, in laying open the resorts of slave dealers to the daring and persevering energies of our cruizers; who, with the assistance which these

charts afford will be at no loss to hunt these persecutors of the poor negro to their very homes. In every point of view, not only of a scientific, but of a useful philanthropic kind, we look on these charts as the most important that have appeared for a long time. We shall now proceed to enumerate them.

Western Coast of Africa;

Sheet 9.—Sherboro' Island to Cape Mesurada.
Sheet 10.—Cape Mesurada to Cape Palmas.
Sheet 11.—Cape Palmas to Grand Lahou.
Sheet 12.—Grand Lahou to Cape Three Points.
Sheet 13.—Cape Three Points to Banacoe.
Sheet 14.—Banacoe to C. St. Paul
Sheet 17.—Cape Formoso to Fernando Po.
Sheet 18.—Fernando Po to Cape Lopez.

The description which Capt. Vidal has already given of the above charts, is more complete than anything that we can add.

Presentations.

We understand that the officers employed under Commander Sheringham, RN., in the survey of a part of the coast of England, have presented their esteemed leader with a handsome sword, on his recently attaining his Commander's rank. It is gratifying to record such marks of friendship, as highly honourable to all parties, and as a pleasing testimony of an officer's method of carrying on a service of great importance to the country, being alike agreeable to all employed in it.

A telescope has been presented by her Majesty's Government to Capt. Delor, of the French brig Arzac, of Rochelle, for rescuing three British seamen from the wreck of the Belvidera, of Yarmouth; and another to the chief mate of the New York ship Garrick, for rescuing the master and eight men of the brig Eugenia, of St. John, New Brunswick.

Survey.—We understand that Capt. Blackwood has just commissioned the Fly, 16, at Plymouth, for the purpose of surveying the north-eastern seas of Australia.

Meteoric Appearance.—The following singular phenomenon appeared on the morning of the birth of the Prince of Wales.

"Early in the morning, of that auspicious day which gave birth to an heir to the crown of these realms, while it was yet "pitchy" dark, the heavens suddenly became illuminated, and increased in brilliancy until the hills around were seen as clearly as at noon day; and the men working in the dock at Belfast, were dazzled and astonished at the light.

"This extraordinary phenomenon lasted about a minute, when the light gradually disappeared, and all was dark as before. There was no flash or corruscation accompanying this singular appearance—the light gradually increased to its greatest intensity, and then as gradually diminished, nor was there any noise." The foregoing is from a naval officer, who witnessed what he has described. Our readers will remember, that about the period mentioned, (the 9th of November,) the earth is in that part of her orbit, when these appearances from previous observation are expected.

The oldest Navy List.—The following is the title of the oldest list of officers of the Royal Navy, preserved in the Admiralty. "*Admiralty Office, July 1st,*

1700. A LIST *of the Names of* such Lieutenants who served in his Majesty's fleet, during the late war. One hundred whereof will from time to time be entitled to Half-Pay, during their being out of employment a-shoar, according to their Seniorities, and his Majesty's establishment in that behalf. Dated the 18th of April, 1700."

In this curious ancient record the list is first given, then the dates of their commissions, followed by a column entitled "Which of them are now employ'd and how," wherein it appears that the lieutenants in those days were no less employed in the Merchant Service than now. Numerous entries of this kind appear. "Had leave to go Master of a Merchant Ship."—"Was said to be gone Commander of a Merchant Ship to Newfoundland, in July 99, when enquired after to be employed."—Another entry says, "Said to be gone to Sea in the Merchant Service when a commission was designed him in August, 99." Lieutenants were then, it would also appear, employed as Midshipmen. We find several as so stated,—James Wilson, a lieutenant of 1694, appears in this list of 1700, as "Midshipman extra in the Arundel." Walter Pigot, of 1694, is also "Midshipman extra in the Romney," a mode of serving which would not be very gratifying to the lieutenants of the present day.

NAUTICAL NOTICE.—YORK LEDGE.—A cast-iron beacon has been placed on this dangerous ledge, after much labour and difficulty, which will resist all the fury of the elements, and be of much service to eastern coasters. This ledge is almost always covered with water, and to such a depth that it is indicated by breakers only at low water or in severe storms. We learn from the Portsmouth Journal that the workmen have only been able to land and work on the rocks in good weather and low tides, and then were not able to work more than from ten to eighteen minutes, before the tide would drive them off. During this time, even, they were often obliged to work up to their middle in water, with the sea breaking over them. This beacon is composed of six cast-iron hollow pillars, each 22 ½ feet long, 12 inches diameter at the lower end, on which is cast a flance; they are 10 inches in diameter at the top, and are cast in two parts, which are connected by faucet joints. These pillars or columns are disposed at the base in a hexagonal form, and inclined inwardly so as to meet and rest against each other at the top, thus forming a hexagonal pyramid. Within the base thus formed by the feet of the columns, and secured to the rock, is an entire centre plate, with sockets, from which radiate six diagonal braces, which are secured in the sockets of the centre plate by hook joints and spear bolts. The tops of the main pillars where they meet, rest against an iron centre block, which gives additional solidity and strength to this part of the structure; over the apex thus formed by the meeting of the columns and centre block, enclosing the whole, is an iron tubular cap which rises eight feet above the tops of the pillars, and rests on an iron ring previously placed around them. The upper end of this cylindrical cap is surmounted with an iron ball three and a half feet in diameter, cast in ribs which are enclosed in an iron ring, with the inscription "York Ledge, 1840." The whole structure is well keyed and wedged together. The whole of the exterior is painted black, except the ribs of the ball, which are alternately coloured red and black.

The following are the bearings of various objects from the beacon, viz.—Boon Island light E. ¾ N., about seven miles; Whales Back light, W.b.S. ¾ S. six miles; White Island (shs) light, S.b.W. ¾ W. two miles; York Nubble, N.b.E. three miles; York Harbour N.W.b.N. ¼ N. three miles; Western Sister W.S.W. five miles; east point of Duck Island (Isle of Shoals,) S. ¼ W. seven miles.

N.B.—South-west, about two miles from the beacon, lies a shoal, called "the Triangles," which breaks in a heavy ground swell, and has not more than four fathoms at spring tides.

P.S.—Vessels falling in with York Ledge in foggy weather, may, by sending their boats, read "York Ledge, 1840," as described, and shape their course accordingly.—*Salem (U.S.) Register.—From Shipping Gazette.*

Promotions and Appointments.

(From the Naval and Military Gazette.)

Admiralty, Oct. 26th, 1841.—With reference to the Gazette Extraordinary of the 8th inst., and to the Gazette of the 15th inst., the following additional naval promotion of officers, who served with the army in taking the heights at Canton, from the 23d to the 30th of May, has taken place:—

Lieutenants to be Commanders.

C. C. Dawkins and W. C. Metcalfe.

Mates to be Lieutenants.

Lord A. W. Beauclerk, G. Walker, W. R. Rolland, A. C. C. Denny, and W. H. Symons.

PROMOTIONS.

Captain—C. G. E. Napier, (1838).

Commanders—C. J. Jay, of the Admiralty Semaphore, and to continue his former duty.

Lieutenants—J. M. N. Boyd, R. T. Bedford, W. R Smith, A. C. Murray.

Master—J. F. Rees.

Surgeon—W. F. Carter.

APPOINTMENTS.

Captains—T. Ogle (1838) to *Southampton*—J. Kingcombe (1838) to *Belleisle.*

Commanders—G. K. Wilson (1840) *Cambridge*—J. Scott (1815) to *Alfred*—B. M. Festing, kh. (1825) to *Apollo*—J. B. Woodthorpe (1838) to *Alfred.*

Lieutenants—C. H. Lapidge (1824) to *Ferret*—J. Saunderson (1815) to *Malabar*—G. Kenyon (1837) to *Madagascar*—H. Wellington (1834) to be flag-lieutenant to Sir E. Owen—E. S. Southeby (1835), J. H. Bridges (1838), W. H. Molyneaux (1820), T Ellis to *Alfred*—J. Wildey (1817) to Semaphore station, Portsdown hill, v. J. Long (1806) to Rendezvous, Douglas, Isle of Man—D. Elliot (1839), and H. Bernard (1841), to *Syren*—G. Wodehouse (1838) to *Madagascar*—Hon. C. St. Clair to *Cambridge*—J. B. Duffield (1824) to *North Star*—J. Moore (1841) supernumerary, M. S. Kirkes (1840) additional, R. A. Oliver (1838), and G. G. Wellesley (1838) to *Queen*—J. Nepean (1836) to the Peninsular Mail Agency—G. L. Wolley (1820) to *Astrea*—G. Snell to *Hope*—C. W. G. Griffin (1814) to *Tyrian*—T. Creser to *Star* packet—R. T. Bedford (1841) to *Vanguard*—G. S. Parsons (1802) to be Admiralty Agent of one of the Halifax packets—J. M. N. Boyd (act) to *Pantaloon.*

Masters—G. Grant to *Vindictive*—P. Loney (1841) and T. Hancorn (1841) to *Syren*—G. J. Hodges, supernumerary) to *St Vincent*—G. Wright (1838) acting to *Belleisle.*

Mates—M. T. Molesworthy (1840), C. B. Strong (1839), J. C. Snell (1834), and E. F. Clarke (1835) to *Queen*—A. Doyle to *Hazard*—H. D. Blanckley (1829) B. G Rowles, and A. C. Kerr to *Heroine*—Lord C. W. Butler (1840) to *Aigle*—T. Gaussen (1838) and J. W. Dorville (1839) to *Isis*—C. J. Hoffmeister (1834) to *Caledonia*—J. W. Probert (1835) to *Spartan*—R. L. Curtis, Hon. F. A. Foley, and — Lethbridge to *Cambrian*—E. A Blake to *Excellent*—J. E. Bridges to *Madagascar*—R. W. Courtenay (1839) to *Malabar*—C. Bromley (1841) to *Belvidere*—W. G. Dean (1836) to *St. Vincent*—A. M'Naghten (1837) and — Isaacson to *Formidable*—W. H. Stewart (1841) and J. Boyce to *Illustrious.*

Second-Masters—J. Hughes to *Pantaloon*—H. Norway to *Malabar*—J. M. O'Brian to *Apollo*—J. McClorne to *Thalia*—J. Mathews to *Queen*—J. W. R. Jenkins to *Sprightly* packet.

Surgeons—G. A. Munro (1838) to *Pique*—Dr. King, Deputy-Inspector to *Winchester*—T. W. M'Donald (1830) to *Belleisle.*

Masters-Assistants—J. Pollard to *Belvidera*—J. R. Godden to *Hazard*—C. C. Mitchell to *Vindictive.*

Midshipmen—C. G. Rowley to *Dido*—Hon. F. Walpole to *Vernon*—H. F. McKellop to *Vindictive*—J. Corbet to *St. Vincent*—H. G. Simpson to *Formidable*—W. H. Phipps to *Madagascar*—C. Vesey to *Belvidera.*

Volunteers 1st Class—G. M. Purvis to *Howe*—W. Lowry to *Queen*—C. Moore to *Implacable*—A. M. Cochrane to *Thalia*—J. Rowley to *Dido*—F. Peel to *Queen*—G. A. Pidcock to *Illustrious*—J. Leader to *Madagascar*—J. Noble to *Talbot*—J. Dutchinson to *Cyclops*—C. J. Stockdale to *Belvidere*—R. B. Atkinson to *North Star.*

Pursers—T. D. Gulliver (1831) to *Apollo*—W. L. Freeman (1833) to *Alfred* R. M. Jeffrey (1138) to *Aigle*—A. Penprase (1812) to *Belleisle.*

CLERKS—C. H. Elkins, G. S. Singer to be secretary's clerk, and E. A. Smith act. additional to *Queen*—R. Malone additional to *Illustrious*—C H. Goldin to *Hazard*—J. Pascoe to *Belleisle*.

COAST GUARD.—*Lieutenants*—J. Davis to chief officer—C. Moss, to command *Wickham*—C. G. Clarke to command *Nimble*.

MOVEMENTS AND STATIONS OF HER MAJESTY'S NAVY.

AT HOME.

ALBAN, (st. v.) Mr. J. King, Nov. 9, arr. at Cork.

APOLLO, (tr. s.) Paid off, and recommissioned by Com. Festing.

ARDENT, (st. v.) Com. J. Russell, 2d Oct. sd. for Brazil from Portsmouth.

AVON, (st. v.) Lieut. com. R. Pritchard, 9th Nov. arr. at Portsmouth from Sheerness.

BRITANNIA, 120, Capt. J. Drake, 2d Oct. arr. at Portsmouth, 18th paid off.

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

CARYSFORT, 26, Capt. H. B. Martin, 24th Oct. arr. at Portsmouth, 1st Nov. paid off.

CROCODILE, Capt. Milne, 11th Nov. arr. at Portsmouth from the West Indies.

HARLEQUIN, 16, Com. Hon. G. Hastings, 4th Nov. arr. at Portsmouth from Woolwich, 6th sd. for Plymouth.

LYNX, 3, Lieut. T. Broadhead, 5th Nov. left Portsmouth for Lisbon.

MADAGASCAR, Capt. J. Foote, Nov. 6, left Portsmouth for Plymouth.

NIGHTINGALE, Mr. G. Hicks, Nov. 9, at Cork.

ORESTES, 18, Com. P. S. Hambly, 5th Nov. arr. at Portsmouth from South America, 12th paid off.

PIQUE, 36, Capt. Yates, 10th Nov. arr. at Spithead.

SAPPHIRE, (tr. s.) Mas-com. G. H. Cole, 2d Nov. arr. at Portsmouth from Quebec.

SCORPION, 10, Lieut. com. C. Gayton, 12th Nov. arr. at Portsmouth.

SERINGAPATAM, 42, Capt. Johnson, 5th Nov. arr. at Spithead from Hulifax, 9th sd. for Sheerness to be paid off, 12th arrived.

SYREN, 16, Com. W. Smith, 3d Nov. arr. at Plymouth from Woolwich.

SPIDER, 6, Lieut. com. J. O'Reilly, 1st Nov. arr. at Portsmouth, and sd. for Chatham.

STYX, (st. v.) Capt. Vidal, 1st Nov. returned to Portsmouth with engine damaged.

VOLCANO, (st. v.) Lieut. com. Smith, 22d Oct. arr. at Portsmouth, same day sailed for Plymouth on way to Mediterranean.

SHIPS IN PORT.—*At Woolwich.*—Devastation, Lightning, Firebrand, Comet, Charon, Fearless, Heroine, Rhadamanthus, Vixen.

AT PORTSMOUTH.—St. Vincent, flag, Queen, flag, Victory, flag, Britannia, Illustrious, Excellent, Royal George yacht, Warspite, Vindictive, Madagascar, Belvidera, North Star, Hazard, Apollo, Styx, Driver, Orestes, Rapid, Viper, Lynx.

AT PLYMOUTH.—*In Harbour.*—San Josef, Caledonia, Malabar, Spartan, Adventure, (N. T.), Belleisle, Ferret.—*In the Sound*—Syren.

AT CHATHAM.—Aigle, Serpent, Volage, Thalia, Diligence, Spider, Monkey.

AT SHEERNESS.—Ocean, Formidable, Camperdown, Snake, Alfred, Speedy, Dido.

ABROAD.

ACORN, Com. J. Adams, 5th Sept. left St. Helena for coast of Africa.

ACTEON, Capt. Russell, 5th July arr. at Lima from Islay.

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

ATHOL, Mas. com. C. P. Bellamy, 23d Sept. arr. at Jamaica.

CALCUTTA, 84, Capt. Sir J. Roberts, CB., 4th Oct. arr. at Malta.

CAMELEON, Lieut. com. G. M. Hunter, 7th Sept. at the Cape.

CHARYBDIS, 3, Lieut. De Courcy, 10th Oct. at Halifax.

CLEOPATRA, 26, Capt. Wyvill, Oct. 18, at Halifax.

COMUS, 18, Com. E. Nepean, Sept. 18, left Port Royal for Quebec.

CORNWALLIS, 72, Capt. P. Richards, 7th Sept. at the Cape.

CYCLOPS, (st. v.) Capt. H. T. Austen, 22d Oct. arr. at Malta.

DOLPHIN, 3, Lieut. E. Littlehales, 8th Aug. arr. at Accra, 10th sailed.

ESPOIR, 10, Lieut. com. J. T. Paulson, 17th Oct. arr. at Gibraltar, from Lisbon, 20th sailed.

FAVORITE, 18, Com. W. Croker, 4th June left Sydney for Hobart town.

GANGES, 84, Capt. Reynolds, CB., 24th Oct., at Malta from Tunis.

GORGON, (st. v.) Capt. W. H. Henderson, 16th Dec. arr. at Alexandria.

HOWE, 120, Com. Sir W. O. Pell, 3d Oct. arr. at Malta.

IRIS, 28, Capt. H. Nurse, 31st July arr. at Accra, 5th Aug. sailed.

LOCUST, (st. v.) Lieut. com. J. Lunn, 22d Oct. arr. at Malta.

MEDEA, (st. v.) Com. F. Warden, 24th Oct. arr. at Malta from Alexandria.

PELORUS, 16, Com. F. Harding, said to have arrived at Singapore April 23d.

PELICAN, Com. C. G. Napier, Sept. 1st, left the Cape for China.

PIQUE, 36, Capt. Yates, 1st Oct. arr. at Halifax.

PRESIDENT, 50, Capt.
4th July arr. at Lima from Islay.

RACEHORSE, 18, Com. Hon. E. A. Harris, 18th Sept. left Jamaica for Barbados.

RACER, 16, Com. G. Byng, 24th Sept. at St. John, N.B., 18th Oct. at Halifax.

REVENGE, 76, Capt. Hon. W. Waldegrave, 24th Oct. arr. at Malta from Tunis.

RODNEY, 92, Capt. R. Maunsell, 4th Oct. arr. at Malta.

SAPPHO, 16, Com. T. Frazer, 11th at Antigua.

SAVAGE, 10, Lieut. J. H. Bowker, 25th Oct arr. at Malta.

SCORPION, 10, Lieut. com. C. Gayton, 11th Oct. arr. at Jamaica, 21st sd. for England.

VANGUARD, 80, Capt. Sir D. Dunn, 24th Oct., arr. at Malta from Tunis.

VICTOR, Com. W. Dawson, (a), Oct. 10th at Halifax from Jamaica.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

On the 27th of Oct., at Hordle-house, near Lymington, Hants, the lady of J. R. Carnac, Esq., of a daughter.

Sept. 26th, at Weymouth, the lady of Capt. Dobson, RN., Inspecting-Com. of Coast Guard, of a son.

Marriages.

On the 15th, at Marylebone Church, Vice-admi. Lord Colville, to the Hon. Anne Law, third daughter of the late and sister of the present Lord Ellenborough.

On the 21st of Oct., at St. Pancras, London, B. Thompson, Esq., to Eliza, widow of the late Mr. Middlemist, RN., and daughter of the late — Hannan, Esq., RN., and formerly Com. of Lord Yarborough's yacht Falcon.

At Folkestone, Capt. W. Calder, late of the 8th Regiment, to Sophia, daughter of Lieut. G. Kennicott, RN.

On the 30th of Oct., at Abbott's Langley, Herts, the Rev. R. Gee, to Marianne, second daughter of the late Capt. R. M. Jackson, RN.

At Charles Church, Plymouth, Mr. P. G. Nettleton, RN., to Maria, youngest daughter of the late Capt. W. H. Bennett, H. E. I. C. S.

At St. George's Church, Hanover-sqr., Lord Walpole, eldest son of the Earl of Orford, to Miss Harriet B. F. Pellew, only child of Capt. the Hon. Sir. F. B. R. Pellew, CB. and K.C.H., and Lady Pellew.

At Florence, on the 26th Oct., Capt. B. Popham, RN., son of the late Admi. Sir H. Popham, to Susan, eldest daughter of P. Murray, Esq., Arthurstone, Perthshire.

At Southampton, T. Stevens, Esq., eldest son of the late G. H Stephens, Esq., Rear-admi. of the Red, to Mary Harriet, only daughter of G. Adams, Esq., member of the Medical Board, Madras.

On the 9th of Sept., in the Cathedral Calcutta, Henry, youngest son of the Rev. G. A. How, vicar of Bosham, Sussex, to Helen Louisa, daughter of the late R. B. Lloyd, Esq., Commissioner of the Court of Requests.

Deaths.

At his residence, 15, Grosvenor-place, London, Rear-admi. J. W. Holland, in the 76th year of his age.

At Brighton, aged 54, Capt. the Hon. Sir J. M. A. Maude, CB., KCH., RN., brother of Viscount Hawarden.

At Hampton Court Palace, Charlotte, the Dowager Lady B. Pechell, widow of Major-Gen. Sir T. B. Pechell.

On the 31st of Oct., at Glasgow, Fanny, the beloved wife of Major Power, 10th Regiment of Foot, and daughter of Rear-admi. Ross, CB.

On the 23rd of Oct., G. Falconar, Esq., 64, Newman-street, London, aged 75.

On the 13th of Nov., at Plymouth, Com. J. Keenan, aged 77, on the out-pension Greenwich Hospital.

At Edinburgh, Mrs. Brabazon, widow of Capt. L. Brabazon, RN.

In St. George's Square, retired Com.

O. Button, aged 74 years,—made Lieut. in 1809.

At Devonport, Anne, wife of Capt. Clinch, RN.

On the 30th of Sept., at Lyme Regis, Dorset, Mrs. A. Oliver, aged 72 years, the wife of Mr. J. Oliver, master, RN.

Oct. the 20th, at Poole, of a decline, N. T. Parrott, aged 20, eldest son of G. L. Parrott, Esq., master, RN.

Oct. the 25th, at the Royal Naval School, Camberwell, in the 9th year of his age, deeply lamented, J. Burn, the beloved and eldest son of Lieut. F. W. Ellis, RN., of Southwold, Suffolk.

Oct. 23d, G. Rowe, Esq., surgeon of Melville hospital, Chatham.

On board H.M.S. Pelorus, of apoplexy, Mr. W. Crawford, (b), mate of that ship

At Plymouth, Louisa Luxmore, daughter of Lieut. Jeans, of the Royal Naval hospital, aged 21.

At Kensington, Mrs. Elcock, relict of Lieut. Elcock, R.N., aged 70.

Drowned on the 15th Oct. while on his passage from London to Cork, on board the Sir Edward Paget, Indiaman, Mr. E. Hutchings, aged 19 years, second son of J. B. Hutchings, Esq., purser of the Actæon, South America.

At Leamington, Capt. T. Garth, R.N. senior captain of 1808.

At Shaldon, Devon, Capt. G. Hessey, R.N. He had seen much service, and was in the battle of the Nile, where he had one of his legs shattered, which was three times amputated.

Oct. 28th, at Sheerness, Lieut. Whitfield, R.N., of H.M.S. Ocean, drowned by the upsetting of his boat in a squall.

Nov. 7th, at Plymouth, Matilda, the lady of W. Eales, Esq., purser of H.M.S. Benbow.

Nov. 8th, at Brockhurst, Jessie Maria, aged 6 years, the daughter of Lieut. D. Welch, R.N.

Nov. 8, at Devonport, Mrs. Coller, widow of Lieut. Coller, R.N., aged 83.

Nov. 5th, at Dublin, in his 59th year, C. H. Townley, Esq., commanding her Majesty's packet Merlin, belonging to the Liverpool and Irish station; on which service he had commanded Government packets under the post-office and admiralty, for more than seventeen years. Mr. Townley's perfect knowledge of navigating through the intricate difficulties of the River Mersey; his firm and manly conduct in all cases of emergency, more particularly when in command of the Avon, returning from Kingstown, in the hurricane of January, 1838, when he received a serious and violent hurt; added to his well known courteous and gentlemanly bearing, had secured for him the character of a most efficient, zealous, trustworthy, and gallant officer, whose professional services must ever be considered a public loss. In private life, he was esteemed and highly respected; and in the bosom of his affectionate and sorrowing widow, and beloved children, his memory will be long and faithfully cherished.

Sept. 5th, in Table Bay, aged 23, J. R. Merewether, third son of Mr. S. Merewether. As first officer of the ship Bucephalus, this humane and intrepid young man had, during the night, made three trips to a wrecked emigrant ship, the Prince Rupert, in the course of which he had succeeded in saving the lives of thirty persons; returning a fourth time to complete his benevolent purpose, the boat was swamped.

ADMIRALTY ORDERS.

Admiralty, Oct. 25th, 1841.

The Lords Commissioners of the Admiralty have taken into consideration that part of their Memorandum dated the 24th May, 1838, relating to seamen gunners which directs, that when vacancies occur in those ratings they may be filled up by any of the crew who may be able to pass, and obtain either a second or third class certificate from a gunnery officer under the inspection of any captain the admiral may appoint, and are pleased to direct that hereafter, when there are vacancies for seamen gunners in any of her Majesty's ships, the captains of such ships may rate any men in such vacancies who may obtain second or third class certificates from the gunnery officer of his own, or, if there be not any gunnery officer, of any other ship, who may be appointed by himself to examine them—such men being subject to re-examination on rejoining the Excellent, and to rejection if not then found qualified.

By command of their Lordships,
SIDNEY HERBERT.

Admiralty, Oct. 19th, 1841.

Great inconvenience having been experienced from the imperfect and irregular manner in which the several Pay Documents and Muster Books are made out, and transmitted from her Majesty's ships and vessels, it is the desire of the Lords Commissioners of the Admiralty, that officers in command of ships will make themselves sufficiently acquainted with the regulations respecting the same, to see that the several documents are made out in a clear and proper manner by their Clerks before they are signed and transmitted.

By command of their Lordships,
SIDNEY HERBERT.

CLEOPATRA ROCK, *Newfoundland.*—Her Majestys's ship Cleopatra whilst running between Fogo island and Fuuk island on the east coast of Newfoundland, passed within two cables' length of a shoal not laid down in the charts. It appeared rocky, of small extent, and very little below the surface of the water. When passing it White island bore W.S.W. by compass, distant twelve miles. This shoal was known to the fishermen at Toulinguet, but its position not accurately.

METEOROLOGICAL REGISTER.

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

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

Month Day	Week Day.	Barometer, In inches and Decimals		Fahr. Ther. In the Shade.				Wind. Quarter.		Wind. Stren.		Weather.	
		9 A.M.	3 P.M.	9 AM	3 PM	Min.	Max	AM.	PM.	AM.	PM.	A. M.	P. M.
		In Dec.	In Dec.	o	o	o	o						
21	Th.	29·82	30·02	42	45	37	47	NW	W	5	4	b	bc
22	F.	30·12	30·00	38	47	29	50	SE	SE	1	2	bc	bc
23	S.	29·45	29·28	52	56	37	57	S	S	4	4	op (2)	or 4)
24	Su.	28·90	28·97	48	52	44	54	SW	SW	6	4	qbcp (1)	bc
25	M	29·04	29·15	42	51	36	53	W	SW	3	2	or 1)	bc
26	Tu.	29·28	29·35	37	47	32	49	N	NE	2	3	bcf	bcp (3)
27	W.	29·43	29·38	47	46	43	48	N	N	7	8	qor 2)	qor(3)(4)
28	Th.	29·58	29·67	47	46	46	48	N	NE	4	6	qor(1)(2)	od 3) (4)
29	F.	29·80	29·80	45	48	43	49	N	NE	4	5	bc	od (3) (4)
30	S.	29·73	29·40	45	46	44	47	N	N	6	5	qor (1)(2)	ogd(3)(4)
31	Su.	29·78	29·81	49	50	46	52	S	S	1	2	ogd(1)(2)	od (3) (4)
1	M.	29·88	29·93	45	46	44	47	NW	W	3	3	ogr(1)(2)	ogd(3)(4)
2	Tu	30·15	30·18	46	48	44	49	N	N	3	2	o	o
3	W	30·32	20·35	45	51	40	52	SE	SE	2	2	o	bc
4	Th.	30·38	30·36	45	47	41	49	NE	E	3	3	of	bc
5	F.	30·35	30·35	45	48	37	49	SE	SE	3	2	o	o
6	S.	30·37	30·39	47	51	34	54	SW	SW	2	2	bc	b
7	Su.	30·40	30·40	46	51	38	52	SW	SW	2	2	bcf	b
8	M..	30 35	30·32	45	48	40	50	SW	SW	2	2	of	bw
9	Tu.	30·30	30·26	42	46	38	48	SW	W	4	5	o	qbc
10	W.	30·12	30·10	49	51	45	52	W	W	4	4	o	o
11	Th	29·98	29·95	50	51	45	53	W	NW	4	5	o	bcr 4)
12	F.	29·58	29·53	51	47	41	52	SW	SW	4	6	bcp (1)(2)	bc
13	S.	29·45	29·43	38	44	36	45	NW	W	6	5	qb	qor (4)
14	Su.	29·03	29·17	36	38	32	39	NW	N	6	6	qors (1)(2	qbc
15	M.	29·43	29·33	28	36	25	37	SE	SE	2	2	bcm	o
16	Tu.	29·41	29·47	30	33	27	34	NW	NW	1	3	bm	bm
17	W.	29·63	29·65	22	34	20	36	SE	E	2	2	b	bcm
18	Th.	29·26	29·37	33	35	31	37	NE	NE	3	4	osr (2)	bc
19	F.	29·45	29·24	42	46	28	47	S	SE	6	4	qor 1) (2)	bcp (3
20	S.	29·10	29·20	35	47	31	49	NE	SW	1	6	of	qbcr (3 (4

OCTOBER—Mean height of barometer = 29·543 inches; mean temperature = 49·0 degrees; depth of rain fallen = 55·0 inches.

November 19th.—Flashes of lightning were seen, and frequent claps of thunder were heard, about 5h. A.M.

TO OUR FRIENDS AND CORRESPONDENTS.

Mr. CUMMING's letter in our next. Also, the useful remarks of Mr. WELLS of the Mastiff.

Our valuable friends, A WEST COUNTRY COASTER, and STORMY JACK, in our next

The communications of MR. BROOKS shall have our best consideration, but they came too late to secure a place in our present number.

Naval Promotions.

The following Naval Promotion has taken place in pursuance of Her Majesty's pleasure on the occasion of the late happy event which has bestowed on these realms a Prince of Wales. The commissions bear the date of November 23rd, 1841.

Admirals of the White, to be Admirals of the Red,

Sir Charles Hamilton, bart. KCB.
Hon. Henry Curzon
Sir Robert Barlow, KCB.
Sir Philip Charles C. H. Durham, GCB.
Right Hon. Lord A. Beauclerk, GCB., & GCH.
William Taylor, esq.
Sir Thomas Byam Martin, GCB.
Sir John Lawford, KCB.
Right Hon. Sir G. Cockburn, GCB.

Admirals of the Blue, to be Admirals of the White,

James Carpenter, esq.
Sir Graham Moore, GCB,, GC. ST. M. & G.
Philip Stephens, esq.
William Shield, esq.
Sir William Hotham, GCB.
Sir J. Rowley, bart. GCB., GC. ST. M. & G.
Sir Edward Codrington, GCB., GC., ST. M. & G.
Sir George Parker, KCB.
Frederick Watkins, esq.
John Erskine Douglas, esq.
Sir John Poo Beresford, bart., KCB. GCH.

Vice Admirals, of the Red, to be Admirals of the White,

Thomas Le Marchant Gosselin, esq.
Sir Charles Rowley, bart. GCB. GCH.
Sir David Milne, GCB.
Sir Robert Waller Otway, bart. KCB.
Sir Willougby Thomas Lake, KCB.

Vice Admirals of the Red, to be Admirals of the Blue,

Sir Charles Ogle, bart.
Henry Raper, esq.
Robert Dudley Oliver, esq.
D'Arcy Preston, esq.
Man Dobson, esq.
Hon. Sir John Talbot, KCB.
John Giffard, esq.
Sir John West, KCB.
Joseph Bullen, esq.
Stephen Poyntz, esq.
Right Hon. John Lord Colville
John Cochet, esq,

Vice Admirals White, to be Admirals of the Blue,

Sir Henry Digby, KCB.
Sir Charles Ekins, KCB.
Benjamin William Page, esq.
Thomas Alexander, esq,

Vice-Admirals of the White, to be Vice-Admirals of the Red.

Sir R. H. Hussey, KCB., GC. ST. M. & G.
Henry Richard Glynn, esq.
Sir Edward Hamilton, bart. KCB.
Sir Thomas Baker, KCB.
Henry Evans, esq.
Hon Sir Courtenay Boyle, knt. KCH.
Sir Robert Laurie, bart. KCB.
Sir William Hall Gage, knt. GCH.
Aiskew Paffard Hollis, esq.
Sir Henry Heathcote, knt.
Sir E. W. C. R. Owen, KCB., GCH.
George J. Shirley, esq.
Sir George Scott, KCB.
James Keith Shepard, esq.

Vice-Admirals of the Blue, to be Vice-Admirals of the Red,

Sir Graham Eden Hamond, bart. KCB.
Robert Honyman, esq.
Sir Robert Lewis Fitzgerald, knt. KCH.
Hugh Downman, esq.
Hon. Sir T. B. Capel, KCB.

Vice-Admirals of the Blue, to be Vice-Admirals of the White,

Right Hon. Lord James O'Bryen, GCH.
Richard Matson, esq.
John Mackellar, esq.
George Barker, esq.
Sir Charles Adam, KCB.
William Grainger, esq.
Sir John Chambers White, KCB.
Henry Garret, esq.
Sir Adam Drummond, knt. KCH.
Robert Hall, esq.
Robert Lloyd, esq.
John Chesshyre, esq.
Sir Thomas Livingstone, bart.
Sir Edward Brace, KCB.
Sir Jaheel Brenton, bart. KCB.
Sir Francis William Austen, KCB.
Kendall Robert Littlehales, esq.

Rear-Admirals of the Red, to be Vice-Admirals of the White,

Norborne Thompson, esq.
Edward Stirling Dickson, esq.

Rear Admirals of the Red, to be Vice-Admirals of

Thomas James Maling, esq.
Sir John Acworth Ommanney, KCB.
Zachary Mudge, esq.
Henry Hill, esq.
Charles Wollaston, esq.
Alexander Wilmot Schomberg, esq.
Sir Edward Durnford King, Knt. KCH.
Henry Vansittart, esq.
Sir George Mundy, KCB.
Frederick Warren, esq.
Richard Peacocke, esq.
James Carthew, esq.
Sir Thomas Briggs, GC. ST. M. and G.
Right Hon. Thomas Earl of Dundonald
Nicholas Tomlinson, esq.
Sir William Parker, KCB.
Sir Robert Tristram Ricketts, bart.
George M'Kinley, esq.
James Katon, esq.
Sir Charles Dashwood, KCB.

Rear-Admirals of the White, to be Rear-Admirals of the Red.

Richard Curry, esq. CB.
William Skipsey, esq.
Hon. Frederick Paul Irby, CB.
Sir John Wentworth Loring, KCB. KCH.
Sir Robert Howe Bromley, bart.
Hon. Duncombe Pleydell Bouverie.
Richard Poulden, esq.
John Dick, esq.
Peter Ribouleau, esq.
Matthew Buckle, esq.
John Allen, esq.
James Noble, esq.
Anselm John Griffiths, esq.
Francis Holmes Coffin, esq.
Jeffery Baron de Raigersfield
Christopher J. W. Nesham, esq.
Sir Charles Bullen, KCB. KCH.
John Wight, esq.
Henry Folkes Edgell, esq.
William Butterfield, esq.
William Young, esq.
Edward Galwey, esq.
Jacob Walton, esq.
Samuel Campbell Rowley, esq.
Bulkeley Mackworth Praed, esq.
Edward Walpole Browne, esq.
John Rouett Smollett, esq.
Hon. William Le Poer Trench
Edward Speyd Clay, esq.
Charles Carter, esq.
Thomas Browne, esq.
William Henry Brown Tremlett, esq.
Sir Samuel Pym, KCB.

Rear-Admirals of the Blue, to be Rear-Admirals of the White.

Right Hon. Lord W. Fitz Roy, KCB.
Matthew Godwin, esq.
Sir Hugh Pigot, Knt. CB. KCH.
Sir Salusbury Davenport, Knt. CB. KCH.
Edward Hawker, esq.
Sir Charles Richardson, KCB.
Francis Temple, esq.
Sir Arthur Farquhar, KCB. KCH.
Henry Gordon, esq.
Sir James Alexander Gordon, KCB.
Hon. Frederick William Aylmer, CB.
Richard Thomas, esq.
James Richard Dacres, esq,
John Surman Carden, esq.
John Sykes, esq.
John Impey, esq.
Henry Manaton Ommanney, esq.
Archibald Duff, esq.
Hon. Donald Hugh Mackay
Sir Francis Mason, KCB.
Hon. Major Jacob Henniker
Thomas Brown, esq.
Robert Henderson, esq.
Sir Lucius Curtis, bart. CB.
Sir John Louis, bart.
Brian Hodgson, esq.
Hood Hanway Christian, esq.

Captains to be Rear-Admirals of the Blue.

Sir Josiah Coghill Coghill, bart.
Nathaniel Day Cochrane, esq.
John Ayscough, esq.
Sir Thomas John Cochrane, Knt. CB.

William Furlong Wise, CB.
Edmund Boger, esq.
William Jones Lye, esq.
Sir George F. Seymour, Knt. CB. GCH.
Hon. George Poulett
James Haldane Tait, esq.
Sir William Beauchamp Proctor, bart.
Charles James Johnston, esq.
Edward Ratsey, esq.
Richard Turner Hancock, esq.
Charles Philip Butler Bateman, esq.
Mauritius A. Newton de Starck, esq.
Arthur Lysaght, esq.
Hon. Josceline Percy, CB.
Hon. Sir A. Maitland, CB. KC. ST. M & G.
Hon. Granville Leveson Proby
Right Hon. G. G. Lord Radstock, CB.
Right Hon. George Earl Cadogan, CB.

Sir Edward Tucker, KCB.
William Maude, esq.
Samuel Hood Inglefield, esq. CB.
Sir William A. Montagu, Knt. CB. KCH.
Valentine Collard, esq.
Sir Edward Chetham, CB. KCH.
Reuben Caillaud Mangin, esq.
William Croft, esq.
Francis Beauman, esq.
James Robert Phillips, esq.
Pringle Stoddart, esq.
William Bowles, esq, CB.
Hyde Parker, esq. CB.
Charles S. John Hawtayne, esq.
James Whitley Deans Dundas, esq. C.B
Samuel Jackson, esq. CB.
Sir E. T. Troubridge, bart. CB.
Charles Gordon, (A) esq. CB

Commanders to be Captains,

Henry Baugh, esq.
William Hext, esq.
William Haydon, esq.
Henry Drury, esq.
Joseph Gape, esq.
William Benjamin Suckling, esq.
William Gordon, esq.
Thomas Sanders, esq.
Douglas Cox, ssq.
Peter Sampson Hambly, esq.
Edwin Ludlow Rich, esq.
Mark John Currie, esq.
Evan Nepean, esq.
George Vernon Jackson, esq.
Robert Stuart, esq.
Charles Colville Frankland, esq.
William Burdett Dobson, esq.
Sir George Young, bart.
William George Hyndman Whish, esq.
Edward Blanckley, esq.
Edward Reeves Philip Mainwaring, esq.
William Jones Prowse. esq.
Charles Henry Seale, esq.
Thomas Fraser, esq.
Thomas Smith, (B) esq.

Peter Christie, esq.
Philip Gostling, Esq.
William Turner, esq.
Francis Deane Hutcheson, esq.
Frederick Moore Boultbee, esq.
Charles Basden esq.
Joseph Paffard Dickson Larcom, esq.
Henry Edward Coffin, esq.
John Coghlan Fitzgerald, esq.
Joseph Sherer, esq., KH.
Edmund Yonge, esq.
Francis Vere Cotton, esq.
Charles Smith, esq.
Francis Harding, esq.
Hon. Edward Wodehouse
Archibald Sinclair, esq.
John Fraser, esq.
Williiam Langford Castle, esq.
Edward Harris Butterfield, esq.
William Dawson, (A) esq.
John James Allen, esq.
James Beckford Lewis Hay, esq.
John Williams Aldridge, Esq.
Hon. Edward Alfred John Harris
John Samuel Foreman, esq.

Lieutenants to be Commanders,

John Nugent, esq.
John Gwynn Wigley, esq.
James Bance, esq.
Benjamin Baynton, esq.
Gustavus Evans, esq.
William Edward Curlewis, esq.
Horatio James, esq.
John Walkie, esq.
George Eyre Powell, esq.
Shephard Mc Cormick, esq.
William Morris. (A) esq.
Thomas Baldock, esq.
John Middleton Waugh, esq.
Joseph West, esq.
Justus Peter Roepel, esq.
Charles Hall. esq.
John Willson, esq.

Nicholas Robilliard, esq.
Andrew Smith (B), esq.
Robert Gregory Welch, esq.
Godfrey Lamplugh Wolley, esq.
William Worsfold, esq.
Charles M. Moncrieffe Wright, esq.
William Hargraves Molyneux, esq.
John Pyke, esq.
Henry Smith (B), esq.
Alexander Bridport Becher, esq.
Robert Augustus Bradshaw, esq.
William Norton Taylor, esq.
Henry Lyster, esq.
John Hills, esq.
Cheeseman H. Binstead, esq.
William Johnstone, esq.
William Simpson Blount, esq.

Gordon Gallie Macdonald, esq.
Charles Gayton, esq.
George Henry Parlby White, esq.
George Woodberry Smith, esq.
Jeffrey Wheelock Noble, esq.
Charles Edmunds, esq.
Peter Duthy, esq.
Nathaniel Frederick Edwards, esq.
Horatio Blair, esq.
Walter Grimstone B. Estcourt esq.
Charles Thomas Rooke, esq.
Edward Lake, esq.
John William Montagu, esq.
Adolphus Slade, esq.
Edward Littlehales esq.
Thomas Bourmaster Brown, esq.
Charles Leach, esq.
Frederick Chevallier Syer, esq.
Kynaston Corbet, esq.
George Clark Mends, esq.
William Edmonstone, esq.
Henry Murray Edward Allen, esq.
William Fordyce Blair, esq.
George Summer Hand, esq.
William Brown Oliver, esq.
Edward Herbert Kenney, esq.
William Maclean, esq.
Francis W. Ansten, esq.
Jones Archer Abbott, esq.
E. Knatchbull Hughes Hallett, esq.
John Goodrich Dick, esq.
Charles H. Hamilton, esq.
Henry Wedderburn Johnstone, esq.
George Augustus Henry, esq.
Thomas Hope, (*b*,) esq.
John Luke Richard Stoll, esq.
James William Morgan, esq.
James Richard Dacres, esq.
Jack Henry Murray, esq.
William Windham Hornby, esq.
Thomas Fisher, esq.
George Keith Ogilvy, esb.
Thomas Pickering Thompson, esq.
Henry John W. S. P. Gallwey, esq.
Robert Tryon, esq.
Hugh Myddleton Ellicombe, esq.

Mates to be Lieutenants,

Mr. Richard Brunton
— Justus B. Kooystra
— William M. Shearman
— Alexander M. Shairp
— George W, Wilkinson
— Henry Wall
— William Thomas Newenham
— William H. John Lome
— Edward Barnard
— John G. Robins
— Adam G. Glascott
— Henry Stoyle
— Henry Thomas Smith
— William Crawford (A)
— George Pyne
— James B. Kinsman
— William Coffin
— Charles B. Bayley
— H. Thomas Ryves
— Edward L. Hoblyn
— Charles F. Doyle
— Charles F. Callett
— Don Philip Dumaresq
— Thomas A. Alldridge
— Joseph Nourse
— William Tottenham
— Poole Gubbins
— Daniel B. Dawes
— E. H. Gunnell
— Gabriel Johnson
— Octavius Cumberland
— Robert S. Moore
— G. E. Ellerman
— Edward Holmes
— Henry Croft
— James A. Paynter
— Richard S. Smith
— Edward F. Roberts
— Charles Knighton
— Robert B. Harvey

Mr. James Wilcox
— Macdonald Bourchier
— James Hamilton (A)
— G. C I. Johnson
— F. Henry Harper
— W. G. J. Cunningham
— Robert Synge
— William S. Sanders
— Louis De T. Prevost
— R. Hill Wharton
— Frederick E. Rose
— J. A. Hodgskin
— C. J. Hoffmeister
— Edward K. Barnard
— Edmund M. Leycester
— Francis B. Sleeman
— John W. Dorville
— Charles Dyke
— Henry Trollope
— Henry Temple
— Henry W. Baugh
— Henry Lloyd
— John R. Thompson
— George Y. Patterson
— Henry Bacon
— E. R. J. Balfour
— D. M'Leod M'Kenzie
— Herbert G. Austen
— William Bailey
— Joseph G. Bickford
— John C. Snell
— George R. Halliday
— Samuel Morrish
— Edward F. Clarke
— Hon. J. W. S. Spencer
— J. M. R. Ince
— Frederick A. Egerton
— Samuel J. Brickwell
— Richard Jessee
— C. J. F. Ewart

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