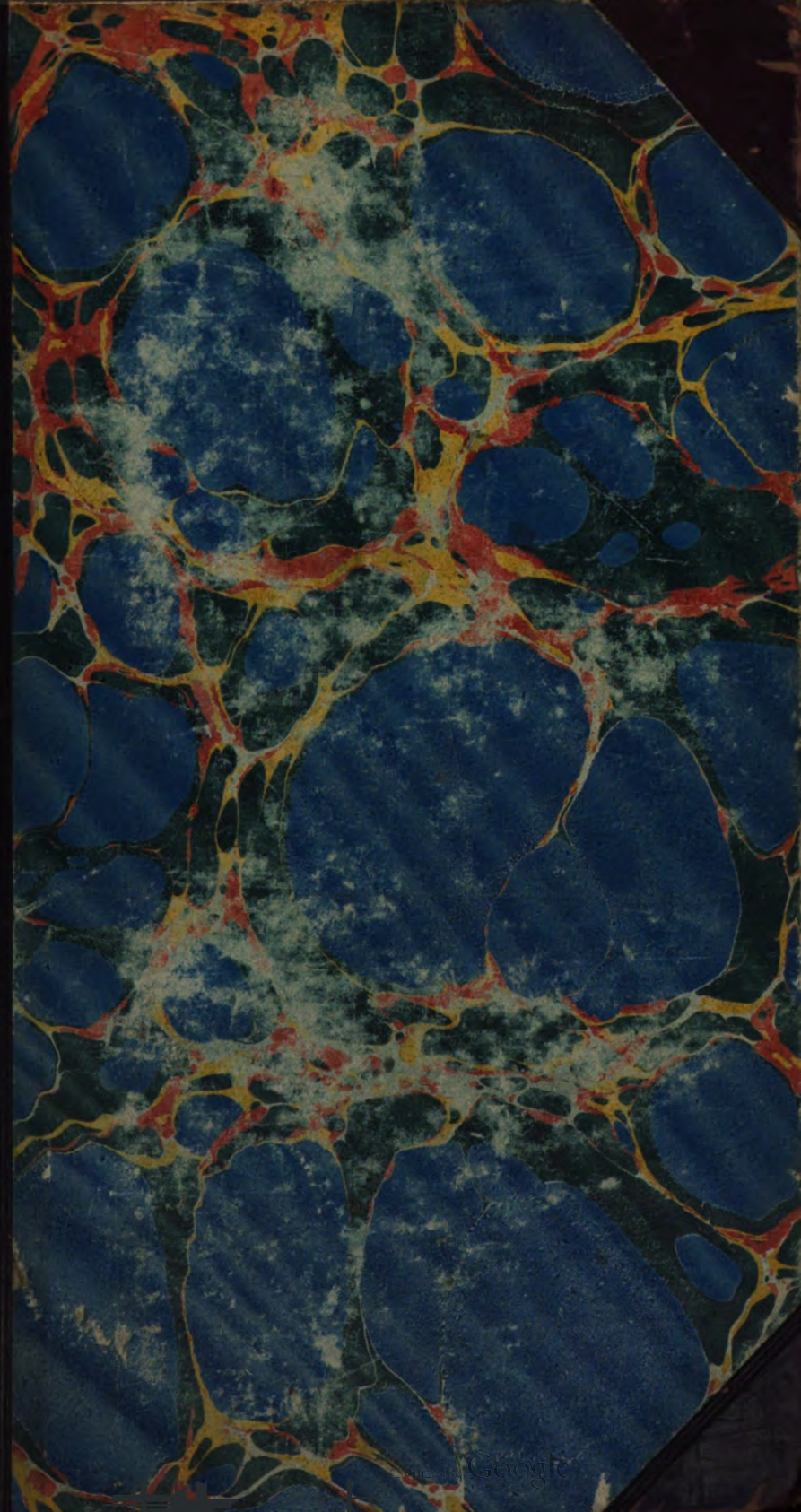

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Commander George Williams. R.N.

Admiralty Surgeon.

Per. 2311 e. $\frac{14}{6}$

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle,

FOR 1837.

A JOURNAL OF PAPERS

ON SUBJECTS CONNECTED WITH

MARITIME AFFAIRS.



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THE
NAUTICAL MAGAZINE.

ORIGINAL PAPERS.

JANUARY, 1837.

THE HAVANA PIRATES.

THAT great events arise from trifles, is an observation realized every day; and if a remarkable illustration of this fact were wanted, it might be found in the following narrative:—

His Majesty's sloop *Curlew*, lately employed on the African station, under the command of Captain Trotter, happened to visit Port Antonio, of Prince's Island, in May, 1833, a place at that time seldom resorted to by British vessels of war. About the same time, Mr. Gould, an American merchant, residing there, learnt from the "*Salem Commercial Advertiser*," a well-known print of the United States, that an American brig, named the Mexican, had been met at sea, and plundered, by a piratical schooner. Some particulars of the transaction were stated, and a tolerably minute description of the schooner given, which agreed with that of a Spanish vessel named the *Panda*, that had sailed from Port Antonio only a few days before for Africa. On the arrival of the *Curlew*, these particulars were communicated to Captain Trotter by Mr. Gould, with the additional information that the *Panda* was then supposed to be lying in the river Nazareth; and on receiving this intelligence, the *Curlew* immediately proceeded in search of her.

The American brig *Mexican*, with a valuable cargo, and 20,000 dollars, on board, sailed from Salem for Rio Janeiro on the 29th August, 1832. In the course of her voyage, on the morning of the 20th September, in lat. 33° N., long. 34½° W., a vessel, like a Baltimore clipper, was seen in the south-west quarter, by the watch on deck. She appeared to be about a mile off, and, standing across the brig's bow, daylight discovered her to the crew of the *Mexican* as a schooner low in the water, with a long straight hull. At first she appeared to be standing from the *Mexican* on her weather quarter, but soon after daylight she tacked, and was observed to be in chase of her.

Suspicious of no pleasing kind arose in the minds of Captain Butman and the crew of the *Mexican*. A council was held, and it was resolved to make all sail away from the unwelcome stranger, which was accordingly done, but without avail, as it was soon found that the schooner gained fast on them, and was already within gun-shot. Another interval passed, when the well-known signal for bringing-to was made by the schooner—a gun was fired, and, as escape was impossible, the *Mexican's* main-topsail was thrown aback, and she lay with her colours displayed, awaiting the approach of her pursuer.

"Where are you from?" was heard from a voice on the schooner's fore-castle, as she ranged up to the brig's stern within pistol-shot.

"From Salem," was the reply of Captain Butman, while he and his crew anticipated no gentle treatment from the number of ill-looking fellows in red caps crowded about the speaker, who had addressed him in a foreign accent.

“Where are you bound to, and what is your cargo?” These questions were concluded with the order, “bring your boat on board,” on which the schooner sheered off, and took up a commanding position on the brig’s weather-beam. The Mexican’s boat was leaky, and this excuse was offered for not sending her, but in vain—the order to “come on board quickly,” was the short and hasty reply.

The last order fell heavily on the captain’s ear, as he turned to his mate, and giving him the trumpet, said, “these fellows must be obeyed. Desperate cases require speedy measures; there must be no trifling here; we must go, come what will.” Directions were accordingly given to clear away the boat, and Captain Butman, with four of his men, departed for the schooner.

It may be difficult to prescribe for such occasions as these, but there can be no doubt that this was a most injudicious step on the part of Captain Butman. The captain of a vessel in such circumstances should never leave her, as by so doing he is more easily made a prisoner himself, and leaves his crew unprotected.

The boat’s course was instinctively directed to the gangway of the stranger, but on her approach she was ordered to the fore-chains, and no sooner had she reached them, than five ruffianly fellows, each armed with a long Spanish knife, sprang into her, and ordered Captain Butman to steer for the brig. On gaining the brig’s deck, the work of plunder was begun by each of the pirates drawing his knife. Captain Butman was ordered to his cabin, and, followed by three of them, who, pointing their knives to his breast, said he had money on board, and unless he would disclose where it was to be found, he should be put instantly to death. Anything but immediate compliance was vain, and calling his mate and men, the captain gave directions for the money to be got up. The crew, with the mate, being called aft to get it in the cabin, the pirates went on deck, and permitted only one to go down at a time, with the view perhaps of preventing the chance of their being suddenly overpowered.

The crew were at work in the cabin in getting out the money, but the work was not done fast enough, and the pirates were soon below, intimidating them with threats and imprecations, and beating them with their knives, to let them know if more were necessary that they were in earnest. In this manner all the boxes of money (ten, containing 20,000 dollars) were gradually got on deck, and the schooner’s launch was sent for it, and conveyed it to her. With the launch and the money, one of the pirates went to the schooner, leaving the remaining four to ransack the brig for more plunder. The mate was then attacked by one of them, who, it appeared afterwards, was the boatswain of the schooner, and was driven to the fore-castle, where another was placed as a guard over him. His watch was plundered of him in an instant; but more money was the object of the pirates, and the lives of all were threatened to produce it, as they hurried fore and aft the deck, fearful of being discovered by a sail heaving in sight. The captain’s chronometer was demanded by the boatswain, who, disbelieving the assertion that he had not one in the brig, broke the speaking-trumpet about his head, after robbing him of his watch, and some doubloons he had about his person. The crew were at this time secured in the fore-castle, while every chest and locker was ransacked for more money. Finding them-

selves disappointed, the pirates took possession of coils of rope, leather, and other articles; and having thrust the mate into the cabin, and secured him with the captain, they went on board the schooner, to consult with their lawless comrades on the next measures that were to be adopted. In ten minutes they returned hastily, closed the fore-scuttle of the brig, and after-hatchway, and commenced the work of havoc on deck. The compasses were broken, the rigging cut away with an axe, tiller-ropes, braces, running-rigging, sails; the yards let down, spars thrown overboard; and, to complete their atrocious deeds, short of murdering the crew at once, they left a pot of tar, and a quantity of tarred ropeyarn in the caboose on fire. In this state they left the brig, taking her ensign and pendant, and her only boat with them, which, when they got alongside of their own vessel, they scuttled; and after hoisting in their launch, and the brig's spars they had carried off, they made sail to the south-east, to reconnoitre a ship that had hove in sight, leaving the Mexican to her fate, and expecting every moment to see her a mass of flames.

Inscrutable are the ways of Divine Providence in bringing to summary or future justice the atrocious deeds of man. While the work of plunder had been going forward, the schooner had taken such commanding positions of the brig, that she might speedily have sunk her with her guns. The feelings of Captain Butman and his crew, throughout the whole transaction, can be better conceived than described. Threats, imprecations, and blows; in fact, everything short of actual murder were dealt on all, while the work of robbery and plunder went forward. But it was now complete; the worst had passed over, and the pirates were gone with all that was worth their taking. But they had neglected to secure the cabin skylight, and the mate judging they were standing away under sail, crept up through it on deck, in time only to save their lives, and the whole vessel from destruction. The caboose was on fire, the mainsail would soon have been so, and a few short moments more would have been the last of the Mexican and her crew. But they were saved; the hand of Providence was there; and by their exertions and perseverance the vessel was again put into some order, and they reached Salem, where the account of the piracy was speedily published—the same account that was put into the hands of Captain Trotter at Port Antonio, and was the cause of his proceeding to the river Nazareth.

We must yet leave him on his voyage thither, to mark the departure of a schooner from Havana on the 20th of August, 1832. Dark was her purpose, and mysterious her proceedings. Her course was unknown, for she had evaded the last visit of the Spanish authorities, although she bore their flag. Her crew numbered thirty-one, and her cargo* was goods for the African market. Onward she steered, across the ocean's wave; the shore of Africa lay before her; in her track lay guilt and crime. * * * * * While she was at Prince's Island, after visiting the African coast, a vessel under the American flag arrived from Salem, bringing news of piracy. Strange stories were quickly circulated: an American brig had been robbed at sea; the plunder had been great, and suspicions ran high respecting the schooner, in the

* 30 bales of cloth, 250 muskets, 250 barrels of powder, one barrel of knives, one case of necklaces, one case of cutlasses, one box of flints, and two cases of axes.

midst of which she departed. Nor were these suspicions ill founded. Nothing respecting the vessel was known, but it was observed that her crew had been lavish of dollars. No one knew whither she had gone; but soon after her departure the Curlew accidentally arrived, and followed her, as we have before said, to her suspected hiding-place, the river Nazareth.

On the 4th of June the Curlew arrived off the mouth of this river, and immediately her three boats, manned and armed with forty men, under the immediate command of Captain Trotter, proceeded in quest of the pirate. After rowing all night, the boats got sight of the object of their pursuit lying at anchor, and in order to secure her capture, they kept inshore, to avoid being seen from the vessel; but from the nature of the river where she lay, it being impossible to conceal themselves long, when they were within a mile of her, the boats displayed their colours. Immediately they were seen by the pirates in the schooner—the latter took to their boats, and hurried on shore, with the exception of one man, who soon after followed the rest in a canoe. Captain Trotter made direct for the boats, but was too far off to come up with them; seeing which, he, with the other boats, made for the schooner. Smoke was seen to issue from her, and on the boats getting on board, she was found to be on fire near the magazine, in which were sixteen casks of powder, below the cabin floor; a quantity of cotton and brimstone was burning, which would shortly have communicated with the magazine, but for the timely arrival of the boats.

By the exertions of the Curlew's men, the fire was extinguished, and search was made for her papers, but without success; nor could any valuable property be discovered. A few private letters, however, were found, with the signature of Pedro Gibert, addressed to the boatswain and carpenter of the Panda—a sufficient proof of her being the same schooner which had been at Prince's Island, and in search of which the Curlew had sailed.

But among the letters, the following document was found; it is one of a scarce description, and is not unworthy of a place in these pages, as it may afford a hint to our cruizers in the West Indies:—

“ Instructions for Peter Gibert, Captain and Master of the Spanish Schooner Panda.

“ You being about to sail on a voyage agreed upon between us, the following are the principal points which you are to observe during said voyage, in order that the result may correspond with our wishes, which are the following:—

“ 1. You are authorized, from the time of your sailing, to pursue such a course as may appear to you to be best, first consulting the first mate, Bernardo de Soto.

“ 2. Upon your arrival at the place of your destination, you will use all diligence in your power in the purchasing and shipment of your cargo, which, from the selected and abundant invoice of your outward cargo, we have no doubt will be a fine one.

“ 3. You will take particular care that there be observed on board, between the officers and men, the greatest subordination and best order, adopting the necessary measures for keeping up good harmony among all.

“ 4. Neatness and cleanliness being particular objects of interest, you will take the greatest pains that they be observed on board, and that the officers contribute their care and zeal to effect this object.

“ 5. You will avoid, as much as possible, meeting with any sail, particularly if there be any appearance of her being a suspicious one ; therefore you will have kept a good look-out from masthead, charging them with the greatest vigilance, particularly in dangerous places.

“ 6. On your return to this island, the places for standing inshore will be the following :—

“ 1st. Should your route be between Cape St. Antonio and Cape Catocha, avoiding making the first, also the two Caymans, the great and lesser, and the Isle of Pines, nearing as much as possible the coast of said Cape Catocha, when you will stand off until you consider yourself in the latitude of Bayahonda, Cabanas, or Guagibon, or to either of these three places, you will direct course, taking the nearest, and set a French flag on the fore-top, and give immediate information, if at the first place, to Don Antonio Marzau, or to Don Domingo and Don Ramon Arozarena ; to Don Joachim Pelaez, at the second place ; and at the third place, to Don Joachim Garcia, with whom you are acquainted.

“ 2nd. By the old channel, passing between the Caycos and Mariguana, or well to the north of Crooked Island, in order not to make the Rogues, come to the Cove of Camarioca ; or, if it should be at the close of the evening when you near the coast, and not seeing any suspicious sail, enter at night in the very port of Matanzas, with the greatest silence, saying that you are from St. Thomas, in ballast, and give immediate information to Don Simon de Jimeno, whose directions you will obey, the same as if our own.

“ If you should come to Camarioca, you will hoist (in time that the sentry at the summit may see it) the French flag on the fore-top, in the manner I have before directed, and immediately give information to Don Francisco Garcia, or to Don Fulgenica Garcia y Saex, (this last named is Captain of the Division,) they will tell you what you ought to do, for they are already advised in regard to it.

“ 7. Immediately upon your arrival, at whatever place it may be, you are to give proper notice of the place where your cargo is, stating the number of *Bulks** you have brought, &c.

“ 8. In case of extremity, and you cannot escape the chase of an enemy, you will disembark wherever you can ; for, in extreme cases, there is no other way to do than to use your best judgment to save the voyage.

“ We have no further instructions to give you, but that, in an unforeseen event, you are authorized to follow the dictates of your best judgment and prudence, first procuring, if need be, the opinion of the other officers.” [The above instructions are unsigned.]

The only other remarkable things found, besides a quantity of rice and farina, were five ensigns and two pendants. These consisted of two

* In Spanish, “ *Bultos*.” Bulks, or any large bundle, of no determinate quantity, stated by Mr. Peyton, one of the interpreters, to mean *Negroes*, and to be a disguised term used by slave dealers in the Havana.

Mr. Badlam stated to the court that he supposed it to mean *Negroes*, but did not feel authorized to use that term in the translation.

Spanish ensigns, and one pendant ; one new United States ensign and pendant, one new French ensign, and one old Danish merchant ensign. She was then taken possession of ; and Captain Trotter determined, if possible, to get possession of her captain and crew, who were on shore at the town of Nazareth. Shortly after this, a Portuguese, named Simon Peter, one of her crew, was brought off by the natives, and four others were afterwards seized ; they appeared not to have belonged to the original crew of the vessel, but having joined her after the piracy at Prince's Island, were detained as prisoners.

The Panda was removed to the mouth of the river, where the Curlew had been left, and every inducement was used by Captain Trotter to prevail on King Passall, the native chief of the district, to give up Captain Gibert, and his crew, who, it appeared afterwards, had been removed as prisoners by the natives to a house where they were kept guarded. Various promises were made by the king, and delay occasioned by their non-performance, till Captain Trotter determined to effect, if possible, by harsh measures what could not be done by fair. The Panda was again brought up the river, and anchored off the town, and Captain Trotter went to the king, and, after explaining to him the importance of giving up the captain and remaining crew, demanded them of him in person, threatening destruction to the town if he was refused. He returned on board, and at the expiration of an appointed time, the demand not being complied with, a shot from the Panda's long twelve-pound gun amidships was fired over the town. A misfortune here occurred, which threw a temporary gloom over the proceedings. Some loose powder was on the deck, a spark from the gun ignited it, communicated with the powder in the magazine, and the Panda the next moment was blown up.

The accident occasioned the loss of four lives, among whom were the purser and gunner of the Curlew, the others being part of her crew. The surgeon of the Curlew, Mr. Mackay, had jumped into the fore-rigging, to see where the shot fell, as he would be there clear of the smoke. The purser had remained aft, and was picked up dead an hour afterwards. The gunner was also picked up, but was so much injured that he lived only an hour ; and a boy who was below was never seen or heard after the explosion. Captain Trotter happily escaped injury, and was picked up by the boats. Besides the Panda, the greater part of the fire-arms of the Curlew were also lost, which rendered further proceedings impossible, and, in consequence, Captain Trotter determined on going with the Curlew to Fernando Po, for a fresh supply of arms, and to return to secure the pirates.

On the 20th June, the Curlew left the river Nazareth, Capt. Trotter being disappointed in getting possession of the pirates, and sailed for the Gaboon, in quest of the second mate of the Panda, concerning whom he had obtained some information ; but on arriving there, it was found that this person had departed for the Havana, and the Curlew proceeded on to Isle St. Thomas and Prince's Island. At Port Antonio, of this island, to which place Captain Trotter had gone for stock, he learned accidentally that two Spaniards who had quitted the Panda when she was there, were at Whidah.

In the hopes of joining a prize crew of the Curlew, which he expected to find at Cape Coast Castle, and also of meeting the Brisk, Lieut.

Thompson, there, as well as of gaining further intelligence of the Panda's crew, Capt. Trotter sailed for that place. Not finding the Brisk nor her men there, Capt. Trotter left one of the five prisoners he had on board of Panda's crew, with Lieut. Stephens, in order that they might assist him in recognising any of the others in vessels that he might board.

After touching at Accra the Curlew proceeded to Whidah and demanded of M. de Souza, an influential resident, information respecting the two Spaniards above mentioned. The reply given was, that one had gone to Bahia, and the other, on the appearance of the Curlew, had given himself up as a slave to the black native chief, the king of Dahomy.

A sudden attack of fever here, prevented Capt. Trotter from taking active measures respecting this man, probably the effect of disappointment and injury at the blowing up of the Panda, assisted by the exposure in the Curlew's boats, in boarding every vessel himself that arrived in the roads, with the hopes of discovering any of the Panda's crew. Further search here being of no avail, the Curlew, after cruising some days off Whidah, sailed for Fernando Po, and arrived there on the 15th August.

A few days before the arrival of the Curlew at Fernando Po, Capt. Beecroft, an officer of the establishment at that place, happened to be at Bimbia island at the mouth of the Cameroons, where he accidentally met with five Spaniards. These men accosted him, saying that they had been shipwrecked in a vessel of their country, and requested that he would give them a passage to the old Calebar river. This Capt. Beecroft said he could not do as he was going to Fernando Po, but that they could go with him there, and then find their way to Calebar from that island. They accordingly took their passage with Capt. Beecroft, and were about to sail again from Fernando Po for Calebar, when Capt. Beecroft received from his agent at Bimbia a quantity of Spanish dollars, with information that they had been picked up at low-water mark, and were supposed to have been lost from the canoe in which the Spaniards had arrived there. Suspicion immediately flashed on the minds of Capt. Beecroft and Col. Nichols, the governor of Fernando Po, that these Spaniards had plundered the vessel in which they stated they had been wrecked, and had thrown away their dollars to escape detection.

Moreover, in case of their having belonged to the Panda, the account of whose piracy had been brought by the Curlew, which by a singular coincidence was then at Fernando Po, it was also determined that they should be confronted with one of the Portuguese prisoners which Capt. Trotter had on board from the Nazareth. This was no sooner done than they were all immediately recognised as part* of the Panda's crew. One of them, Jose Perez, being admitted as king's evidence, disclosed the fact, and gave the following account of the piracies which the Panda had committed :—

“ I entered on board the schooner Panda, Pedro Gibert, at Havana ; she had two iron guns and one long brass one abaft the mainmast. We sailed about thirteen months ago for the coast of Africa, on a slaving

* Their names were Gusto Baldez, Juan Montenegro, Antonio Garcia, Juan Lopez, Jose Perez, the latter admitted as king's evidence. Manuel Delgado, alias Fernandez Bergeranno, one left behind, was secured afterwards.

voyage. About a month after we had been at sea we boarded a ship at night; I believe she was English. We took two coils of rope, two goats, some syrup, and sweetmeats. About twenty days afterwards we fell in with an American brig; first saw her at 6 A.M. I was at the masthead at daylight, but did not see the brig until she was seen from deck, and I was kept all day at the masthead for it.

"About 8 A.M. we closed her, hailed her to send her boat on board, which she did, then the second officer, boatswain, carpenter, and four men jumped into her and made them row back to the brig; the second officer being armed with a cutlass and the others with long knives.

"Soon after they were on board, the boatswain came to the after-part of the brig and hailed the schooner, showing the captain his hand full of dollars which he threw into the sea. On this the captain sent the schooner's boat to the brig, with some hands, and they set about plundering her. They sent the brig's crew to the fore-castle, and then secured them in the cabin; but before this, they made them get up the boxes of dollars from below. Then they put some tarpaulins and something else into the caboose, and set fire to them, and left the brig. But they brought with them ten boxes of dollars, half a cask of butter, about 300 dollars in a bag, I was told got from the captain, but I did not see it. Then they scuttled the brig's boat and made sail away from her for Africa.

"When we boarded the American there was another brig in sight, and when we left her a ship was seen to leeward. When we made the coast we went to Grand Passim for water, and were chased off for about eight hours by a frigate, but we made the river Nazareth, to purchase slaves.

"After we had been in the Nazareth about two months they sailed for Prince's Island to refit; but before that they cut off the figure-head of the schooner, and made her all flush with the bulwarks. I was left on shore in charge of the slavehouse, while the vessel was gone to Prince's; she came back to the Nazareth in about a month.

"About five months afterwards I heard that a man-of-war brig was at the mouth of the Nazareth, and after anchoring she sent her boats up the river to board the schooner. As soon as the schooner's people saw them, they took to their boats for the shore. I was by the captain on shore, and heard the carpenter tell him that he was the last person out of the vessel, and had got her papers. The carpenter told him, also, he had put a barrel of powder in the caboose, with a train from it into the cabin, leading to the magazine, and had left a slow match burning. He expected before then, he said, to have seen the English all blown into the air together. The captain asked the carpenter what he had made the match of, and was told 'brimstone and powder.'

"I was away in the bush, but I heard firing on the town and saw rockets, but I believe nobody was hurt.

"When the schooner anchored off the town of Nazareth, a few miles outside of the river, in charge of the man-of-war officers, the Spaniards all took to the bush except the captain, who remained in the town, secreted by the king. Four days after the man-of-war sailed from Nazareth, the schooner Esperanza arrived. Some of the crew of the Panda went on board of her.

"About a month ago, five of my shipmates and I got a canoe, and

our captain gave us leave to go where we liked, and he gave us all our share of the plunder we had got; the whole was 1,960 dollars, but my share was 250.

“We arrived in the Cameroons river about six days afterwards, and hearing that an English schooner was at Bimbia, we went to her, but agreed to say that we were shipwrecked seamen. We wanted to get to Calabar or Bonny, but as we could not get there without going to Fernando Po first, we threw most of our dollars away at Bimbia and kept only a few.”

Such was the confession of Jose Perez before Col. Nicholls, Mr. Beecroft, and Mr. Ballard, justices of the peace at Fernando Po. The trivial circumstance of the dollars* being left exposed at low-water, had first produced suspicions concerning these men, and the happy coincidence of the Curlew being at Fernando Po, at the exact time of their arrival, with some of their shipmates on board to recognize them, were the means of their being taken. Who shall say that the hand of Providence was not here? One of the six men, five of whom had now been secured, were left at Bimbia, but a vessel was sent for him by Col. Nicholls, in his usual zeal and alacrity, and they were all committed under distinct warrants as prisoners, and sent to the care of Capt. Bate, commandant of the island of Ascension, in the William Harris, transport, and were eventually brought to England in the Curlew, by order of Admiral Warren, the commander-in-chief on the African station.

[To be concluded in our next.]

STEAM-BOAT EXPERIMENTS.—*On the Reduction of Steam-power.*
By Professor Barlow.

[The following Experiments by Professor Barlow, may interest those who are concerned in steam-navigation on rivers, but they will see that the results must not be applied to those vessels performing sea voyages.]

H.M. ST. VESSEL Lightning has been employed in the river Thames in making these experiments, from which it will appear that, by reducing the steam-pressure from $3\frac{1}{4}$ lb. to 1 lb., a difference is made in the speed, when going with the wind, of only about one-fifth of a mile per hour, and with head to the wind of less than two-fifths of a mile per hour. The mean of this loss of velocity is three-tenths of a mile per hour, the reduction of steam-power being about one-fifth, that is, by admitting of a reduction of less than one-third of a mile per hour, or eight miles per day. A vessel which at the full pressure can only carry ten days' fuel, with this reduction would be enabled to carry twelve days' fuel, and perform a voyage longer by about 330 miles, *i. e.* 2,330 miles instead of 2,000. There are different ways in which this reduction may be effected; viz.

1. By reducing the pressure, as is done here.
2. By using an engine of less power; or
3. By causing the steam to act more expansively.

Which of these will be the best, is a question for the decision of an engineer.

The experiments shew, that for a vessel to go quickest, and to go

* These dollars were recovered, and being sent to Col. Nicholls at Fernando Po, were by him sent to H.M. Treasury.

farthest, are two different considerations, and require to be treated on different principles.

Experiments on board H.M.S. Lightning, to ascertain the difference of speed due to different amounts of steam-power, taken in successive hours by Massey's Patent Log, between 8h. A.M. and 3h. P.M., Nov. 15th, 1836. Intervals of time, for each experiment, one hour.

Present, Messrs. Ewart, O. Lang, Capt. Oliver, R.N., and Mr. Barlow.

Exper. 1. Full steam with the wind. Exper. 3. Reduced steam against the wind.
 „ 2. Reduced steam with the wind, „ 4. Full steam against the wind.

Number of Experiment	Speed by Patent Logs.			Mean Speed.	No. of Strokes per minute	Pressure by Steam Gage.	State of Vacuum.
	Starboard No. 4529.	Midship No. 4530.	Starboard No. 4532.				
1	8.19		8.34	8.26	24 to 25	3½ lbs.	27 inches
2	8.03		8.05	8.04	22½ to 23½	1 lb.	27½
3	7.44	7.42	7.63	7.53	22½ to 23½	1 lb.	27½
4	7.92	7.91	7.90	7.91	24 to 25	3½ lbs.	27

Mean No. of strokes, full steam 24½. Mean speed 8.08 miles
 Do. do. reduced do. 23. do. 7.78 do.

Difference 0.3 do.

Steam used at full pressure At reduced steam
 Atmosphere 14¾ lbs. Atmosphere 14¾
 Above do. 3¼ Above do. 1

Total, 18 15¾
 No. of Strokes 24 No. of Strokes 23

Product 441 Product 362

Power employed, nearly as 11 to 9
 Speed as 25 to 24.

CHINA SEA.—SHOAL OFF THE GREAT NATUNAS.

THE following account of a dangerous shoal in the track of vessels passing down the China sea, has been handed to us by Capt. Whiteside, of the ship Sarah, from China towards London. The following is an extract from the Sarah's log :—

“1st March, 1836, A.M.—Moderate and fine, all sail set. At daylight, moderate winds, with passing showers of rain—weather thick—saw part of the great Natunas, bearing S.W. At 7h. 50m. the man at the mast-head reported shoal water ahead; the helm was immediately put down, but before the ship came to the wind, had passed over several coral patches, in doing which the ship received a slight shock from one of them. In all studding sails; hauled off S.E. by S.; sounded the pumps and found no water in the well. N.B. This appears to be an extensive coral bank in patches, for the bottom could be distinctly seen in several

places around the ship, and in one place in particular, about two cables' length on the lee bow (head being S.E. and wind E.N.E.) it appeared very shoal. Should suppose there was not more than twelve or thirteen feet water from the appearance. A small island off the Natunas bore about S.W. by W. distant about 6 miles. Got some sights for chronometer between the showers, and at noon got an indifferent meridional altitude of the sun, which would place the shoal in about $3^{\circ} 58' 24''$ N. and $108^{\circ} 33' 2''$ S." J. S. W.

DANGERS OFF THE SOUTH WESTERN COAST OF AUSTRALIA.—
Communicated by Sir James Sterling.

Maudes' Reef, off King George's Sound, about a quarter of a mile in diameter, centre in lat. $35^{\circ} 13'$ S. long. $117^{\circ} 57\frac{1}{2}'$ E. on Flinder's chart, according to the following bearings of the land:—

From Bald Head extremity . . . S.W. by S. by compass
 " Eclipse Island summit . . . E.S.E. "
 " Peak Head summit . . . S. $\frac{1}{4}$ E. "
 " Vancouver's Reef S.S.W. $\frac{1}{4}$ W. "

Soundings in 45 fathoms shelly sand, stones, and coral $2\frac{1}{4}$ miles to E.S.E. from Maude's Reef.

" 44 fathoms coarse sand and shells, $2\frac{1}{4}$ miles S.E. by S. from do.

" 47 fathoms coarse speckled sand with coral $3\frac{1}{4}$ miles S. by E. $\frac{1}{4}$ E. from do.

Apparently three or four fathoms on the shoalest part at low-water—as the sea breaks upon it only at times, when the water is low, and a heavy sea running.

Coventry Reef, off Cape Peron, bears from the N.W. extremity of Cape Peron, S.W. $\frac{1}{2}$ S. (magnetic) distant about $4\frac{1}{4}$ miles. It is small, and nearly awash, with apparently seven to ten fathoms all round.

From Sandown, on Garden Island, (some remarkable white sand hills about $2\frac{1}{4}$ miles from its south end,) Coventry Reef bears S. $18\frac{1}{2}^{\circ}$ W. (magnetic) distant 8 miles.

Cusuarina Shoal, $2\frac{1}{4}$ miles W. $\frac{1}{2}$ N. (magnetic) from N.W. point of Garden Island, has six or seven feet water on its shoalest part. It is situated on the five-fathom bank, westward of Garden Island, and has ten fathoms water a quarter of a mile to the eastward, and half a mile to westward of it.

Seaward Reef, with six or seven feet water upon it, is a small patch of rocks on the five-fathom bank above referred to, and is situated three miles and a quarter W. $\frac{1}{2}$ N., by compass, from the north end of Carnac Island, or in a line between the S.W. end of Rott-ness and the Haycock on Garden Island, and in a line with Rowboat-rock and Arthur's Head at the entrance of the Swan River. Half-a-mile E.N.E. from Seaward Reef is a shoal rocky patch of two fathoms, with six, and six and a half fathoms water between it and the reef.

The Rambler, (off Cape Leeuwin,) reported to be a small cluster of rocks, even with the water's edge, lying 12 or 15 miles S.W. by compass, from the remarkable white sand patch on the coast, six or seven miles to the northward of the S.W. extremity of Cape Leeuwin.

Note.—Experience having more recently shewn that no reef exists in the position pointed out, the Rambler is probably the same as the Geographe.

Geographe Reef, off Cape Leeuwin, bears S. 27° W. by compass, from the body of the remarkable sand patch on the coast to the northward of Cape Leeuwin; N. 55° W. by compass, from the largest St. Alouam Island; and N. 67° W. by compass, from a small dark-coloured rock with a peaked summit. Geographe Reef appears to be about six miles off the nearest land, and has twenty to twenty-four fathoms water at the distance of one-sixth of a mile from its S.W. and N.W. sides. Other reefs, partly dry, occupy a considerable portion of the space between it and the main; but the channels amongst them are probably foul and rocky. When the schooner *Ellen* passed close to the reef, on the 22d of Feb., 1835, the sea broke upon it only occasionally, when it appeared to be about half a mile in extent, N.N.W., and S.S.E., and 200 yards wide; the sea was very little discoloured in its vicinity, and when not agitated would prevent the danger being seen at less than a cable's length. There may probably be less than two fathoms on some of its most elevated rocks.

Pollock's Reef, off the Recherche Archipelago, bears S. $\frac{1}{4}$ W. by compass, distant fourteen miles from the S.E. island of the Archipelago of Recherche; lat., by Flinder's Chart, 34° 35' S.; long. 123° 26' E.

Seen by the barque *Merope*, Captain Pollock, in March, 1834, and supposed to extend eight or ten miles eastward from the above position, but as the wind was blowing fresh from the westward at the time, and it broke only in one place, the remainder was probably its wake or stream.

Anchorage in Flinder's Bay, round the E. side of Cape Leeuwin. Best anchorage for ships appears to be in about seven fathoms, stiff brown clay, with the flagstaff on Barrack Point, W. three-quarters N. St. Alouam's Island S. half E. and extreme of the main land S.W. half S. Anchorage of H.M.S. Sulphur.

Naturaliste Reef, off Cape Naturaliste and Geographe Bay, appears to be accurately placed on the French chart, sixteen or seventeen miles N. by compass, from the extremity of Cape Naturaliste.

When seen from H.M.S. Sulphur, on the 31st of October, 1831, its west end bore S. 10° W. (magnetic) when in a line with the highest land over Cape Naturaliste, and the ship's head was W. by N. It consists of three patches of rocks, extending about one and a quarter mile N.E. by E. and S.W. by W. with passages between them. Thirteen fathoms water at one mile N. from the reef. Swell not very great at the time, and not constantly breaking. Captain Hudson of the ship *Orelia*, saw this reef in 1830, and set it in a line with the extremity of Cape Naturaliste, bearing S.W. by compass, from which he considered it was distant sixteen to seventeen miles.

[The foregoing is from the Ceylon Government Gazette, (of April 2, 1836) and the editor has very wisely acknowledged his authority,—“Sir James Stirling.” But he has not extended the same courtesy to the Nautical Magazine. We find it followed by the valuable observations of Captain Middleton, on King George's Sound, and the navigation of the south coast of Australia, copied wholly from our volume for 1835, (p. 449, August.) We are satisfied this was not intended by our contemporary, and while he is forwarding our object of diffusing useful information, we have no doubt he will on other occasions name the source from which he derives it.—Ed. N.M.]

ON THE HURRICANES OF THE NORTH ATLANTIC.

By degrees, Mr. Editor, we may hope to attain something like a correct knowledge of the modes of operation, and the laws by which these violent tempests are governed. Some advance has been lately made; let us therefore keep the subject "alive," and recollect that only a very short time ago, familiar as they have been, hurricanes were known alone from the devastation they committed, and the apprehension to which they gave rise. I am glad of this opportunity to acknowledge the value of Mr. Redfield's observations, published in your magazine; to that gentleman navigators in general, and those who traverse the West India seas especially, are greatly indebted.

The following points appear to be entitled to confidence :—

No. 1. It has been proved in some instances, that when a complete circle is formed, the wind gyrates from right to left, or, according to sea language, "against the sun," but that the *shifts* will seem to an observer to go from left to right.

This has been proved in the hurricanes of 29th July, 1805, and 3d August, 1809, when the wind seemed to shift from E.N.E. to S.E. by S., and S.S.W. by the east, whilst the whole time it was pursuing one steady path from right to left. The progression and lateral movements of the storm, by altering the position of the ships, with reference to the boundary of the circle, create the *apparent* changes, and solve the mystery, which will be more fully explained as we proceed.

No. 2. That the lateral vibrations or oscillations of hurricanes are generally, if not invariably, limited in extent.

This would seem to be sufficiently proved from the circumstance attending vessels and islands not remotely situated from each other—one is entirely exempt, whilst the other suffers severely, although separated by a distance of twenty or thirty leagues only.

No. 3. That they progress westerly, inclining northerly, in the inter-tropical seas, generally forming a curvilinear course, some few having been traced as pursuing a right line.

The routes, as traced in Mr. Redfield's chart, (given in the Nautical Mag. for April, 1836,) determine this.

No. 4. That the direction of the wind is independent of the progression and lateral motions of the storm.

This may be inferred (indeed relied on as established) from the singular fact, that the progression of the storm is absolutely *slow*, in comparison with the tremendous downward pressure of the wind, or its velocity round the circle.

No. 5. That the lunar periods formerly calculated to determine the days on which these storms will happen, appear to be inapplicable.

This is evident on consulting Sir Home Popham's table, where, in twenty-one instances, nine only were coincident.

No. 6. That when a vessel falls into the hurricane with the wind at N.E. to east, she will be under the north-western or northern verge of the storm, in the fourth quadrant.

This will be made apparent by consulting the diagram, as under the northern verge the wind will be at *east*, under the western it will be at *north*, under the southern at *west*, and under the eastern at *south*.

The following points remain for investigation :—

No. 7. Are there sufficient reasons for dividing hurricanes into—1st, the local, and 2nd, the progressive? and are these susceptible of being subdivided?

No. 8. 1st, Does the wind *invariably* gyrate from *right to left, around a centre*, in all hurricanes? 2nd, In an incipient storm, when a circle is not completed, may not the wind oscillate? 3rd, Does the wind, in any hurricane when a circle is formed, proceed *towards a centre*, as has been thought and asserted? and in this operation (admitting it) do the currents of air gyrate, and has the hurricane a progressive motion, independent of the wind, or is it stationary?

No. 9. That hurricanes experienced among the West India islands, that are not merely local disruptions, originate in the *variable* latitudes.

No. 10. 1st, That the commotion is *principally* caused by the cold streams of air from the northward, being suddenly and prematurely disrupted before the lower latitudes of the temperate zone have time to “cool down”—the consequence of an *early* winter. 2nd, That hurricanes are occasioned by the struggle of two opposing winds, as, upon the sun's going back from the northern tropic, the westerly winds rush down with violence on the parallels of the trade-winds; and the opposition of these two currents of air cannot fail of producing a great commotion. 3rd, That these phenomena, as well as the general winds in which they occur, are to be ascribed mainly to the mechanical gravitation of the atmospheric strata, as connected with the rotative and orbital movements of the different parts of the earth's surface.

No. 11. That the rarefied air immediately incumbent over the land and the ocean acts as an *attracting* medium, and is an auxiliary cause; and that electricity is an agent also.

No. 12. That the *amount of disarrangement* in the lower strata of atmosphere, governs the acceleration or retardation of the hurricane from place to place.

No. 13. That there appears to be no well-authenticated account of any hurricane having pursued a retrograde movement, that is to say, after having advanced far westward, returning again to the westward in the same parallels.

No. 14. That the northern part of South America, from the Isle of Margarita to Santa Martha, has rarely, if ever, been visited by these tempests.

No. 15. That in the Atlantic Ocean, between the meridian of 50° W. and the Cape Verd islands, hurricanes are unknown.

No. 16. That the heated waters of the Florida stream act by a sort of fluxial attraction, in directing the course of some of these storms to the northward and eastward; that by this route they sometimes reach the meridians of Newfoundland and the Azores, and even occasionally the shores of Europe.

No. 17. That the reason why hurricanes are not felt below the ninth degree north, seems to be, that the temperature of the descending streams of air, in their progress (obliquely) towards the equator, has become equalized to the general warmth of the more southern parallels, and that they therefore cease to act with violence on entering them.

No. 18. Does the altered direction of the progression of the storm alter the mode of gyration of the circumvolving aerial fluid?

A few remarks may be desirable on some of the above points, which, as being novel, may seem to require explanation.

As the wind, in a circular hurricane gyrating round a centre from right to left, pursues one unvaried path, it should follow that a ship scudding with the circumvolving stream of air cannot be taken aback, *except* when drawing near to the centre; because she would not intersect the wind in any part of the semi-diameter, *until*, by the advance of the storm, she had been thrown into, or near to, the middle of the commotion.

Paradoxical as it may appear to those who have not studied the subject, and having all their preconceived ideas respecting the course and shifting of wind uppermost in their mind, certain it is, that the wind may gyrate from *right to left*, whilst to those on board of a ship exposed to it, the changes will *seem* to be from *left to right*.

In the Centaur's hurricane, (1805,) for instance, the wind is noted as going from E.N.E., by the east, to the south-west, at the same time the current of air was actually performing its gyration directly contrary, or from right to left! This phenomenon is occasioned by the advance of the circle (round which the wind sweeps) to the W.N.W., and the altered position of the vessel with respect to the anterior verge, (where she entered the storm,) and her drift-course with reference to the posterior verge which is approaching her. The operation perhaps can only be fully understood by the subject being well considered; and aid may be derived by the use of a diagram; but it will be readily perceived that the movements of a vessel cannot correctly be traced upon paper on a small scale, so as to convey a complete idea, as so much depends upon the progression of the storm.

In the instance alluded to, the evidence of our senses goes for nought! we are completely deceived by the invisible agent, which is heard and felt, but not seen. It is a proof, too, that in master minds the theoretical deduction may as completely accord with the mode of operation performed by nature in any given phenomenon, as if the whole fact had been gained by direct observation. But there is an extraordinary, if not a singular, impediment in this instance—for observation here would tend to mislead; the decision appears purely a matter of theory.*

The Centaur entered the hurricane (meeting it) under the N. N. W. verge, in the fourth quadrant, and must have passed (fortunately for her) to the northward of the centre, (having the wind at the time from the east.) Entering now the first quadrant, she experienced the wind from E. by S. to south; she then dropped into the second quadrant, the wind drawing round to the westward, until she was thrown out under the south-east verge, with the wind at S. S. W. or S. W. by S.; thus obliquely crossing the entire diameter of the circle; which, in her case, could not have been less than 351 miles, (the wind of the storm having been of twenty-two hours' duration,) and the circumference of this great tempest more than one thousand one hundred miles!

A ship falling into the storm under the north verge will have the wind at east. Suppose the captain determined to go before it, according to the old notion of *running clear of it*, and which in this case would not be so doubtful as in a steady gale to one point it might be. He starts

* We conclude that to Mr. Redford, of New York, belongs this merit.

away *west*, at the rate probably of twelve knots; so that, allowing the *hurricane* (not the *wind*) to progress fifteen miles an hour, its excess over the ship's run would only be three miles! As the storm moves on to the W. N. W. the wind will gradually, but in this case slowly, draw to the southward of east, and of course the ship's head will come up to the northward of west, and she will ultimately, *volens nolens*, be ejected under the north-east verge, with the wind at south-east! the exit having been retarded some hours, perhaps by trying to outstrip the wind!

Let us see how the operation would have turned out, had the ship, instead of scudding, been brought to the wind on the starboard tack; her head would be N. by W., and her drift three miles and a half to the westward—the excess of the hurricane's progression over the drift eleven miles and a half an hour—the wind gradually drawing aft, (or to the southward;) crossing the first quadrant, she would drop out of the commotion under the north-east verge, with the wind about south-east. It may be worth while to add one or two more examples, this being a new point in navigation.

A ship entering under the north-west verge, and scudding with the wind she would then have, (north-east,) would be very liable to be thrown into the *very heart* of the storm, to be taken aback, and, with such a tremendously high and confused sea, to founder.

With respect to the *backing* of the wind with the *Theseus*,* (after it had veered to the south-westward, returning again to the south-east,) may it not be accounted for from the supposition that the lateral movement of the hurricane (after the ship had passed into the fourth and first quadrants, with the wind from north-east to south; and into the second quadrant, where it would gradually haul round to the westward) oscillated to the *southward*, by which means she would be thrown again into the first quadrant, when she would get the wind at south-east once more. The *renewed* violence of the storm shews that the ship must have approached towards the centre *more than once*, as the height (or crisis) of the hurricane's violence is always, at any given point, *nearest the middle* of the circle. There is a *maximum* of violence of the wind which has been experienced by all ships, (and this, it appears, was *twice* attained by the *Theseus*;) that varies in point of time from the commencement of the storm, according to the vessel's position at the period of her entering it, which position may accelerate or retard her nearest approach to the centre, where, we conceive, the greatest turbulence will be experienced both with respect to the wind and to the sea.

In an incipient hurricane, or semi-circular storm, it would be easy to account for the *backing* of the wind, by supposing an oscillatory motion, (not unlikely to happen before a circle be completed;) but when the wind pursues a course round a centre, this could not happen with it, although the *form* of the storm may do so one way as well as another, and by adopting which we get rid of the anomaly. The revolving storm from right to left, can only touch, in the first place, the eastern extreme of an island on one point of the convexity of the advanced semi-circle; if it contacts at the northern verge, the wind will be from the *east*; if at the western, it will be from the *north*; and if at the southern, from the *west*.

* Nautical Mag. vol. iv. page 743.

It is therefore in the power of the islanders to determine from what points the wind will come after the contact, by noting how it blows at the onset; and they may calculate upon the probable period of duration, from the state of the weather for several weeks prior to its arrival; for, as its progress over any given land will mainly depend upon the absolute amount of disarrangement in the lower strata of atmosphere there, the probability of its passing quickly, or of being retarded, may be arrived at from the previous state of the weather. Awful and alarming as are these tremendous gusts of wind, the mariner has reason to be grateful in an especial degree in these instances, as in innumerable others, for the display of a beneficent Providence in his favour—the *progression* of the storm is a circumstance that, although such does not disarm it of its violence, lessens the period of its duration in any space over which it may sweep; if it were otherwise, if stationary for an indefinite time, for *days* instead of *hours*, what vessel could withstand the united fury of both elements in their full career of wrath? From what we see and feel in a temperate climate in the very worst weather, I can safely assert, that no correct idea can be derived of the reality of a tropical hurricane during its *high career*; it will be found to surpass all previously-formed conceptions.

Your intelligent correspondent, Captain Kjær, F.R.G.S., of St. Thomas's island, in the West Indies, speaks of having experienced several hurricanes from the *south*; and in a subsequent passage* he says, that "the danger in a hurricane, and the damage done, are generally caused by the sudden shifting of the wind from one quarter to another." And he further adds, that "the most fatal hurricanes in St. Thomas have been those from the north-west quarter."

These remarks are of importance, and we may here express a hope, that, should the gentleman named see this paper, he will be induced to enter more at large into the subject, so as to assist our endeavours to arrive at the truth.

It must be remembered that the sudden shifting of the wind takes place only when the centre of the circle of operations has arrived at any given place. By the "*most fatal hurricanes*" we conclude the writer to mean the most *violent*, from which the greatest damage follows; if so, it is difficult to determine from the mere expression *why* the wind from the north-west quarter, in a circumvolving current of air, should be heavier than from any other point in the circle, unless we suppose that in the south-west (where the wind would blow from the north-west) lies the *vent*. This would involve an important question, the decision of which might throw some light upon the subject, namely, that the *superior* current of air from the equator flowing to the north-east, from some impediment to its free course, is prematurely and partially disrupted, (see points Nos. 10 and 2,) possibly by coming in contact with the *inferior* current from the north-eastward, and that from this contact a circular movement is created, and a hurricane the consequence. It may be the case, indeed, that the north-west part of the island is not so sheltered by rising grounds as other parts, by which the whole force of the wind from that quarter will take effect. If this should be the writer's meaning, such local feature will of course account for the circumstance.

* Nautical Mag. July, 1836, page 400.

If we could know, that in the hurricanes alluded to by your correspondent of St. Thomas, the wind *first* commenced in the usual quarter of the trade-wind, and *seemed* to veer by the east to south-east, we should be satisfied that it gyrated from right to left;* but, in the course assigned to the progression of the storm, (W. N. W.,) if it first commenced at E. N. E., it could not at any time be felt from the north-west at St. Thomas. If the hurricane commenced at *north*, the wind would gradually haul round to north-west, and the storm pass away with it, blowing from the S. S. W., and the *height* of the hurricane would be when the wind came from the *west*, as then the centre would be passing over or very near to the northern part of the island.

Nos. 8 and 3. Wind rushing towards a centre. This has long been considered to be the case, particularly in those storms experienced near the equator. If such really exists, it must be a tempest of the most dangerous kind, and it would be little short of a miracle for a ship to escape from the centre of such a terrible elemental war. In the event of a vessel entering the anterior verge, (supposing it progressive,) she would be driven very near, if not into, the convergent point of emotion, where she would get the wind from all quarters, and if she happened to be a loaded ship, her fate would not be long protracted; and indeed to *any vessel* there would be but a poor prospect of escape. If such hurricanes exist, it is highly probable that many, if not all of the East India ships, which were missing some years ago, foundered in one of this description. A minor phenomenon of this sort I have experienced.

Nos. 9, 10, 1st—11, 12. From the obliquity of the earth, the boundary to the northward of the greatest uniform heat should be near the tropic of Cancer, where we find the thermometer (Fahr.) at 69°. But the disruptions of the northern currents of air which produce the north-east trade-wind take place, with a little seasonal variation, at about 26½° N., or 180 miles further north than the tropic line. Here, in the same season, the temperature was found to be 65°, or four degrees lower than at the tropic—a difference, it will be admitted, that is very trifling, and which probably, for we have no data before us to carry on the comparison, bears the same proportion at all seasons. In the Caribbean Sea, the temperature on the parallel of 17° will in the same season be at a mean of 77°—a difference of 12° in a climatal span of 570 miles. If we trace the differences of temperature from the 48th to the 26th degree, we shall find these in the same season varying very gradually on the eastern side of the Atlantic, from 54° to 65°—a variation in total amount of eleven degrees. Here then we find in the early spring a difference of temperature of only eleven degrees, in a climatal range of 1,320 miles.

Rarefaction must be pretty actively carried on over the entire space of ocean comprehended between the above-named parallels; and hence we may conclude, that a vast portion of the air which supplies the north-east trade-wind with “fresh wings” is received from this portion of the Atlantic, and gives the character of “gentleness” to it, and which quality, we conceive, is only interrupted when the streams nearer the pole are pressed onward from *sudden* cold, and increased density, carrying with them into the attracting medium a low temperature.

* I allude alone to the hurricanes of St. Thomas.

The *variable* latitudes, or those parallels in the North Atlantic which lie between the north-east trade-wind and the westerly winds, may be taken at six degrees, or 360 miles; that is to say, from $26\frac{1}{2}^{\circ}$ to $32\frac{1}{2}^{\circ}$. The border lines of division will of course sometimes vary under particular meridians. Occasionally the calms and variable airs begin at 35° , but the westerly winds seldom fall below the thirty-second degree north, on the eastern side of the Atlantic, and generally about the thirty-fifth degree on the western side. A degree or two to the southward of the thirty-second degree on the east side, a south-east wind usually prevails until the *trade* is arrived at. Within these six degrees calms are frequent, after lasting three, four, and five days, and sometimes as *many weeks*;* and in general the winds are light and variable, so that certain spaces† are acted upon with greater effect by the rays of the sun, than other parts where a breeze may be blowing.

If the cold in the more northern regions sets in *early* (as it did in 1835) and *suddenly*, before the lower latitudes of the temperate zone have time to “cool down” gradually, the increased difference of temperature which would follow the disruptions of the northern streams into the warm atmosphere below, we may reasonably conclude, create a great commotion; and as the velocity of those streams would, as a consequence, be increased by augmented pressure, and their dip or curve of depression hastened, *partial* disruptions might be expected to occur upon the heated parts in a state of calm, or which had been so for some time in the *variable* latitudes.

The character and course of the storm thus generated may depend upon, and be regulated in a great measure, by the proximity or remoteness of these attenuated spots relatively to each other. When many such spaces happen to be co-existent, and to be within attractive distance, forming a sort of galvanic chain as it were, down to the islands, the stream of the mighty blast will be continuous to the land, or lands, which happen to lie in its course, and are sufficiently attractive—acting in a similar manner to inflammable matter traced, with short intervals, upon paper, and ignited. Should these attenuated spaces happen to be remote from each other, so as to render their attractive force inefficient to cause the descending stream of cold air to be continuous, the disruption may be suspended in one place, and be renewed in another; that is to say, when the first space has had its due balance *restored*, the “funnel” of discharge (to use a typical expression) will be drawn up, and let down again upon the next, and so on in succession, until the *equilibrium* be restored. Simultaneous disruptions may take place.

[To be concluded in our next.]

* I recollect having boarded an American ship from China, the captain of which stated that he had been becalmed in the *variables* for five weeks.

† This is a curious subject, which seems but imperfectly understood; philosophy has yet to unravel the skein in the labyrinth of doubt and perplexity in which this case is involved.

THE JERSEY FISHERY QUESTION.

THE report on the Jersey Fisheries, in the last number of the *Nautical Magazine*, shewed, that for some years past serious differences have arisen between the British fishermen and the French armed force, stationed on the coast opposite Jersey, as to the right of fishing at a certain distance from the shore.

At their commencement, representations were made to Lord Sidmouth, then Secretary of State for the Home Department, on which an adequate naval force was sent on the station, with orders that the British fishermen should be protected in dredging at the distance of a league from the French coast. The order was afterwards renewed in 1822, and was to have continued in force until the final settlement of the question of limits between the two governments.

The British fishermen were thus satisfied, and the French could have no cause of complaint, because the British dredgers found ample employment in the space thus allotted as a domain common to both nations, and were not tempted to infringe the prescribed limits. A short time after, however, through the representations of the Prince Polignac, instructions were given to the officer, commanding H.M. ship on the Jersey station, forbidding him, during the negotiations which were then in progress with the French government on the subject of the Oyster Fishery, to afford protection to the British fishermen, dredging within two leagues of the French coast between the "Havre de Carteret" and the village of "Lingreville."

Captain Freemantle, of H.M. brig *Jasper*, and the French commander, in pursuing this order, rendered it still more unfavourable to our fishery than the former. They marked a direct line at two leagues from low-water of the most salient points of each extremity of the bay between Cape Carteret and the island of Chaussey; whereby the limits of the intermediate space became in some places nine miles, and in none less than eight miles from the shore. The line also passed near the middle of the straight, which separates Jersey from France; thus driving our fishermen from the fishery to the southward of the isles of Chaussey, and from that between the coast of Britany and the rocks called the Minquiers, full twelve miles from that coast.

Thus were our fishermen at once excluded from all the best oyster beds, and left to dredge in deep water.

The result is, that hostility to a considerable extent has taken place between the British fishermen and the French armed force, by which numerous captures of our fishing vessels have been made, arising from the limits, so unfavourable to our fishermen, having been infringed.

In the course of the last season the detentions were more numerous and unjust than ever, and the master of a Portsmouth fishing vessel lost his life in one of these collisions.

In order to afford accomodation to the vessels of the fishery, the Jersey States have laid out the sum of £16,000 in forming a pier adjoining the castle of Mont Orgueil, and £200 is devoted every year to the formation of new beds in the immediate vicinity of the island, and other measures have been adopted, with the view to render hereafter the fishery independent of those near the French coast. It is remarked, that two-thirds of those who resort to the Jersey fishery, belong to ports

on the coasts of Kent, Sussex, and Hampshire, from whose labours the island derives no increase of revenue, the system adopted there being different from that of the chartered corporations on the coasts of England, where the oyster fishery is carried on and where even the oysters dredged from Jersey are laid down; nor do the Jersey States receive any emolument from licenses to the fishermen; but the grounds of the fishery are free to all British subjects. This fishery is not, therefore, of an exclusive and monopolizing character. The Jersey States derive no other advantage, but the employment and welfare of the islanders engaged in them, and considering the great benefit derived from the employment of so many able seamen, the excellent nursery it affords for the increase of that useful class of men, the value of whose services are never doubted; and this, without the assistance of His Majesty's Government, but at the sole expense of the Jersey States; the efforts of the States, to uphold their fishery, assume the character of benefiting the nation at large, and must make every one desirous that so important and valuable a resource for native industry may be preserved. The previous arrangements of the line of demarcation having been provisional towards a final conclusion, it may be justly anticipated that their exertions will be successful.

But we must not expect the French to be desirous of any change in the present arrangement. They got more by the provisional arrangement of 1824, than they can expect to obtain by any other. They obtained by that much greater advantages than they ever thought of claiming. The distance of one league from the shore out to sea, is considered everywhere as the territory of every country possessing a sea coast, and beyond that line the sea is considered open to all nations. Thus, the French and Dutch fishermen apply this law to their fishery on the coast of England, and even carry the produce of their fishery to British markets; British fishermen also fish at the distance of a league from parts of the French coast, except that near Jersey; and why should a different principle be observed respecting the British oyster fishery at this particular place more than any other, unless it is to transfer to the French a profitable trade and employment, with all its advantages, to a maritime country like Great Britain.

But the usual line of one league from the coast would still preserve to the French the principal self-formed oyster-beds of that fishery, as well as those which they have cultivated or improved, lying near Granville, and in the bay of Cancele.

The establishment of the proposed limits would secure to the French the oyster-beds used by them, even at the distance of eight miles from the shore, in the bay of Cancele, while the British fishermen would have a joint right of fishery on two additional beds, within the limits of one league from the coast, to the northward of the rock La Marie. It is evident, that on an irregularly-indented coast like that opposite to Jersey, the difficulty of drawing a line of demarcation, at any distance, from all parts, is considerably increased; and whether that line should be considered as from high or low water, adds particularly to the complex nature of the question in this instance, as off Granville the low water mark is one-tenth of a mile distant, while off Regneville it is distant nearly 3 miles. That the territorial line of one league from the shore must, properly considered, apply to high-water mark, there can be no

doubt ; but it becomes a question of considerable importance, where the shore is flat, whether the high or low water-mark is to be taken, from whence this distance is to be considered. The boundaries, however, proposed by the Jersey States will in a great measure remove this difficulty ; they will also prevent the recurrence of those acts of hostility which have taken place, and will establish limits which, from their nature, may be strictly and easily watched by one vessel, which, from the great extent of the present line of demarcation, is impossible.

NAUTICAL PATENTS AND PATENTEES—PERING'S ANCHOR.

To the Editor of the Nautical Magazine.

SIR—It was only a few days since that my attention was drawn to a letter in your magazine for August (No. 54) under the above head, in which, among other things, are discussed the different modes of constructing anchors. It is intimated that no one interested “can form the most distant idea” of the writer, who from thence draws the, not quite logical conclusion, that “that more need not be said to shew” that he has “no interested motive” in writing. With his motives the public has nothing to do ; with his matter alone has it any concern. The subject is unquestionably interesting, and cannot be too well understood. The censure so unsparingly dealt out, if merited, affords room for deep reflection.

That there was a period at which the anchors used by the navy were lamentably defective, he must be hardy indeed who would venture to deny. According to your correspondent, such is the case at present. Speaking of the anchor, “it is,” he observes, “notoriously a piece of deception, and there perhaps is nothing whatever about a ship so uniformly defective.” For what he terms its great defect—the mode of joining the arms to the shank—according to the following passage, a case was at hand : “The same parties, I believe, who proposed the perfect cable, bethought themselves of a remedy for this, of so simple a nature that no sophistry could possibly find fault with it. The method was simply by riveting the shank to the arms, which were made in one piece, and the shank introduced through and clinched.”

Before proceeding further I must remark, that to every one in the least acquainted with mechanics, it will be obvious, that the plan so highly eulogized is neither more nor less than that of the common pick-axe ; and, accordingly, when it was attempted to make it the subject of a patent, the patent at once fell to the ground. It is at least forty-five years since that a Spanish anchor upon this plan was landed in Plymouth dockyard. Thus, it will be seen that the plan was no secret when the “perfect cable” parties “bethought themselves” of it, and, as respects its merit, (to say nothing of the waste of iron in forming the clench and eye,) no one familiar with the subject need be told how much inferior in strength an anchor so formed would be to one made upon the plan now used in the king's yards. Such, however, is the plan, an insensibility to the merits of which has exposed the naval department to the severe castigation which follows : “What reception did this meet with from the ‘affectionate friends’ of improvement at the navy office ? It was rejected

altogether. The fact is, they had adopted another plan of anchor-making, a plan of one of their own officers. This adopted and patronized plan was one of Mr. Pering's—(then of Plymouth yard)—it is one attended with great expense, and, that it does not effect the end in view, the continual breaking of anchors in the service sufficiently proves."

The sarcastic allusion to the Navy Board might, at all events on the present occasion, have been spared. Of the state of the anchor, when the attention of Mr. Pering, in common with that of all the officers under the naval department, was called to the subject, there are too many melancholy facts to attest. That his plan was not adopted, until repeated trials had established its great superiority over every other, there are living witnesses enough to prove, and among them some of the most distinguished characters in the British navy. Your correspondent's statement as to expense in construction is wholly unfounded; and he may, I believe, be safely challenged to produce a single instance where a properly-constructed anchor on Mr. Pering's plan has broken. Of the excellence of that plan, the best proof will be found in the fact, (however reluctant your correspondent may be to confess it,) that its most essential parts have been copied in every subsequent attempt by others to improve upon it. I may perhaps be allowed to remark, that one to whom your correspondent acknowledges so much to be due in other respects, might have expected more of candour and fairness than will be found in the article referred to.

As respects your correspondent's "small palm," which he seems to regard as a great improvement, how comes it that he has not stated the fact, that this palm has, after repeated trials against, I believe, that of Mr. Pering, been found not to answer.

24th Oct. 1836.

AN OBSERVER.

[In justice to our correspondent "An Observer," it is our duty to add, that his letter has been in our possession since October last; and as the delay in its appearance might be attributed by some to any but the real cause, we think it necessary to state, that this delay has arisen on our part entirely from want of room, and the arrangements attending the completion of our last volume.—ED. N. M.]

LIGHT ON THE SOW AND PIGS SHOAL, *Port Jackson.*

In the supplement to our last number, we gave notice of a light vessel having been placed on the Sow and Pigs in twenty-two feet, (at low springs,) a quarter of a cable's length from the north-west end of the reef. The following directions for ships were also given:—

Steer between the heads N. W. by W. (magnetic) until the light vessel bears S. S. W., then steer for it, and leave it on the larboard hand. With a foul wind enter as before, and on bringing the light vessel to bear S. W. by S. (mag.) haul up for it. To avoid the rocks off the Inner South Head, keep the light to the south of S. W. by S. According to our promise, we now add the following further particulars respecting the light:—

The vessel is moored with the following magnetic bearings (variation 9° E.):—

The Lighthouse on the South Head (in a line with the beacon on the dry part of the reef)	S. 53° E.
Bluff of the North Head	N. 45½° E.
Extremes of Inner South Head	N. 55° E.
..... George Head	S. 53½° W.
..... Middle Head	N. 26½° W.

The vessel being in twenty-two feet water, may be passed close to. Ships entering in the night in bad weather, should anchor as near as possible to the northward or westward of the light. A pilot and boat's crew are stationed on board the light vessel, to be ready when required.

REPORTED REEF ON THE BANK OF NEWFOUNDLAND.

THE following is an extract from a letter which we have received from Lieut. Barton, R.N. In recording it for the information of seamen, we may observe, that, notwithstanding the master of the Spanish ship may have been deceived, we find twenty-five fathoms a short distance to the northward of it in Mr. Purdy's valuable chart of the North Atlantic Ocean.—ED. N. M. :—

“On the passage from Jamaica to London, on the 4th September last, in lat. 40° 38' and long. 39° 15', in the ship *New Phoenix*, spoke the Spanish ship *Amelia Perpazno* from Boston, America, bound to Lisbon, the master of which reported having fallen in with a ledge of rocks on the previous 29th of August, in lat. 43° 3' N. and long. (by DR.) 49° 56' W., off the south-east edge of the bank of Newfoundland, on which his ship was nearly wrecked.”

The *Amelia's* longitude being fifty-five miles to the westward of that of the *New Phoenix*, by lunars and good chronometers, the above reef may be assumed to be in about 49° 0' W.

I am, &c.

J. C. BARTON.

REPORTED ROCK IN THE INDIAN OCEAN.

THE following extract from the log-book of the ship *Comala* gives an account of a rock to the west of Amsterdam Island, and of which we shall be thankful for any further particulars :—

“At 7 P.M., 26 Jan., 1836, passed a small coral rock, even with the water's edge, with a number of aquatic birds round it; by the latitude carried from noon, we make it in 39° 42' S. long. 65° 50' E. It was perfectly visible, being only a ship's length to windward, in appearance about half the size of a jolly-boat. The reason assigned for not lowering a boat to sound on it, was, that they had not any that they would trust to float.”

THE BEAGLE'S VOYAGE.

[Abridged from a Paper in the Geographical Society's Transactions,
by Capt. R. Fitzroy, R.N.]

THE best Spanish or Portuguese charts of the South American coasts, had long been inadequate to the wants of a rapidly growing intercourse

when France and England undertook to explore and survey those shores for the benefit of the world. The French chose the coasts of Brazil; the English those of Patagonia, Tierra del Fuego, Chiloe, and Peru. And in May, 1826, two vessels, the *Adventure*, 330 tons, and the *Beagle*, 235 tons, the former commanded by Captain Phillip P. King, and the latter by Captain Pringle Stokes, sailed from England with this object.

Part of Eastern Patagonia, the greater portion of the Strait of Magellan, and a considerable extent of the western shores of Patagonia, had been examined, when the death of Captain Stokes caused a suspension of operations. Lieutenant Skyring, whose life has since been sacrificed on the coast of Africa, was temporarily appointed to the *Beagle* by Captain King, but soon afterwards superseded by the commander-in-chief on the station; who placed Commander Fitzroy in the vacancy. During 1829 and 1830 the two vessels continued the survey, assisted by a tender, commanded by Lieutenant Thomas Graves. In the latter part of 1830, they returned to England, with charts of the south-western and southern shores of Tierra del Fuego, besides a multitude of interior sounds and passages. The *Beagle* was again prepared for a surveying voyage, with every possible care; and at the end of the year (1831) she sailed from Plymouth. One particular object being the measurement of meridian distances, by a large number of chronometers, the *Beagle* was ordered to make her voyages by the shortest steps, touching land frequently, for the purpose of obtaining observations and ascertaining the rates of the chronometers. Until the vessel arrived in the River Plata, her chief occupations were, measuring meridian distances, and obtaining soundings among the Abrolhos shoals, on the coast of Brazil.

While the officers of the *Beagle* were employed in their usual duties afloat, Mr. Charles Darwin, a zealous volunteer in the cause of science, and principally in Geology, examined the shores. The survey commenced on the right bank of the wide river Plata, and continued to Cape Horn, the whole being closely surveyed and laid down on a large scale. Each harbour and anchorage, thirty miles of the River Negro, and two hundred of the Santa Cruz, were examined, and a survey was also made of the Falkland Islands. These earlier productions of the *Beagle's* voyage are now preparing for the public.

The survey of this extensive coast was in a short time accomplished by the great exertions of Lieutenant John C. Wickham, Mr. J. L. Stokes, and Mr. A. B. Osborne; who were exposed to much risk, by night as well as *every* day, in two small decked boats, during the first year, and afterwards in a tender. The *Beagle* took portions of coast to the southward, while her detached party were at work between Port Desire and Blanco Bay, and afterwards at the Falkland Islands. Westward of Cape Horn, as far as the parallel of forty-seven south, little has been added to the results of the *Beagle's* first voyage, because nearly enough was then done for the wants of vessels employed in, or passing through, those dreary regions; and because there were so many other more important demands on the surveyors. Between latitude 47° S., and the River Guayaquil, the whole coasts of Chiloe and Peru have also been surveyed; no port or roadstead having been omitted.

Of the Chonos Archipelago, no chart existed. Of Chiloe, the

Spanish charts were twenty-five miles in error, in *latitude*. Of the other coasts, a mixture of bad and good description alternately plagued and assisted the navigator. Wherever the eyes of Malespina, Espinosa, or Bauza, reached, in the expedition of the *Atrevida* and *Descubierta*, there the old charts are correct; but the intermediate details are not to be compared with those resulting from their labours, nor with those in the vicinity of Lima, executed by the students of the Nautical School, under the direction of Don Eduardo Carrasco and his predecessors. Half the coast of Chiloe was surveyed *in detail*, by Lieutenant B. I. Sullivan, in a small schooner, *lent* for the purpose, by Don Antonio Jose Vascunan, of Coquimbo. And all the coast of Peru was afterwards closely examined and laid down, by Mr. A. B. Osborne, in the same vessel, then purchased, at a great expense, from her public-spirited owner, and fitted out by the *Beagle*. Mr. Osborne's survey was carried on while the *Beagle* was examining the Galapagos islands, traversing the Pacific Ocean, and returning to England by the way of the Cape of Good Hope.

Four years having elapsed from the *Beagle's* departure from England, and having yet three-quarters of the globe to traverse, the little vessel left South America and hastened to that classical spot, Otaheite. Her route was through the dangerous Archipelago, in which two, if not three, new islands were discovered. Krusenstern's charts and directions were there the only ones of any use. At Otaheite, or (as it is now called) Tahiti, a manuscript chart of that really dangerous labyrinth of islands, and some useful information, was obtained from an intelligent Englishman, who had passed several years in trading with the natives of those numerous low coral islands. Meridian distances being now the principal object, all haste was made from place to place, and without more delay at any one spot than was absolutely necessary for making observations. Nearly a week, on an average, was passed at each of the following places:—Tahiti, New Zealand (Bay of Islands), Port Jackson (Sydney), Van Diemen's Land (Hobart Town), King George's Sound, the Keeling Islands, Mauritius, Cape of Good Hope, St. Helena, Ascension, Bahia (in Brazil), Pernambuco, Cape Verd Islands, and Azores. At Falmouth the *Beagle* arrived in the beginning of October last; thence she went to Plymouth, Portsmouth, and Greenwich; and was finally paid off at Woolwich.

From the foregoing, a general idea of the voyage may be formed, and the following are a few sketches of places little known.

The extensive plains southward and westward of Buenos Ayres have been often and well described. As pasture land they are excellent, except in the summer, when all is parched. There is a fine tract of country between Buenos Ayres and Cape Corrientes, where the soil is rich, and water plentiful. In that tract there are ranges of low hills, running nearly east and west. Similar ridges extend under the sea, as far as soundings have been taken (from ten to twenty miles.)

From Blanco Bay to the river Negro, the coast is dangerous. The land is everywhere low, having many extensive shoals and strong tides on it. Yet, with a pilot, or correct chart, excellent harbours may there be reached—in which navies might lie in safety.

In Blanco Bay (the best of these harbours) there are from eight to twelve feet rise of tide. If *large* ships ever frequent this part of the

coast, this must be their asylum. But there are material objections to the surrounding country. Water is extremely scarce, and wood is not to be procured, except at a great distance.

Unfortunately the fine river Colorado, which rises near Mendoza, and brings down a great quantity of water throughout the year, does not run into any of the numerous ports near its opening. A canal might join it to Union Bay, without much difficulty; but it is a question whether the river remains in one place many years, and whether high tides, floods, and gales of wind, do not alter it annually.

Low, level land extends southward to the river Negro, and westward *gradually* rising towards the Cordillera of the Andes. Villarino, in his Diary, describes the Negro; it cannot be safely used by vessels drawing more than ten feet water, because there is a dangerous shifting bar at the entrance. South of this river the country and coast changes its character; ranges of stony hills, extensive barren plains, and steep cliffs, extend hence to the Strait of Magellan. Only here and there, close to the little river Chupat, or in an occasional oasis, does a tree or green herbage appear. Mixtures of brown, yellow, and light red, tire the eye.

One naturally asks why Eastern Patagonia should be condemned to perpetual sterility, while the western side of the same country, in the same parallel of latitude, is injured by too much rain? The prevailing westerly winds, and the Andes, are the causes. The winds bring much moisture from the Pacific, but they leave it all (condensed) on the west side of the mountains. After passing the Cordillera, those same winds are very dry. Easterly winds are very rare upon the east coast: they are the only ones which carry rain to the almost deserts of Patagonia. *Westward* of the Andes, an *east* wind is *dry* and free from clouds. All this country is exposed to severe cold in winter, and to excessive heat in summer; great and sudden changes of temperature take place when, after very hot weather, cold winds rush northwards with the fury of a hurricane. Even the wandering Indians avoid this region, and only cross it to get salt, or visit their burying places.

In a twenty days' excursion up the river Santa Cruz, a similar country, without variety, was passed, until extensive beds of lava were found overlying the whole country. On reaching nearly to the eastern flank of the Andes, want of provisions prevented the party from going further. The river was then, at 200 miles from its mouth, almost as large, and quite as rapid, as at twenty miles from the sea. Perhaps it runs for a great distance along the base of the Andes, and so collects a great body of water; or it may run from a lake into which streams pour. Its water is not muddy. The current runs six knots; none of the boats could pull against it anywhere, and were tracked up it by a rope. Its *average* width is two hundred yards, and depth ten feet; perhaps more.

The Gallegos is another rapid torrent; but its size and length does not nearly equal that of the Santa Cruz.

On the coasts adjacent to these rivers the tide rises very much, not less than forty feet, at spring tides. Respecting the Patagonians, Capt. Fitzroy makes the following remarks:—

“The aboriginal natives of Patagonia are a tall and extremely stout race of men. Their bodies are bulky; their heads and features large;

but their hands and feet are small. Their limbs are neither so muscular nor so large-boned as their height and apparent bulk would induce one to suppose: they are rounder and smoother than those of white men. Their colour is a rich reddish brown, rather darker than that of copper, yet not so dark as good mahogany.

"Nothing is worn upon the head by Patagonians, except their rough, lank, and coarse black hair, which is tied above the temples by a fillet of plaited or twisted sinews. A large mantle, made of skins, sewed together, loosely gathered about them, hanging from the shoulders to their ancles, adds so much to the bulkiness of their appearance, that one ought not to wonder at their having been called gigantic.

"I am not aware that any Patagonian has appeared during late years, whose height exceeded six feet and some inches; but I see no reason to disbelieve the Jesuit Falkner's account of the Cacique Cangapol, whose height, he says, was seven feet and some inches. When Falkner stood on tiptoe he could not reach the top of Cangapol's head. It is rather curious that Byron could only just touch the top of the tallest man's head whom he saw. Ever restless and wandering as were the Tehuel-het, of which tribe he was cacique, might not Byron have measured Cangapol?*" Who disbelieves that the Roman Emperor Maximinus, by birth a Thracian, was more than eight feet high?—yet who, in consequence, expects all Thracians to be giants?

"Among 200 or 300 natives of Patagonia, scarcely half-a-dozen men are seen whose height is under five feet nine or ten inches; the women are proportionably tall.

"I have nowhere seen an assemblage of men and women whose *average* height and *apparent* bulk equalled that of the Patagonians. Tall and athletic as are many of the South Sea islanders, there are also many among their number who are slight, and of lower stature.

"The Patagonians seem to be high-shouldered, owing, perhaps, to their habit of folding their arms (across the chest) in their mantles, and thus increasing their apparent height and bulk, because the mantles hang loosely, and almost touch the ground. Until actually measured, it is difficult to believe that they are not much taller than is the case.

"But little hair grows on their faces or bodies: from the former it is studiously removed by two shells, or some kind of pincers.

"Although they do not try to improve their coarse features by piercing either nose or lips, they disfigure themselves not a little by red, black, or white paint, with which they make grotesque ornaments; such as circles around their eyes, or great marks across their faces. Upon particular occasions all the upper part of their body is queerly decorated by daubs of paint.

"On their feet and legs are boots made out of the skins of horses' hind-legs. Wooden (if they cannot get iron) spurs, sets of balls,† a long, tapering lance, and a knife (if one can be procured), complete their equipment.

"The women are dressed and booted like the men, with the addition

* Dates agree sufficiently.

† *Bolas*, Spanish. Two or three balls connected by a thong of hide, which they throw at animals or men, to entangle and disable them.

of a half-petticoat. They clean their hair, and plait it into two tails. Ornaments of brass beads, bits of coloured glass, or such trifles, are prized by them.

“Mounted upon horses of a middle size, under fifteen hands high, and rather well bred, the Patagonians seem to be carried no better than dragoons who ride eighteen stone upon horses able to carry ten; yet they go at full speed in chase of ostriches or guanacoës. When hunting, or making long journeys, they often change horses.

“The huts of these wanderers are somewhat like gipsy tents. Poles are stuck in the ground, to which others are fixed. Over them are thrown the skins of animals. An irregular, tilt-like hut is thus formed.

“The north-eastern part of Tierra del Fuego is like Patagonia. The natives, also, are like those above-mentioned, but they have no horses. Balls, bows and arrows, and clubs are their arms and hunting weapons. Seal, guanacoës, and birds are their principal subsistence.”*

The eastern portion of Tierra del Fuego is a better country than any south of forty-five. The wooded mountains of the west there sink into hills, and those again into level land, partially wooded. The climate is a mean between that of Eastern Patagonia and Western Tierra del Fuego.

Whenever a settlement is made in these regions, St. Sebastian Bay will be found to possess several advantages.

The southern and western part of Tierra del Fuego is formed by the sea intersecting high mountainous islands, whose summits are covered with snow; while their steep and rocky shores are more than partially covered with evergreen woods.

Throughout the year, cloudy weather, rain, and much wind, prevail. Fine days are rare. Frost and snow are constant on the mountains; but near the level of that great climate-agent, the ocean, whose temperature is there never below forty-five degrees of Fahrenheit, neither one nor the other are near so troublesome as one might expect in so high a southern latitude, among snow-covered mountains.

The wretched natives of southern and western Tierra del Fuego are low in stature, ill-looking, and ill-proportioned, (I speak of them generally in their savage state.)

Their colour is darker than that of copper; it is like old mahogany, or rusty iron. The trunk of their body is large in proportion to their cramped and rather crooked limbs. Rough, coarse, and extremely dirty black hair, half hides, yet heightens, a villainous expression of ugly features.

Sometimes these outcasts wear a piece of seal, otter, or guanaco skin upon their backs; and perhaps the skin of a penguin, or some such covering is used in front; but often nothing is worn, except a scrap of hide, which is tied to their waist. Even this is only for a pocket in which they may carry pebbles for their slings.

Passing so much time in low wigwams, or cramped in small canoes, injures their limbs and movements. In height, they vary from four

* The reader will find an elaborate and well written paper on the climate of Cape Horn at page 424 of our fourth volume.

feet ten to five feet six inches; yet the size of their bodies equals that of our largest men. Of course they look clumsy and ill-proportioned. Women usually wear more covering, perhaps a whole skin of a seal. The women comb their hair with the jaw of a porpoise. Both sexes oil themselves, or rub their bodies with grease. They paint, or rather daub, their faces and bodies with red, white, or black.

Perhaps Freycinet, and those with him, saw some of these people painted black, as Bory St. Vincent quotes their authority for the natives of Tierra del Fuego being *black*, like the natives of Van Diemen Land. See article "Homme" in the *Dictionnaire Classique*.

A Fuegian is seldom out of sight of his canoe, or a wigwam.

The canoe is made of several large pieces of bark sewed together. Its shape is nearly that which would be taken by the strong bark of a tree, (twelve to twenty feet in length, and eighteen inches or two feet in diameter,) separated from the solid wood in one piece, joined at the ends, but kept open by sticks in the middle. It is ballasted by clay, and always carries a small fire.

There are two kinds of wigwams; one is made with a number of small straight trees, whose upper ends are united, while the lower form a circle; and another, which is formed by branches stuck in the ground, bent together at the top, and slightly covered by skins, bark, grass, or leafy twigs. A small entrance is left open; smoke goes out as easily as rain enters.

Western Patagonia is like the worst part of Tierra del Fuego. It is the upper part of a great range of mountains, whose bases are immersed in the ocean. The mountain-tops form multitudes of islands, barren to seaward, but impenetrably wooded towards the main land, and always drenched with the waters of incessant rain, *never* dried up by evaporation. Every foot of earth, every tree, and shrub, on those islands, is *always* thoroughly wet. Of course the country is uninhabitable, except by savages. Clouds, wind, and rain, only cease their annoyance during the very few days on which the wind is easterly, or perhaps southerly. Probably there are not ten days in twelve months, on which rain (or snow) does not fall; and not thirty on which it does not blow strongly. But it is mild, and the temperature is surprisingly uniform throughout the year.

The Chonos Archipelago is very little better than the country just mentioned. It is almost uninhabitable. Indeed, on the west coast of South America, southward of Chiloe, there are very few acres of land capable of cultivation, and no place which is fit for the permanent abode of civilized man. That inhospitable region should be avoided by ships; though really full of harbours, it is so dangerous to run to leeward, and so difficult to make out the land, obscured, as it is generally, by rain or clouds, that most of them must ever be nearly useless. A heavy swell always sets towards the shore; and, although there are no banks, there are numbers of outlying, dangerous rocks.

Steam-navigation may render the numerous interior passages useful. From the north end of Chiloe to the eastern entrance of Magellan's Strait a steamer may go without being exposed to the swell of the Pacific, except at one place, Cape Tres Montes. In that interval she may get fuel (wood) on either hand, wherever she chooses. On the

main land, opposite to Chiloe, are the southernmost volcanoes of whose modern activity we have any certain account. There are four volcanoes in sight of the inhabitants of Chiloe. Each one, even when tranquil, is a magnificent object.

None of the mountains in this part of the Andes, or to the southward, which have been measured, exceed 9,000 feet in height. Chiloe, though a fertile island, is exposed to an excessive amount of wind and rain. It is the southernmost inhabited part of the west coast.

About Valdivia the climate is similar, and must always be an obstacle to cultivation. Northward of Valdivia, towards Concepcion, is one of the finest countries in the world, in a very healthy climate. There the Araucanians are still unconquered owners of their native land. All the efforts of the Spaniards, all the exertions of their descendants in Chiloe, have failed in expelling that heroic race from the birth-place of their ancestors.

That they should now make head against the Chilenos, is not surprising; but that they should formerly have withstood the power of Spain, and the enthusiasm of their invaders, excites astonishment.

[Captain Fitzroy here gives an interesting account of the effects of the great earthquake which took place while he was on the coast, the whole of which appeared in pages 137 and 357 of our last volume.]

[To be concluded in our next.]

SHIPS' CHANNELS.

In the fourth volume of this work we laid before our readers a proposal of Captain Alexander Fraser, of the ship *Planter*, for doing away the platform of ship's channels, and substituting for it strong iron bolts, passing through the frame timbers, and having a groove at their outer extremities to receive the iron strop of the dead eye which was to be kept in its place by an iron band, passing outside it, and connecting all the bolts necessary for the rigging. The advantages of the plan are obvious; for, allowing that the platform is not done away, it is evident that this platform depends for its strength on the bolts which support it while it is attended by all the evil consequences alluded to by Captain Fraser, and well known to seamen. Thus Captain Fraser's plan was simply to give each dead eye its own bolt, made sufficiently strong to bear the necessary strain, and to disencumber it of the platform, at the same time substituting for this platform two fore and aft iron rails. This plan is not unworthy of attention, and some of our ingenious artisans, if they knew the dangers to which the old platform exposes a ship in a heavy sea, would devise a light iron frame-work on this principle, taking care not to make it heavier than the wooden one now in use, with its necessary bolts. The idea is decidedly good, and we hope to see it taken up.

In the mean time a proposal has been made by Captain Couch, R.N. (and we are informed the plan has been secured to the inventor by a patent, under the name of a chock channel,) of filling the whole length

of the channels with timber bevelled off to the ship's side forward, and fayed off at the lower part.

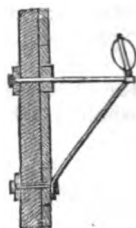
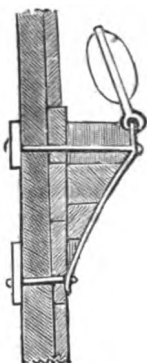
The following is a description of the mode in which this is done by Captain Couch. The annexed sketch represents a transverse vertical section of the channel, which is formed of four pieces of timber, the upper and lower pieces being oak and the two others red pine, all well seasoned.

Thus, while Captain Fraser proposes to do away with the necessity of this filling in, as will be seen by the sketch shewing a transverse section of his plan, Captain Couch adopts this mode of filling in with timber. We shall leave our readers to form their own opinions of the merits of the two plans, with the following extract of a letter from Mr. Pope, ship-builder, of Plymouth, to Capt. Couch, respecting his invention :—

“I am convinced that it not only possesses all the properties that are so clearly illustrated in your pamphlet, by our distinguished admirals and other experienced officers, naval and mechanical; but it also combines many others of much importance, that assures me of its being the most perfect piece of mechanism that can be applied to vessels, and consequently of the highest national importance, as I consider the “Channel” to require the greatest possible strength, on which the safety of both ship and crew depend in storms.

“I again beg to impress my opinion in corroboration of the much more experienced gentlemen, from whom you have received such testimony, ‘that it only requires to be known, when it will be generally adopted, and that its merits will be seen in its application,’ when those sentiments have been so candidly expressed by such talented and experienced builders as Messrs. Brindley, Feroneth, King, Ritchie, and others, in London, beside the first builders throughout England and Scotland, all expressive of their unqualified approbation and patronage of its mechanical construction. It must be the means of doing away with all narrow-minded prejudice arising from old habits, which are known to be difficult to remove, for the want of duly appreciating, what at first is not comprehended.”

With this testimony in their favour, we shall leave Captain Couch's channels to realize all that is said of them, satisfied, that if they possess all the advantages attributed to them, they will shortly overcome all prejudice.



SHIPWRECKED AND DISTRESSED SAILORS' ASYLUM.

THIS excellent institution, situated in Cannon-street Road, St. George East, is maintained at a very trifling expense, and has been productive of much benefit: under its present management, it has every prospect of becoming the foundation of the long-required important change that

appears likely to take place in the mercantile marine of this country, so far as regards bettering the condition of the seamen. It may not be uninteresting to give our readers a brief outline of the institution, and then inform them of the views of those gentlemen who have undertaken its present management, and who have so powerfully appealed to the public for support, in a cause equally worthy of the attention of the philanthropist and politician.

The asylum was established about six years since, and has been the means of affording relief to some thousands of houseless, friendless, and penniless, seamen of all nations, when reduced to a state of abject distress, either by shipwreck, misfortune, or their own improvidence. Lodging is given to them, and two meals daily, while endeavouring to procure employment. The establishment has passed through the hands of various managers, and in the month of June last was on the point of closing its doors for want of funds. It is due to the public to state, that, until within the last two years, there was no backwardness nor unwillingness on their part to contribute to support an institution doing so much good. But unhappily an individual, under whose principal management the affairs were conducted, from his improper conduct (to use the mildest term) caused the majority of its warmest patrons and supporters to withdraw. During this period the doors were kept open by the influence and benevolence of Vice-Admiral Sir Edward Codrington.

At this critical period, Captain H. M. Marshall, R. N., of whose zeal and indefatigable exertions on behalf of the seamen, the public must by this time be aware, aided by a few friends, who, duly appreciating the importance of the asylum, determined to make an effort not only to keep open the doors for the legitimate purpose, but to extend the benefits already conferred on seamen, by endeavouring to save them from falling into the hands of those who make a trade of plundering them. In accordance with this design, a letter has been addressed to the various mercantile bodies in the city, of which the following is an extract:—

“The state of abject distress to which the unfortunate mariner is reduced, who, after having encountered the fury of the elements, and escapes from shipwreck with life only, or he who, thoughtless and unsuspecting, on his arrival on shore, is robbed of his hard earnings by the harpies that abound in all maritime districts, render him an object worthy of the attention of those who have hearts to feel for the wants, distresses, and sufferings of their fellow-creatures.

“We now propose not only to provide for the shipwrecked and distressed, but to save others from falling into the hands of those who gain a livelihood by plundering them.

“With this view, we offer to such seamen as on their arrival choose to bring their chest and bedding to the asylum, lodging free of expense; and, if they wish it, an officer of the establishment will accompany them to the savings' bank, where they can deposit such a portion of their wages as they may think proper, being under no further control than required by the regulations. Their names would be registered, a certificate of good conduct granted; and, if a preference were given by ship-masters and owners to men who brought a certificate from the asylum, our endeavours would be crowned with success, and many a

brave man saved from ruin. A gradual diminution of the temptations by which they are now beset must follow, and a more steady description of men produced for the mercantile marine."

It is sincerely hoped that such an appeal will be cheerfully and cordially responded to, and that the plans now proposed to improve the moral condition of distressed seamen will meet with the support they so justly merit, not only from the merchant and ship-owner, whose interest is so materially concerned, but by the community at large.

A larger and more commodious building than the present, for the better accommodation of seamen, is required, and one apparently suitable, and well situated, has come under the notice of the committee.

The managers, in taking upon themselves this responsible duty, indulge the hope, that they shall be enabled not only to engage the building in question, but also, through an increase of their funds, to relieve the numerous applicants which are constantly pressing round the doors, and at the same time provide them with the necessaries which the urgency of their cases require.

The committee anxiously look for the support they need, to rich corporate bodies, and wealthy merchants, of this large and opulent city, and trust that ere long the poor shipwrecked, weather-beaten mariner will be enabled to point to a building, and say, "Although misfortune has assailed me, there I have found a home, and I hope ever to cherish a deep sense of gratitude to God, and to my earthly benefactors."

Repeated instances have been recorded in this work, where the great utility of this establishment is evident, and the asylum afforded by the *Hannah** in our last volume is one. The asylum is unconnected with any other institution, and is not identified with any sectarian denomination whatever, but it is based upon the broad principles of christian philanthropy, and the doors of the institution are thrown open to the distressed seamen of all nations.

[Subscriptions and Donations in aid of the above objects are earnestly and respectfully solicited, and will be thankfully received by the President, Vice-Admiral Sir E. CODRINGTON, G.C.B., M.P., 92, Eaton Square, or Hampton Lodge, Brighton; MESSRS. GROTE, PRESCOTT, & Co., 62, Threadneedle Street; Messrs. COCKS, & BID-DULPHUS, 43, Charing Cross—Bankers; Captain WASHINGTON, R.N., Royal Geographical Society, 21, Regent Street; Mr. JOSEPH MARSH, Secretary to National Provident Institution, 13, Nicholas Lane; Captain H. M. MARSHALL, R.N., Honorary Secretary; † by any Member of the Committee; and by the Collector, Mr. JAMES W. LAURIE, 64, White-Horse Street, Stepney.]

THE LATE STORM,—29th Nov. 1836.

To the Editor of the Nautical Magazine.

SIR,—From observations made at a situation on the southern bank of the Bristol Avon, I have very satisfactory reasons for concluding that the storm experienced in this country, on the 29th of last month, may be identified with the West India hurricane. For some days prior to

* See page 633. in our October number, under "Records of Wrecks."

† 5, Steenheath Terrace, Limehouse.

the 29th, a succession of strong winds, calms, and rain, were prevalent, with a low temperature, particularly during the night. This alteration coincided with the reciprocation of the tide, squalls; and rain accompanying the flood; and calms attending the ebb. Up to the 5th of Dec. the weather has continued quite warm for the season, although attended with rain and occasional fresh winds from west to N.W. During the night of the 28th, and morning of the 29th, a gale blew from the S.S.W. which veered to S.W., as the day advanced, accompanied with excessive rain, such as we had never witnessed before in this country; it came down in a similar manner to the periodic rains within the tropics, in streams rather than in drops. Between 9 A.M., and noon, the wind freshened to a violent storm, veering round to west and N.W., and gradually lessening. The height of the tempest was at the time the wind blew from the W. by N. quarter; the squalls, or gusts, being extremely heavy, so much so, that a tall willow tree, opposite my window, bent down to within four or five feet of the ground, but, from its elasticity, sprang up again as the strength of the wind declined. Lightning was reported to have been seen.

Considerable damage was done in the immediate neighbourhood, which is elevated ground abutting the vale of Ashton, and open to the full effect of the westerly gales.

The S.W. gales which happened on the 10th, 11th, and 12th of October last, were not so violent as that of the 29th November, in this locality, although many trees were blown down in Gloucestershire.

The progressive course and the changes of the wind of this storm, will be found to have been agreeable with Mr. Redfield's theory of the West India hurricane.

The progression being a little southerly of east, the southern margin of the circle must have passed over the southern parts of England; the wind *apparently* veering round from *left to right*, or from S.S.W. by the west, to N.W.; the *crisis* or nearest approach of the centre of rotation, to our position, being, when the wind blew from the W. by N. point, in its gyration from right to left. This storm, although it may be considered as similar in its operation to the tropical hurricane; with respect to the downward pressure of the wind, cannot be compared with it; and the reason is obvious—the absence of an attenuated atmosphere, as an attracting medium; when the amount of difference between the temperature of the descending streams of air, and the lower atmosphere into which these flow, is extreme, then the wind will be at a maximum power; and, as this amount lessens, as it most likely does, in the progressive course of a hurricane from the southern into the more northern latitudes, so will the downward pressure and velocity of the wind be reduced. I shall be greatly mistaken if we do not hear of a hurricane having visited the S.W. parts of the north Atlantic; as there is every probability of the winter having set in early this year in those parts of the northern regions, the meridians of which pass over the western parts of the Atlantic.

It is probable, that when accounts reach us from France, and from the north of Scotland, this storm will be found to have past over a very large extent of land and sea.

S. J.

5th December, 1836.

Some effects of the late Storm.

LONDON.—Blackfriars bridge—part of balustrade blown down in two places. Stacks of chimnies, parapets, sheds, leaden roofs, coping stones rolling about, Westminster Abbey towers and the ball and cross of St. Paul's tottering; tiers of colliers broken adrift in the river, bowsprits and bulwarks, masts and yards carried away, barges and boats adrift, some half filled with water, some bottom upwards; about 200 wherries sunk or destroyed; a boat on Wapping beach lifted over two others, and carried 80 yards away by the wind uninjured; embankments broken and land inundated; some persons injured, no lives lost. In the Royal Exchange lead roofing blown away, and knocked down the entablature over the statue of Henry VIII., and the sceptre from that of Edward VI.; in Kensington Gardens about 130 of the largest trees blown down. Gale most violent between noon and 3 P.M., when it suddenly subsided.

PORTSMOUTH.—The sea covered with foam, spray mingled with the air; view obstructed; H.M.S. Serpent at Spithead, having previously lost her bowsprit at Cowes, was dismasted; two seamen lost.

WEYMOUTH.—Streets impassable from the falling bricks, &c.; shops shut to save windows; tide above the quays; small craft, planks, and spars, hurried about in all directions; no lives lost.

NEWPORT, *Isle of Wight*.—Continual falling of slates, tiles, chimney-pots, &c. Worsley obelisk blown down, trees uprooted, a French vessel blown ashore.

COWES.—Boats swamped, vessels in harbour safe, houses unroofed, trees uprooted, signal station at Appledurcombe blown down, no lives lost.

PLYMOUTH.—Protection of breakwater good, sea lashed into foam, fifteen ships in sound rode well, some merchant ships drifted, roofs of storehouses injured, sheets of lead *rolled up*, no lives lost.

DEAL.—A complete hurricane, sea terrifically raised, six ships in downs dismasted, and others injured; all drove, and a foreign galliot lost; houses suffered severely; no lives lost.

BRIGHTON.—Stacks of chimnies blown down, houses unroofed, trees torn up, vehicles blown about, and persons unable to stand against the wind, the chain pier broken, windmills, barns, and bathing machines shattered to pieces; walls blown down, and part of the store rooms of the palace injured.

RYDE.—Houses and boats suffered alike, one vessel entirely lost.

ROMSEY.—One house blown down, all lost part of their roofing; trees levelled with the ground.

SHOREHAM.—No damage to shipping, barges and boats sunk, chimneys making their way through roofs, hay and corn ricks scattered about.

EASTBOURNE.—All buildings suffered, and hay ricks, &c. blown down, the Hastings coach blown over; no injury to passengers.

WORTHING.—Slates from the roofs flying about and chimnies blown down, walls laid flat, boats blown over-land; no lives lost.

LITTLEHAMPTON.—Barges sunk, houses unroofed, a slate from which cut an iron rail asunder, windows forced in, fragments of buildings

flying about, spray of the sea covered everything, having a crust of salt, bodies of two seamen drowned a month before, four miles of sea drifted on shore.

The foregoing rambling notes convey some idea of the effects of this storm, which appears to have exceeded in violence anything of the kind in this country. It has been felt in all parts of it, but mostly at those places on the sea-coast, where they were exposed to its full violence.

This war of materials on shore reminds us of an old song which some of our readers will perhaps excuse us for adding.

“ One night came on a hurricane,
The sea was mountains rolling ;
When Barney Buntline turn'd his quid
And said to Billy Bowline—

“ A strong nor-wester 's blowing, Bill,
Hark ! don't you hear it roar now ?
Lord lov'em ! how I pities all
Unhappy folks ashore now.

“ Fool-hardy chaps what live in towns,
What dangers they are all in,
And now are quaking in their beds
For fear the roofs should fall in.
Lord lov'em how they envy us,
And wishes, I've a notion,
For our good luck in such a storm,
To be upon the ocean.

“ And as for those who're out all day
On business from their houses,
And late at night are coming home
To cheer their loving spouses,
While you and I, Bill, on the deck
Are comfortably lying,
My eyes, what tiles and chimney-pots
About their heads are flying.

“ And often have we seamen heard
How men are kill'd and undone
By overturns of carriages,
By thieves and fires in London :
We know what risks these landmen run,
From noblemen to tailors ;
Then Ben, let us thank Providence
That you and I are sailors.”

OBSERVATIONS ON THE PRESENT STATE OF THE WYRE NAVIGATION,
*With proposals to render it safer and easier of access, by Com-
 mander E. Belcher, R.N.*

THE present mode of entering the Wyre is dependent on buoys, a beacon on the land, and a perch on the sands, the base of which is dry at low-water neap-tides.

On reference to the present plan, it will be apparent that the beacon and perch in line, contrary to general practice in harbours, leads *through* the *centre* of all *dangers*, instead of avoiding them. That the buoys are also placed in the *centre* of *dangers*, instead of at their extreme navigable limits; and, finally, the channel being extremely tortuous, is much against affording the facility *at present* which other nautical men, without the survey before them, or a sufficiently minute inspection at low-water "springs" have been pleased to assert.

As the Wyre has been advanced as a "port of refuge," which ultimately I trust it may be *made*, I take it up on that ground, as each project must tend to this desirable end, and may be supported or not.

In all cases where harbours are sought as "refuge," they should offer easy access at *all times*, and particularly at dead low-water, at spring-tides. This alone can inspire confidence in the mind of the experienced navigator. They should not demand the aid of a pilot; and, finally, should possess such clear and intelligible leading marks, that the most ordinary seaman may be enabled to run for the refuge offered, without the chance of failure.

Buoys are frequently obscured in such rough weather as our subject would embrace, and are, moreover, liable to be washed away by any violent gale.

The question then presents itself, Can the Wyre afford such an asylum as suggested, or can it be made to do so artificially?

To the latter I confidently answer, Yes; and I will proceed to explain how this is to be achieved.

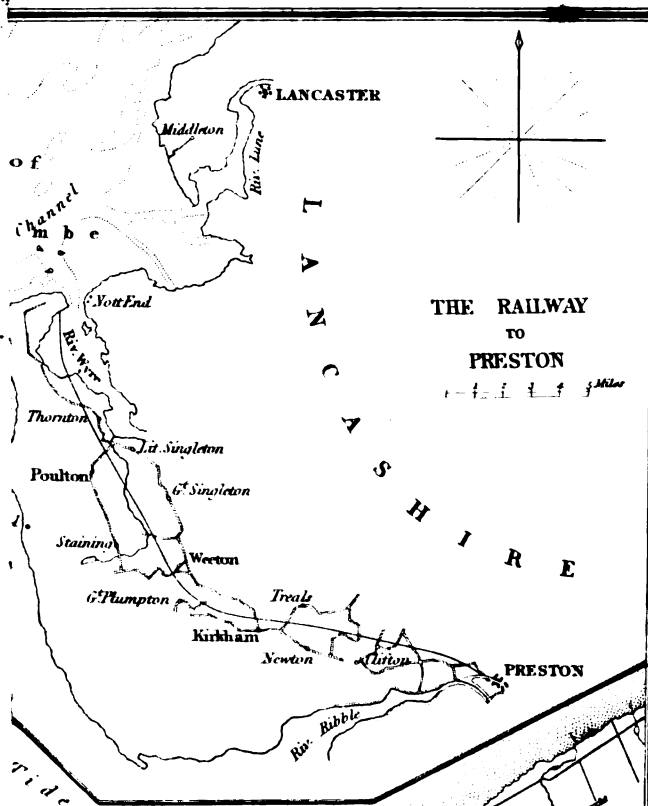
First. I would propose to render the channel navigable to the depth of ten feet, (low-water springs,) which would only require the cutting away a part of the outer ford, and eastern sands. If this depth be considered inadequate, it can easily be deepened by the action of the steam dredge, the bottom being sand and clay.

Secondly. I would propose the removal of the perch to the Knott side, which would obviate the necessity of buoys, and afford one distinct "*long leading mark*" up to it, as seen in the plan.

Lastly—and as a measure inviting vessels to a secure position—I would recommend the construction of a pier, extending from the "Tupp Hill" (or Mount Fleetwood) to where the perch now stands. This would afford, in addition to *safe riding*, facility for refit, if not intending to enter the "Canshe Hole."

I have proposed the shifting of the perch for reasons which, to the eye of a practical seaman, must at once be apparent. The present tortuous line of channel cannot by *any* leading marks, *simple* or *complicate*, be rendered safe, or easily navigable to *experienced* seamen, and never without a local pilot, and rising tide. In times of danger and distress, can we find the one, or wait for the other?

1137



WYRE HARBOUR

BY COMMANDER BELCHER
R.N.
with the

PROJECTED TOWN OF FLEETWOOD
1836.

Current
Hill

Farm

Presall Mill



Tides at Springs 4 1/2 to 5 }
at Neaps 2 1/2 } Knots per hour

Shifting the perch to the proposed position, will, if the ford be cut away, allow of one clear leading mark beyond the extreme eastern dangers, as expressed in the plan.

At the present moment, the small ford is only awash at the lowest springs, and the cutting of *six feet only* would render it preferable to the present unsafe, tortuous course. Any seaman, at a glance, will perceive, that with the wind in the direction of the black arrow,* the channel is impassable; whereas it would be a leading wind on the "long leading mark." The part to be cut away is merely a bridge, the depth from the inner edge to the proposed position for the perch ranging from ten to twelve feet.

Thus far, the outer channel would offer a safe entrance of ten feet, (or more, if wished, by cutting,) and conduct vessels at half-tide into safe riding, from twelve to fourteen feet. I shall now proceed with my further suggestions for rendering the interior better fitted for the accommodation of larger vessels, as well as the maintaining the outer channel, if cut, by giving a more direct scouring force than can at present be brought to act. In order to effect this, it will be requisite to remove the rough† edges, and outlying *rocks* of the "Knott end," which are at present a very serious objection. As the Knott is composed of loose rocks, gravel, and a tenacious red clay, the expense would probably be covered in part by the value of the material removed; and, if the Knott end is rounded off, as on the dotted line from the new perch position, a safe channel would then be found, by giving the perch a moderate "shaving berth." The channel would then admit of the tide taking a fair course outwards, instead of its present objectionable route, from side to side, accumulating eddies, to the injury of the navigation.

If the directors of the Wyre navigation undertake to execute the proposed alterations, which are trivial, and even due to a fishing port, the navigation of the Wyre may then be entitled to confidence; and I am given to understand that steps have been, or immediately will be, taken to secure these advantages.

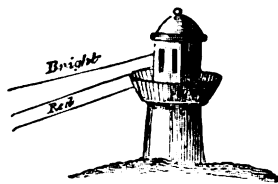
Wyre would then offer one fair long leading mark from sea, entirely independent of buoys; be totally independent of pilots; and a moderate proportion of intelligence would only be required from the masters of vessels seeking shelter therein. The fair ten-foot channel being once established, and the traffic ascertained, it will then be time to consider whether the prospects of increasing trade, and resulting revenue, will warrant the further deepening to eighteen feet, which I am satisfied could *easily* be effected by the steam-dredge—a machine now almost indispensable to the maintenance of our harbours.

Before I take leave of this outer channel, and the improvements necessary to render Wyre a *port*, the lighthouse question must be disposed of. A "*port*" without a lighthouse, without the means of entrance at night, cannot command attention. It is of course one of the principal features, and contemplated by the directors; but two are necessary: they should occupy the positions of the land-mark, and the new perch. If their height could be so regulated, that when in contact they would, as in the case of the Calf Lights on the Isle of Man, point out the limit

* See Plan.

† Dotted red.

of approach, they would of course be doubly valuable; but of this I am not prepared to speak decidedly—I offer the suggestion. Doubting it, I would propose that a fan should be placed on the upper lighthouse, which, by red glass, would warn vessels *on all sides to seaward* of the danger. This is the more necessary, because the soundings suddenly change from twenty to three fathoms! In the fair way of course both lights would be clear.



With respect to the inner anchorage, or “Canshe Hole,” and its bank, I would observe, that if the bank be based on *hard material*, steps should be taken to secure a low pier on it, to prevent the loose gravel washed over it from injuring or filling up the “Canshe Hole anchorage.” But if it be composed of soft material, which I have reason to suspect at its northern extremity, then its entire removal will become an object; as the stream at the last quarter ebb, which is the scouring force, can then act more directly past the Knott end. The steam-dredge would readily effect this, and the material will afford a valuable composition for the buildings on shore.

If the latter point can be effected, the anchorage would then become capacious, the whole stream would be more effectually at command, and tend materially to the general improvement.

Wyre Harbour as a Port of Refuge.

I now come to consider Wyre as a “Port of Refuge.” The efficient navigation being disposed of, the point next to be discussed is, What shelter ought a port of refuge offer?

Safe anchorage to vessels drawing twelve feet is barely what the first improvement admits. If the Wyre Company offer more, they must *cut* it; and this they can readily obtain an estimate of, as well as contract. These have now become matters of certainty.

But safe anchorage *alone* is not sufficient; for *anchors* or *cables* may be *wanting*. Buoys, it is true, may offer assistance; but the difficulty of steerage, or loss of rudder, may render this doubtful or impracticable. It may be necessary to ground the vessel to save her, and she should be enabled to reach assistance in the worst weather.

I cannot see that this can be effected at Wyre, to the extent of *alluring* vessels to forsake their port, to which they may be bound, to seek one under their *lee*, unless something better than the improved entrance (suggested) would afford.

Nothing short of a pier would entitle it to such confidence, and the line from the “Tupp Hill” to the present perch would be most advisable for several reasons.

First. The constant westerly motion of the waves from Blackpool, round Rossall Point, carries the shingle towards the mouth of Wyre, which at this moment is composed on its western bank of a “gravel steep.” This would soon be obstructed by the pier, would accumulate, and form a barrier line, to maintain it from the western sea (which even now has to flow over a long flat.)

Secondly. The tide from Wyre, and the first ebb of Lune, would be diverted from its westerly direction, and made to flow through the proposed new channel.

And, lastly. The scour of the tides past the end of the pier would deepen the swatchway, which now lies westerly from the perch, or pier end, and enable vessels seeking the port to run, at high-water, direct for the end of the pier, where an ordinary depth of twenty-two feet springs, and sixteen feet neaps, might be safely calculated on.

The pier then would afford, in westerly gales, fair shelter and anchorage. But if unable to enter at flood, or high-water, by the swatchway, which should be marked by perches, and the scantiness of wind prevents sailing into the Wyre, the anchorage at the entrance is *safe*—good holding-ground and warping may be resorted to when the banks shew awash.

The only final improvement which at present offers, is the completion of an eastern pier to the low light, which, connecting it with the land at “Knott end,” would not only afford shelter from northerly gales, but being composed chiefly of a clayey bottom, would offer excellent spots for grounding vessels, graving slips, boat docks, &c.

EDWARD BELCHER, Commander, R.N.

18th Nov., 1836.

The outer buoy should be moved westerly* to secure it as a mark, (on with Rossall land-mark.) To clear eastern dangers, a mark (say a house gable whitewashed) should be placed on the coast, in the position shewn in the plan, as a fair leading-mark from the westward, to the safe outer anchorage.

Mooring-buoys should be placed there for vessels *in distress only*, as the *risk* of leaving an anchor behind might deter a vessel from running to leeward in search of this berth. E. B.

“Gnar” (mentioned in the plan) is sand, hardened into lumpy sandstone by worms, and is easily crushed by hand or foot.

The following instructions for entering the Wyre are adapted to the present state of its navigation:—

The Directors of the Preston and Wyre Railway and Harbour Company hereby give notice, that several additional buoys have been lately placed in the harbour of Wyre, and that the following are the directions for vessels bound to or entering the said harbour:—

Keep Lancaster church steeple a small sail’s breadth open to the southward of the bluff end of Highfield; when this cannot be seen, keep the westernmost part of Walney Island to the eastward of Blackcombe, until Rossall land-mark bears S.E.; here you are entering the deep water of Lune, where you will have twenty-eight fathoms at low-water.

If in dark hazy weather you should fall in with low land, bearing E.N.E., &c., and not knowing whether it is Rossall Land or Walney Island, your lead will at once inform you; for at the distance of four or five miles from Walney, in that direction, you will have eight or ten fathoms of water, but with the same bearings and distance from Rossall, you will have only four or five fathoms of water.

* A beacon buoy is now ready to be laid down on the spot alluded to by Captain Belcher.

The shoals to be avoided on approaching Wyre, are Shell Wharf, North or King's Scar, and North Wharf.

Shell Wharf extends from W. by N. to W. by S. from the land-mark; here you must take care about low-water to keep the land-mark to the southward of E.S.E. A beacon buoy will be placed on it, with the following bearings: Lancaster church, E. by N. $\frac{1}{2}$ N.; Rossall land-mark, S.S.E.; Pile lighthouse on with the centre of Blackcombe, bearing N. by E.

By keeping Lancaster church steeple, as before mentioned, a small sail's breadth open to the southward of Highfield, you will avoid the North or King's Scar, which is a stony spit running from the North Wharf, in a north-west direction, about three-quarters of a mile; when abreast of it, Pile Castle will be on with the Hollow half-way up Blackcombe. On this Scar will be placed a large Red Buoy, with the following bearings: Rossall land-mark, S. $\frac{3}{4}$ W.; Pile Castle on with the opening half-way up Blackcombe, bearing N. $\frac{3}{4}$ E.; Thornton Mill, open a handspike's length to the westward of Rossall land-mark; the Inner Perch, S.E. $\frac{1}{2}$ S.; buoy of the Fairway, E. by N.

The buoy of the Fairway is a large Red Nun Buoy, with the following bearings: Land-mark, S.W. $\frac{1}{4}$ S.; Fleetwood Hill, commonly called Tup Hill, S.; Outer Perch, S. $\frac{1}{3}$ E. It lies in three fathoms and a half water, low spring-tides, and is within the influence of the Wyre tide. Here a vessel may anchor until proper time of tide, or until she receives a pilot on board.

In sailing or working to windward, along the edge of North Scar and North Wharf, it will be advisable to keep the lead going, and to stand no nearer than six or seven fathoms, both shoals being steep. It will also be necessary to pay attention to the tides, which set as follows: the first half-flood to the southward, or into the Wyre; the latter half, when the sands are covered, to the eastward; the first half-ebb to the westward, and then to the northward.

The time of high-water, of full and change, at the foot of Wyre, is 11 h. 30 m., and the rise and fall about five fathoms. At proper time of tide the largest vessels may enter with perfect safety. S.E. and by S. of the Fairway Buoy is placed a Red Buoy, on the N.E. point of the North Wharf, the Perches in one bearing S. $\frac{1}{2}$ W.

At half-flood, S. $\frac{3}{4}$ W. will lead to another Red Buoy placed on the Great Foord, which, with the whole of the red buoys, must be left on the starboard hand on entering the harbour.

Before nearing the buoy on the Great Foord, will be observed a Chequered Buoy on the Little Foord, to which it will be advisable to give a good berth, leaving it on the starboard or larboard hand, as seems best.

Little Foord never shews above water but at the very lowest tides, so that at half-flood there will be at least fourteen feet water over it.

After passing the buoy on the Great Foord, the best mark for steering direct to the buoy on the Great Knott, is to keep Bignall Point (which is on the east side of the river) about a handspike's length open of the Point of Warren.

Before arriving at the buoy on the Great Knott, two other black buoys must be passed on the larboard hand, which are placed on Bernard Wharf.

Between the outer perch and the red buoy on the Black Scar, there is a hole, with three fathoms water, where a vessel may come to an anchor, should she be too late for tide; the mark for which is, Preesal Mill on with the centre of a white public-house, called Knott-End, on the east side of the river.

After passing the buoy of the Knott, which you will leave on your larboard hand, steer for the Sea Dyke, or the Warren Side, which you please, and at either place you may come to in safety.

The Dues to be paid by all masters of vessels entering or using the harbour of Wyre, are as follow:—

For every vessel employed in the Foreign Trade 3d. per ton.

For every vessel employed in the Scotch or Irish Trade 1d. per ton.

For every vessel employed in the Coasting Trade ½d. per ton.

Which dues are to be paid to Stephen Burrige, Esq., at the Custom House, Poulton.

By Order of the Directors,
OWEN T. ALGER, Secretary.

Wyre Harbour, 21st September, 1836.

[We are authorized to state, that arrangements have been made by the Directors of the Preston and Wyre Railway Company, for carrying into immediate effect the various suggestions contained in Captain Belcher's observations; and further, that the construction of the pier on the western side of the harbour is at the present time engaging the serious attention of the Board.—ED. N. M.]

HARBOURS OF REFUGE.

To the Editor of the Nautical Magazine.

London, 16th December, 1836.

SIR,—I beg you will accept my sincere thanks for the prompt insertion of my letter, on the subject of Refuge Harbours, &c. in the last number of your valuable magazine; where I observe an advertisement of a project for constructing two harbours of refuge—one at Lowestoft Ness, the other at Dungeness. The immense number of vessels, many of them with valuable cargoes, that pass those two prominent points of our coasts, and that are often obliged to anchor in those dangerous situations in contrary winds, and in gales, (there being no safe harbour within about 140 miles of either place,) and the frequent destruction of property, and of human life, that occurs in the vicinity of those places, and within the distance referred to: these circumstances at once prove the importance of constructing harbours at the two points mentioned, and their great utility when completed must be obvious to all; and the practicability of executing them at a comparatively small expense, is equally so.

Wishing the promoters of these momentous and important objects success in their benevolent and patriotic exertions, and requesting the insertion of these few remarks in your next number,

I remain, Sir, your obedient servant,

NAUTICUS.

GREENWICH MEAN TIME.

To the Editor of the Nautical Magazine.

SIR,—The very great benefit the merchant service has already derived from the “Time Ball” at Greenwich, induces me to address you for the acquisition of another : namely, the exposition of the face of a regulator at the observatory, shewing mean time ; for as there is no positive correct time to be ascertained, (except at one o'clock at Greenwich) the best clocks in London varying sometimes from two to three minutes, and the regulators of chronometer makers likewise varying, and one and all of them being too proud to acknowledge any error, by stating their regulator is so much fast, or slow, as the case may be. Now, in regard to the Time Ball, it frequently happens that it is not convenient to be on board our vessels precisely at one o'clock, and sometimes on the eve of departure, a foggy day will prevent the fall of the ball from being seen, even so near as the Hospital. An acknowledged correct time, such as the observatory *could* furnish, would be most useful, and is most decidedly wanted.

Begging your insertion of these few remarks, in your most useful publication, and hoping they may be the means of calling attention to the acquisition of this desired object,

I remain, sir, your obedient servant,

Jerusalem Coffee House,
14th Nov., 1836.

C. S. R.

SIGNALS FOR HARBOURS OF REFUGE.

To the Editor of the Nautical Magazine.

London, Nov. 18th, 1836.

SIR,—Aware that everything connected with this important subject, will readily meet with insertion in your very valuable work, I am induced again to trespass on your kindness, and beg, at the same time, to thank you for the insertion of my letter in your last month's number, (in which, by the bye, there is an error—the word eastward, instead of westward, being used;) at a period, too, when much important matter lay before you, with prior claims to your attention.

And as I am aware that such is still the case, I would briefly observe, that, as Harbours of Refuge cannot be effectually established without the assistance of government, it would be well to have a code of signals constructed on the most simple plan, without any elaborate signification, expressly for the use of such harbours, to communicate with ships in the offing, or such as may be about to enter from stress of weather, or other causes ; for, should each of such harbours adopt different methods of communicating by signals, all ships cannot so readily be made acquainted with the signification ; but were one plan adopted for all, every ship may then be easily supplied with a signal sheet.

Under this impression, and having been recently engaged in drawing up a code, suitable for such plans, to be made answerable for

ships of other nations also, which have occasion to put into a harbour of this description, on the English coast, a specification, (when your pages are not so fully occupied,) I shall be most happy to transmit for insertion.

I have the honour to be, &c.

EDWARD SMITH, Com., R.N.

LIGHT VESSELS,—NORTH SEA.

Trinity-house, London, 16th Nov., 1836.

IN accordance with the intention expressed in the notice from this House, under date the 7th instant, floating light vessels will be forthwith stationed in St. Nicholas Gatt, at the N.E. end of the Shipwash Sand, and at the Swin Middle Sand, and a light will be first exhibited on board the same on the evening of the 1st January next, unless the state of the weather should render it impracticable for the vessels to take their respective stations.

Masters of vessels, pilots, and others, are to observe that the light at each of these stations will be exhibited by a single lantern, and that during the day each vessel will be distinguished by a ball at the mast-head, which in the event of parting the moorings or driving from the proper position, will be immediately taken down.

The marks and bearings for these light vessels, with other particulars, will be published in a short time.

By Order,

J. HERBERT, Sec.

RIVER HUMBER LIGHTHOUSES.

Trinity House, Hull, Dec. 10, 1836.

NOTICE is hereby given, that the corporation of the Trinity-house, in Kingston-upon-Hull, having, for the benefit of navigation, erected two lighthouses near the bank of the river Humber, at South Killingholm, in the county of Lincoln, and another lighthouse, near the bank of the said river, at Paull, in Holderness, in the county of York, fixed or stationary bright lights will be exhibited in these lighthouses on the evening of Friday, the 13th day of December inst., and thenceforth continued every night from sun-set to sun-rise.

The lights at Killingholme are designated as the High Light and the Low Light; the former is about fifty feet and the latter about thirty-five feet high. The light at Paull is about thirty feet high.

When the two lights at Killingholme are in one, they will bear N.W. $\frac{1}{4}$ N., and will lead ships and vessels coming from sea a clear course up the Humber from Spurn. On approaching them the light at Paull will be seen, when ships must alter their course to the northward, but not steer for it until the high light at Killingholme bears W.S.W.; at the same time strict attention must be paid to the state of the tide. Vessels bound up to the port of Hull must be guided by the lead round Skitter Sand, the Sand Buoy bearing west from Paull lighthouse.

N. B. In case of need, with Killingholme lights in one, a vessel may take the ground with safety, the bottom being mud.

By order,

WM. BUNNEY, Secretary.

HARTLEPOOL HARBOUR LIGHT.

ON the 22d inst. a Red Light will be erected on the lighthouse placed on the pier at Hartlepool, which will be lit every evening at sun-set, and continue lighted to day-break. The magnetic bearings of the said light, taken from the lighthouse, and estimated distance are as follow :—

Outer part of Hartlepool Heugh, E.S.E., distance $\frac{1}{4}$ mile.

Langscar Buoy S. $\frac{1}{2}$ E., „ 2 miles.

Rowcliff S.E. by S. „ 12 miles.

Chequered Buoy of the Bar, S.S.W. $\frac{1}{2}$ W., about 120 fathoms.

Ships coming from the northward will open the light, when it bears W.N.W., and should not in the night time approach nearer the shore than six or seven fathoms water at high-tide, and when the light bears N.N.W. may anchor if necessary. In proceeding for the harbour by day, they must, after passing the Chequered Buoy, leave all the black buoys on the starboard-side.

N.B. A red flag will be hoisted at half-flood, and continue to half-ebb.

Hartlepool, Dec. 14th, 1836.

DIRECTIONS FOR ENTERING THE PORT OF BILBAO, OR RIVER NERVION, by Mr. Henry Thompson, Second Master of His Majesty's Brig *Saracen*.

THE entrance of the river Nervion is situated in lat. 43° 20' N., long. 2° 53' W. It is high-water on the bar at full and change at 3 h. P.M., and at Bilbao at 3 h. 20 m. P.M. Spring-tides rise thirteen feet, and the variation of the compass in July, 1836, was 23° W.

Vessels bound to this river in fine weather will generally find pilots a short distance from the land, as many of the fishermen living in the vicinity of the river are pilots.

In standing towards the bar at the entrance of the river, the chief pilot will always be found in attendance, in a boat, which may be known from others by having a *red flag* flying, which boat is to be kept in a line with the western pier-head, as the leading mark over the bar. The bar is sounded daily by this pilot, (when the wind and weather will permit,) otherwise it cannot be depended upon, in consequence of the sands of which it is composed frequently shifting. But, in bad weather, when boats cannot go out, on the appearance of any vessel standing into the bay, if the bar is considered passable, a red flag is hoisted on a point of land about half a mile outside Santuree, a small village on the western extremity of the bar; and in this case the chief pilot stations himself on the western pier-head, with a red flag in his hand, with which he guides vessels across the bar, waving it to starboard or port, as necessary. (On the flag being waved to starboard, it is meant that the vessel's head is to go to starboard—of course the helm to port.) If the bar is not passable, a white flag is hoisted on the same point of land, and kept flying during the time any vessel is seen in the offing. In this case I would recommend, during the winter months, for any vessels to proceed to Santana, a port about seventeen miles to the westward, and there await for moderate weather. The state of the bar is generally known by the pilots of that port, and the anchorage there is also good.

During the summer months, I would recommend vessels to stand off and on, keeping outside the bay, and well to the westward, to avoid being driven on Cape Villano by the north-west swell, which is a common occurrence when the winds fail. Anchoring in the bay, is not recommended under any circumstances, except for a few hours, during the day, to await a tide, as the riding is very heavy; and, should a vessel part her cables, it would be almost impossible to work out against the heavy north-west swell.

It is impossible to lay down marks for taking vessels up and down the river, its navigation being very intricate, owing to the irregularity of the shoals.

Between Portugaleta and Olaveaga, there are several muddy flats stretching out from the sides of the river, with only eight feet at the deepest part at low-water; and between Olaveaga and Bilbao there are similar shoals extending the whole way across the river, and are barely covered at low-water spring-tides. The river is navigable at high-water spring-tides for vessels drawing nine feet water as far as Bilbao, those drawing twelve feet to Olaveaga, those drawing fifteen feet may lie at Saroza, San Nicholas, and Portugaleta.

The general mark for crossing the bar, for boats and small vessels, (say those drawing eight feet,) is to bring the churches of Portugaleta and Sestao in one, standing on with this mark until having arrived half way between the point of land called El Campillo, (is the one on which the red and white flags are hoisted to show the state of the bar,) and the village of Santurce; the western pier at the entrance of the river will then be end on, which is the leading mark over the bar, and when abreast of the house, called Casa de Campo Grande, which stands alone about one-third the distance from Santurce towards the pier head, haul over for the middle of the river, to avoid a ridge of loose stones extending a little more than a cable's length from, and in a line with, the western pier head, with only four feet over it at low water; there is a similar ridge stretching out about two cable's length from the eastern pier head, dry at low water, which will also be avoided by following the above directions. Steer midway between the two piers until abreast of Portugaleta, at which place there is a good anchorage, in the middle of the river, as far up as the bridge, called Las Siete Ojos, (or the seven eyes,) it having seven arches.

After crossing the bar, and being between the two piers, which form the entrance of the river, (if boats have not been able to go out,) a pilot will be found in readiness to go on board to bring the vessel to an anchor, or, if the wind and tide will permit, to proceed direct up the river. Should the wind prove otherwise, bullocks are provided by the pilots, for the purpose of towing vessels up and down the river, there being a good stone pier on the left hand side all the way to Bilbao.

The largest vessels the pilots will take over the bar, are those not drawing more than fifteen feet water, but in this case it must be with a smooth sea on the bar, and a commanding breeze at the top of high water, spring tides.

The pilots generally dislike taking in such large vessels, as the bar is very dangerous, and cannot always be depended on.

The position of the bar is laid down in the accompanying chart as it was found to be on the 15th day of July, 1836, when it was surveyed.

I understand from the pilots, as well as from my own observations during two years in the river, that, although the bar frequently shifts, in a short time it returns to the position as expressed in the accompanying chart, and averages that position nine months in the year.

A north-westerly gale has more effect in shifting its position, and often turns the channel in the shape of the letter S; at which time it is very dangerous, and has then generally less water on it. I have seen it at extraordinary spring-tides left nearly dry, so that people walked across, (there being at that time about one foot of water;) but the above-mentioned marks will always take boats and small vessels across at high-water.

For further particulars, I beg to recommend a reference to the chart.

[This chart is just published by the Admiralty.—Ed. N.M.]

Nabal Chronicle.

WE understand that the further prosecution of the Euphrates Expedition has been abandoned, and the remaining vessel disposed of to the East India Company. Colonel Chesney's return to England will no doubt produce an interesting account of the proceedings of this disastrous enterprize.

PERILOUS CONDITION OF H.M. SLOOP ZEBRA.—*Extract from a Letter.*—From the 2d to the 9th of August our passage down was attended with variable winds and weather. On the 20th, Garden Island, bearing E.N.E., dist. 66 miles, a westerly gale obliged us to haul off a lee shore; it continued to increase with heavy rain and squalls on the 23d, when at 11, A.M., Cape Naturaliste bearing E.N.E., and under a close reefed foresail, reefed topsail, and forestaysail, the Zebra fell into a cross sea, apparently caused by a meeting of the currents, which are said to run on this coast at the rate of 40 miles per day, and being violently struck on the starboard-side she was thrown on her beam ends. Fortunately she was battened down fore and aft, and the weight of water on her deck having forced out the lee-ports she unexpectedly righted; but as she was still labouring much, and shipping water, it was necessary to throw the two after guns overboard, and afterwards two more. This relief enabled her to go on very well till the 25th, when, at 6h. 30m., A.M., Cape Leeuwin bearing W.N. a violent squall obliged us to take in the main topsail, and haul down the fore-staysail, and being at this time severely pressed with the lee waist and guns under water, to relieve her, the two foremost guns were thrown overboard. At 8 A.M. a perfect storm and mountainous sea completely overpowered the ship, and compelled us to throw six more guns over. Reluctant as we were to part with the guns, the preservation of the vessel and the crew demanded the sacrifice; and had it not been made she must have gone down. At 5 P.M. it moderated sufficiently to wear, and at 6 to set the close-reefed main-top-sail and fore-staysail, the wind and sea gradually abated, and on the 28th, the hatchways that had been battened down since the 20th, were re-opened.

On the 30th, at 2 P.M., inside of the Casuarina shoal, and on the

faith of the chart and its directions steering north for the entrance into Cockburn Sound found that the buoy and beacons had been washed away, we anchored under the partial shelter of the Casuarina; the Haycock bearing E. $\frac{1}{4}$ N. one and a half miles. Being on a dead lee shore, guns were repeatedly fired to enforce the signal for a pilot, and were at length heard by Captain Toby, late commander of the government colonial schooner. In a Dutch six-oared gig, at the risk of his life, he came to our assistance, and slipping our cable, took us out between Casuarina and Rottenest; the gig and jolly boat which had been previously sent with the second lieutenant and master to try for the channel; the sea on the reefs were forced on shore and nearly swamped; the following morning proved fine, and with the assistance of the harbour-master, who had placed our boats to mark the channel, we run into Cockburn Sound.

TIDES AT TRIPOLI.—There is little of regular tides at Tripoli, the rise and fall being in a greater measure under the influence of the wind. For instance in a strong northerly gale the sea rises full five feet, and in a southerly wind it falls in the same proportion; but I believe there may be a regular tide of not more than two feet.

The tides at Kerkanah and Gerba assume a greater regularity, and the rise and fall is much greater. There is a strong current passes Cape Bon and continues to run along this coast, and I apprehend at Kerkanah, the little Syrtis as well as the great, the rise and fall is in some degree regulated; but I am not able to assign the reason.

ROYAL GEOGRAPHICAL SOCIETY.—Dec. 12th, Sir John Barrow President, in the chair. The following papers were read:—1. A letter from Mr. Davidson, dated Wad, noon Nov. 5th, stating that final arrangements for his journey to Timbuctoo were made, that he was to depart three days afterwards. 2. A letter from Mr. Leacock, of Madeira, describing his ascent of the peak of Teneriffe, in company with Mr. Veitch, in the depth of winter, and their return to Oratava in one day. 3. Accounts from Mr. Schomburgk, dated Ohreala, Sept. 22d, stating that he had ascended the river Courantine about forty miles. 4. A letter from Mr. W. T. Hamilton, describing his route from Angora to Smyrna, in the course of which, he has collected much important Geographical information, for the improvement of our maps of Asia Minor. It was announced by Sir John Barrow, from the chair, that a minute, on the importance of exploring the north-western coast of Australia, had been presented to Lord Glenelg by a deputation of the council, and, he believed, had met with the sanction of the Government; and that the Admiralty were willing to send out a vessel to survey that coast which had been left quite unexplored by Captain King, and remained as unknown in the present day as it was to the old navigators. In our next, we shall offer a few remarks on this important subject.

NEW LIGHT IN THE GULF OF FINLAND.—A new lighthouse, with a revolving light, is erected on the Island of Glosholm, opposite the south end of the Island of Pellingor, on the Finnish Coast, bearing about N. by E. from Eckholm, in $60^{\circ} 11' 10''$ N. lat., and $25^{\circ} 51' 24''$ long. E. of Greenwich.

THE LONDON MERCHANT STEAMER.—We observe that this vessel struck on a rock called the Manuel Head, on the N.E. point of Holy Island, about ten miles south of Berwick, but got off again and proceeded to Berwick for repairs. We recommend to the attention of the commanders of vessels navigating the eastern coast, the recent surveys of this part by Commander Johnson, R.N., and the directions which have been published with them by the Admiralty.

TORBAY.—There has been a meeting at Brixham of great importance to the shipping interest, to adopt the means for constructing a break-water or harbour at Torbay. Sir J. Y. Buller presided. Mr. Rendall, an engineer, in describing the project, said that the cost would be great, as it was proposed to cover an area of near fifty acres, averaging a depth of water of three fathoms and a half when the tide was out. The want of such a harbour of refuge in the British channel was strongly enlarged upon.—*Portsmouth Paper.*

DRY-ROT—KYAN'S PATENT.—We find by the London Gazette of the 20th Dec. that the patent for this important invention has been extended to the colonies. The Gazette contains an Order in Council, which declares that the "Anti-Dry-Rot Company having, by a memorial, addressed to his Majesty in Council, humbly represented that the said Anti-Dry-Rot Company are now, at very considerable expense, proceeding to bring into use the invention of Capt. J. H. Kyan, for the preservation of wood and other vegetable substances from decay, and praying that his Majesty would be pleased to make an Order in Council for the enrolment of such letters patent within his Majesty's plantations abroad, his Majesty has been pleased to order, that if the said Dry-Rot Company shall deposit in the office of the Colonial Secretary, or in the office for the Registration of Deeds within each of the several colonies to which the legislative authority of his Majesty in Council extends, true and perfect copies of the said letters patent and specification, then and in that case such copy of the said specification, then and in that case such copy of the said specification shall be taken within the colony as valid and effectual as the original of the said letters patent, if produced, could be."

SHIP'S NAMES.—*Extract of a Letter.*—"On our way we fell in with a part of the stern frame of a vessel, being the sternpost and transom of one of about 120 tons. From the appearance of the timber, and the recent fracture of the bolts, I consider it could not have been many hours in the water. We have landed the wreck here, but cannot make out her name. This leads me to remark, that it would be desirable that all the timbers and planking should be branded with the vessel's intended name at the time of building, or the builder's name and yard should be marked on it with a branding iron, a matter easily done without trouble or expense.

NORTHERN WHALE FISHERY.—The *Aberdeen Herald* suggests a plan for rendering the whale fishing more profitable, safe, and agreeable. That something is necessary to encourage this branch of commerce is proved by the fact that within the last twelve years the

number of vessels employed has decreased from 142 to 81. The plan is simply to establish a settlement of active and enterprising whale-fishers on some favourable spot in the vicinity of Davis' Straits, and to employ only so many large vessels as may be necessary to carry out provisions to the colony, and fetch home the oil, blubber, whalebone, and other articles which may be worth importing. From all the information that we at present possess, we should think that the most eligible position for the settlement would be at Pond's Bay, or somewhere between that and Lancaster Sound, on the west coast of Baffin's Bay. There are some situations on the north-east shore (Prince Regent's Bay for example) that might be found suitable; but, of late years, the fishers assert that the whales have been most plentiful towards the other shore.

We copy the foregoing from the *Shipping Gazette*, and shall rejoice to see some measure adopted to allay in future all the doubts and fears attending the non-appearance of our whaling vessels at the close of each season; more particularly as it appears likely to be of frequent occurrence. Several of the last summer's vessels* are now in the ice, the season having been unusually severe, and the closing of the ice as early. One would suppose, with so many dreadful instances of suffering and death before them, as those afforded by the previous season alone, that the ships would be stored with provisions sufficient to last them through the winter, particularly when the difficulty of supplying them is considered. We find that this precaution has been taken by the owners of the *Thames* and *Advice*, two ships from Dundee. A list of the provisions supplied to these ships will be found in the *Shipping Gazette*. We must hope that the same precaution has been adopted by the owners of the others. When or where the ships may get clear of the ice must depend on their position, and on circumstances of wind and weather, which it is impossible to foresee; and when it is considered that it admits of the range of four or five hundred miles, the probability of their being fallen in with must be uncertain.

We have received the following accounts of casks of the *William Torr*, from Captain James Ross:—

Yarmouth, 8th Nov.—The *Wisbeach* arrived here; picked up a large blubber cask, with several pieces of blubber in it, marked "William Torr," in lat. 48° 45' N., long. 38° 34' W.

Quebec, Oct. 12th.—The *Vigilance*, Spence, from Riga to this place, picked up a cask of oil marked "William Torr," in lat. 52° 40' N. long. 36° 27' W.

In page 626 of our volume for 1836, we recorded another, picked up in lat. 46° 11' N., long. 17° 30' W., on the 17th of July.

ASTRONOMICAL SOCIETY.—Professor Airy, astronomer royal, in the chair.—First meeting, session 1836-7. Several communications were made; amongst these were observations on Halley's comet, by Sir John Herschel, at the Cape, contained in a letter from Capt. Beaufort. A report from the council of the society, on a paper by Mr. Wrottesley,

* They are the *Swan* of Hull, the *Dee* of Aberdeen, the *Greville Bay* of Newcastle, the *Norfolk* of Berwick, the *Thames* and the *Advice* of Dundee, the crews of all amounting to about 300 men.

containing observations of 1,318 stars, made recently with a large telescope at the Observatory, Blackheath. Two papers by Professor Lithurd, on the constructions of Maps and planispheres, and on the hour-lines of sun-dials; the latter useful only to geometricians. A paper from the director of the Lisbon Observatory, on the correction of an error in the calculation of the obliquity of the ecliptic. A paper from Professor Struve, on double stars, &c. To such of the above-named communications which are capable of analysis, we shall return. Professor Airy offered some remarks upon certain meteors which have been observed for several years past in America, and which make their appearance regularly at this period of the year. He invited the attention of astronomers, and, indeed, all persons who had an opportunity of observing such phenomena in the night, to look out for these [*quasi* ?] transatlantic visitants.

CASE OF HARDSHIP.—A public subscription of several thousand pounds has been proposed to be raised towards Mr. Buckingham's losses in India; quickened by the threat that, if not sufficient to maintain him, he would be driven to the very dreadful necessity of "devoting the remainder of his days to useful and honourable labour! To avert so dire a calamity, it will be proposed among Mr. B.'s friends to revive the old project, and send him round the world on a voyage of discovery and commerce. He is to sail on the first of next April, and will take with him passengers, emigrants, and merchandize. First exploring the British coast, he will establish a colony of tailors at *Sheer-ness*; then offer a consignment of saddles and bridles to the inhabitants of *Ryde*; afterwards call for Mr. Ole *Bull of Cowes*, as fiddler to the crew; from thence he will dispatch a bale of *blankets* to *Friez-land*, and of *gloves* to the people of *Pau*, taking in exchange some cheap *coffee* for charitable purposes from *Chamberry*. Proceeding through the channel, he will receive a few distressed ladies at *Brideport*, on an experimental voyage to *Beaumaris*. The *late* ministry will accompany him as far as the *Ex*, and at *Ply-mouth Sound* he will take in the *substance* of his next parliamentary campaign. At the *Scilly* Islands he will try to dispose of a heavy consignment from *Paternoster Row*, and some leading establishments at the west-end of the town. He will leave the Poor Law Commissioners at their head quarters at *Flint*; thence crossing the Atlantic, he will deposit the bones of Mr. Carus Wilson at *Long Island*, and offer a cargo of *softsoap* at *Washington*. He will next despatch *Stone Masons* to the *Chipaway* country, and *Carpenters* to the *Chik-a-saws*, and he will be commissioned to get a lot of *Old Joes* exchanged at *New-Found Land*. He will supply the natives of *Chili* with *great coats*, carry *ham* and *beef* to the *Sandwich* Islands, and *broad cloths* to *Bombay*. He will then reach the North Pole by taking up his ship in an air balloon, and remaining suspended till, as the world goes round, the arctic circle is just under his feet, when he will drop into the midst of it. Coming home from the North, about next St. Swithin twelvemonths, he will bring us a little *Blue* from the Island of *Skye*, and call off the coast of *Ayrshire* for another scheme to raise the *wind*. On his arrival, the wooden guns at Jack Straw's Castle will be fired, and the town illuminated with *moonshine*.
—*Comic Almanac.*

BRISTOL INSTITUTION.—*3d Dec.*, 1836.—Two lectures have been delivered this week, at the Philosophical Institution, Park-street, by the Rev. John Williams, on the Polynesian Islands, in which he has resided for eighteen years as a missionary. Mr. Williams possesses an enlarged mind and a philanthropic spirit, combined with a love of nature and of science; and he has profitably employed his talents in developing a variety of interesting facts connected with the field in which he has been called on to labour.

Mr. W. commenced his subject with some pertinent observations, showing that science is not at variance with religion; and then proceeded, by the assistance of a large chart, to explain the geographical and relative positions of the several islands, beginning with the Marquesas, and ending with Laratoma and Mowkai—the latter discovered by himself,—the whole of which he classed under three several heads, the mountainous, hilly, and coralline, their several peculiarities of conformation being minutely described. In the former, traces of volcanic eruptions were very visible; but whether they wholly owed their existence to volcanic agency, was a problem which he (the lecturer) could not pretend to solve. It was, however, certain that the mountains had, at some time, been under water; for, at the tops of the loftiest of them, fragments of coral and other submarine products were to be found; and Mr. Stutchbury, the talented curator of the Institution, had found a perfect stratum of coral at the top of a mountain when he visited Tahiti. In speaking of the third class,—the coralline islands,—the lecturer observed that they were mostly very small, and that the soil in them, being more shallow than in the others, was incapable of sustaining the growth of trees of the dimensions to be found in those characterised as mountainous and hilly.

Having described the geological peculiarities of the several islands, the lecturer proceeded to offer some few remarks on the theories advanced as to their original formation. With respect to the coralline, the received opinion is, that they are formed by minute marine animals, which settle upon a suitable spot, from which they work and form structures of coral, until at length their labours reach the surface of the water, when pieces of stick, and such other things as may be floating upon it, attach themselves to the top of the coral, and, in process of time, soil becomes formed by the decay of vegetable matter. The lecturer combated the opinion of the rapid growth of coralline: some writers had stated that it was so rapid that islands of this character were speedily joined together; but in all his travels and observations in the Pacific Ocean he found no agency at work calculated to produce an island in any reasonable space of time. It had been stated, he said, by Captain Beechy, that the growth of coralline was about six inches in a century; consequently, it would take 5,000 years to make fifteen feet, and 50,000 or 60,000 years to form such an island as Mangiers. His (the lecturer's) opinion was, that the islands owed their origin to some up-heaving power. He had had the means of examining many native traditions, some of them embracing the history of thirty generations, and in no one of them had he found any reference to any new island: on the contrary, no visible alteration could be discovered by the oldest inhabitants.

The lecturer then proceeded to allude to the various theories as to

the materials of which coral is formed, and advanced one of his own, viz., that it is composed of carbonate of lime, and that coralline are only architects employed in its construction.

M. W. next touched upon the peculiar character of the tides. At Tahiti, and the Society Islands, the tides are the same all the year round, it being high water at noon and at midnight—the rise seldom above eighteen inches: the most remarkable feature is, that they always flow from the west and south-west, the waves coming in over the coral in an opposite direction to the trade-winds, which invariably flow from the east, the south-east, or north-east. At the Sandwich Islands, 2,000 or 3,000 miles north of Tahiti, the tides also flow at precisely the same hour, whilst three or four hundred miles to the south and south-west, they are under the influence of the moon. The regularity of the tides is a point so well established at Tahiti that the natives count their time by it, and have stakes upon the beach to denote the hour of the day.

The lecturer next proceeded to notice the two distinct races by which the islands are inhabited—the first class, a light copper-coloured race, remarkably well made, and having straight hair; and the other class having all the characteristics of perfect negroes. The former he considered to be of purely Malay origin: where the negroes came from he could not even suggest. The chiefs of the Polynesian Islands are of a very superior size; the chief of that upon which the lecturer resided being 6 feet 11 inches in height, his two brothers being of the respective heights 6 ft. 7 in. and 6 ft. 3 in. Captain Cook supposed these to be a distinct race, but such is not the case. The only way in which he could account for this superiority of size was the different manner in which they are brought up: for instance, when a young chief is born, three or four of the finest women in the island are selected to nurture him, and thus he gets a start at his birth.

The next point noticed by the lecturer was the Polynesian language, which he described as being very beautiful. One very important advantage is, that two persons may hold a conversation entirely in the dual number; it also included two pronouns which may be called the exclusive and inclusive pronouns; as, for instance, in England we say, “it is time for *us* to go,” which may mean the person speaking and some of the party, or all the party: a native would say, “it is time for *maro* (me and my party, and not others) to go,” or else, “it is time for *tarto* (all the party) to go:” and again, an English lady addressed the lecturer at a dinner party and said, “will you put your bones on the plate?”—a very equivocal expression, which might mean his bones, or the bones he had been picking: an islander would say, not *tohohi* (your bones), but *tahohi* (the bones you have been picking). Another peculiarity is, that no two consonants meet together or end a syllable or word. Although the language is one, there are eight different dialects in the different islands, which the lecturer illustrated by the pronunciation of different sentences, and the repetition of the Lord's Prayer.

The next subject touched upon was the orthography used by the missionaries, the alphabet of which consists of thirteen letters; and after relating several anecdotes, calculated to explain the intellectual capacities of the people, as well as their ready wit and honesty, he read a

translation of a legend recited by the native orators at the inauguration of their kings, the language of which was highly figurative, and in the style of the Ossian's poems. He then exhibited a specimen and drawings of the bread fruit, and thus concluded his highly amusing and instructive lecture. In reply to a question, the lecturer stated that the native chiefs intermarry with each other.

On Wednesday the rev. gentleman delivered his second lecture upon this subject. The lecturer commenced with some anecdotes further illustrative of the intellectual capacities of the natives, after which he proceeded to notice the produce of the islands, and particularly the bread and cocoa-nut trees, the fruit of the former of which supplies them with food, the trunk timber for building, or furniture, the leaves fodder for their cattle, the bark material for making cloth, and the gum with pitch: the latter tree with timber, provision, and water, ten or twelve bottles of which may be obtained from its fruit in the hottest day, when the temperature is at 90°. After explaining the ease with which a child seven years old may destroy a grove of the finest cocoa-nut trees, by breaking their last shoots, the lecturer proceeded to notice the animals of the islands, and the immense number of native rats; the introduction of the horse, goat, sheep, cat, &c., and consequent astonishment of the natives; and contradicted a statement in the *Penny Magazine*, that the vampyre bat possesses the power of taking its flight from the ground. He next alluded to the manufactures of the islands, and civil improvement of the people, and exhibited numerous specimens of cloth of different kinds (made from the bark of the bread and other trees, painted), carving, sugar, bonnets, mats, slates for writing, made of basalt, penmanship, war implements, chief's dress and cap, &c.; and stated that upwards of 3,000 children were under instruction in the islands, to which he had sent 18,000 books in the native language.

The lecturer concluded by noticing the benefits which must result to Britain from the civilisation of many islands, the savage propensities of whose inhabitants have hitherto precluded all intercourse with them; but which now, by the blessing of God, are become harbours of refuge for our fleets, and homes of comfort for our countrymen. To commerce the advantages must be equally great, as at least 150,000 of the inhabitants of those islands are now wearing and using articles of European manufacture. "If," said the lecturer, "commercial men are desirous of cutting new channels for the streams of commerce to flow through, the missionary will not be found the meanest of their agents. In one missionary settlement alone, in Africa, £60,000 worth of European produce is annually consumed; and it will be seen in the course of a few years, that the most mighty machinery which can be brought to bear upon the civil and moral interests of the world is the great missionary enterprize."

The lecture, which was interspersed with numerous interesting and amusing anecdotes, was applauded throughout; and at its conclusion, Dr. Carpenter, in the name of the audience, returned thanks to the lecturer.

The following account of the Moravian Missionaries, or, as they are better known by name, the Moravian Brethren, is from the Shipping

Gazette, in an account of a meeting held in behalf of the society lately at Chelsea :—

The church of the United Brethren (commonly called Moravians) sprang from a little flock of Christ, which had preserved the doctrine and discipline of the primitive church, during successive centuries, but was pursued by unrelenting persecution through the dark period of the middle ages. The church, under its present name, was formed about sixty years before the reformation, out of the wreck of the Bohemian church, which had escaped into Moravia after the martyrdom of John Huss. There, previously to the time of Luther, they employed the newly-invented art of printing, in disseminating the word of God in the vernacular tongue. The purity of their doctrine and discipline was fully recognised by the Reformers.

Continued and severe persecutions, often nearly to extirpation, still followed them. At length, in 1722, after the destruction, or dispersion, of above two hundred of their congregations in Moravia, their last remnant fled into Saxony, where they found a permanent asylum. This small body of exiles, scarcely exceeding six hundred persons, began as early as 1732 to promulgate the gospel to the heathen nations, and in about eight years their missionaries were sent to no less than nine distant parts of the globe, and subsequently to others. Thus did the brethren, unknown, and destitute of pecuniary resources, fearlessly lead the way in carrying the gospel of Christ to barbarous tribes ; and, actuated by the same spirit, they had continued to send forth faithful, humble, diligent labourers—men content to quit the comforts of a civilized home, and to give up their lives to the service of their Redeemer, cheerfully and perseveringly exposing themselves to the baneful influence of a tropical climate, or to the rigours of an arctic winter, receiving no pecuniary recompense for their labours, sometimes barely possessing, and sometimes destitute of, the necessaries of life. To the simplest exhibition of the doctrines of the Cross, they invariably united instruction in the useful arts of civilized life. Hence their settlements among the most savage tribes, soon appeared as “gardens of the Lord” in the midst of a wilderness, and their quiet and peaceable demeanour, combined with a strict, yet mild, exercise of their ecclesiastical discipline, had secured the esteem of the authorities under whom they had settled.

The number of their converts from the heathen already greatly exceeded the number who were in church communion with them in christian countries, and was steadily increasing. In forty-two missionary stations, 214 missionaries were employed in instructing about 48,000 converts, gathered from the Greenland, American-Indian, Esquimaux, Negro, Hottentot, and other South African nations, of whom, above 15,700 were communicants. By rigid economy, they were supported at an annual expense of about £11,000, but the brethren can seldom raise by their own efforts above a fourth part of the amount. They were few in number, and mostly poor, and were thus unable to support by their own resources such extensive missions. Distressing embarrassments had been from time to time the consequence, and they must long since have relinquished their stations, and have yielded up those christian inclosures a prey to the powers of darkness, but for the bounty of benevolent friends, chiefly in England and Scotland, by whose aid the

deficit had been made good, and whose unceasing support can alone avert future difficulties.

The progress of the missions was truly gratifying, and many fields of more extended labour were open to cultivation. Such was particularly the case in the West Indies. In the Island of Antigua alone, the brethren had above 14,000 negroes in connexion with their church; one of the congregations contained nearly 7,000 negroes, of whom more than 2,500 were communicants, a proportion by no means unusual in the brethren's mission settlements. Four other settlements were established in that island. Additional stations had recently been formed in Jamaica and Barbadoes. In Jamaica, a public-spirited proprietor, in the parish of St. Elizabeth, has recently presented to the brethren 469 acres of land, for the purpose of enabling them to form a Moravian settlement among the free negroes, the first establishment of the kind in the West Indies, but one admirably calculated to cultivate and improve both the outward and spiritual condition of the negro when emancipated. A new mission had just been commenced in Demerara. The whole number of negroes of the brethren's congregations in the West Indies and Surinam was about 42,000. Pecuniary means only were required in order to the occupation of more stations. Many invitations to instruct the negroes had been given by proprietors, and such was the desire of the gospel, that at many stations double congregations generally assemble. A separate fund for forming new establishments in the West Indies, had been opened, in order that that desirable object might not be so pursued as to involve the missions generally in difficulty. A fund also existed for erecting school-rooms, and providing teachers and books for the education of negro children, for which the call was more than ever urgent in all the islands in which the brethren were stationed. It had been ascertained that twenty new school-houses were immediately required, to erect which £5,550 will be requisite. His Majesty's Government had granted £1,500, out of the sum voted by parliament towards this object, provided the brethren would contribute £750 more. An appeal to the Christian public had been issued in order to obtain, if possible, not only the smaller sum, but the whole amount not provided for by the grant, namely, £4,050, which will convey the blessings of Christian education to about 4,500 Negro children. In Surinam, a society had recently been formed by the inhabitants, under the sanction of the government, for the religious instruction of the negroes of the colony, through the brethren's missionaries, who had extensively visited the interior. In South Africa, Enon, Elim, and the Leper Hospital, which had been more recently occupied by the missionaries, were, together with the two older settlements, in a flourishing condition. The new mission among the Tambookies, a tribe bordering on that of the Caffres, was in a state of gratifying progress, and the whole of the settlements had been wonderfully preserved during the late calamitous incursion of the Caffres. Several of the Tambookie nation, and some of the Caffres and Mantatees, had been added to the church of Christ.

In Greenland, the settlement last established, called Fredericksthal, now numbered about 400 resident Greenlanders, and above 320 of the number had been baptized. The new northernmost settlement on the coast of Labrador, called Hebron, was also established, and, although the

number of its inhabitants was small, and it might for a season try the faith of the missionaries, it was hoped it will in time be favoured, like the more southern stations on the coast, to be another Bethel on that ice-bound shore.

GENERAL POST-OFFICE—(Dec. 26th.)				British Postage of a single let- ter to or from.	
STATEMENT OF THE PACKET BOATS.					
Stations.	Destinations.	Mails made up in London.	When due.	Postage.	
				Lond.	Falm.
Dover	Calais	Daily	Daily	2s. 6d.	1s. 7d.
	Ostend	M Tu Th & Fri	Su M Th & Fr	2 7	1 8
Thames ..	Holland	Tuesday & Fri	Mon & Thurs	2 2	2 2
	Hambro' & Swn.	Tuesday & Fri	Tuesday & Sat	2 10	1 11
Holyhead ..	Dublin	Daily	Daily		
Milford	Waterford	Daily	Daily	3 2	2 3
Port Patrick	Donaghadee ..	Daily	Daily		
Weymouth ..	Guernsey & Jer.	Tuesday & Fri	Mon & Thurs	2 7	1 8
BRITISH POSTAGE OF A SINGLE LETTER—TO OR FROM				3 6	2 7
				2 2	1 3
		s. d.	Italy, Turkey, &c., via s. d.		
London and France....		0 10	France	2 2	1 3
Switzerland, via France		1 2	Belgium	3 0	2 1
Germany, ditto		1 4	Germany, Denmark, Swe-	3 0	2 1
Spain and Portugal, do.		1 7	den, Russia, &c.	2 2	1 3
An inland postage to London must also be paid on letters from the country going to the Continent.				3 0	2 1

FALMOUTH STATION.		Last Packets sailed.	Next Packets due.
Lisbon	} Every Saturday	H.M.B. Lyra, Dec. 21	Camden, Dec. 27.
Madeira			
Spain	} First Day of every month	H.M.S. Firefly, Dec. 8	H.M.S. Hermes, Dec. 26
Gibraltar			
{ Malta, Greece, (
{ Corfu, Egypt, and (
India	} First Tuesday in each month	H.M.B. Spey, Dec. 14	{ H.M.B. Express, Jan. 30.
Madeira			
Brazil and B. Ayres	First Wednes. do.	H.M.B. Opossum, Dec. 10	H.M.B. Star, Jan. 7.
America	} First Day in every month	Lord Melville, Dec. 8	{ H.M.B. Nightingale, Dec. 26.
{ Jamaica, Leewrd. (
{ Islands, & Hayti (
La Guayra	15th ditto . .	H.M.B. Swift, Dec. 17	H.M.B. Goldfinch, [Jan. 21.
Mexico & Havannah	} 15th ditto . .	H.M.B. Reindeer, Dec. 17	H.M.B. Skylark, Jan. 9.
{ Jamaica, Leewrd. (
{ Islands, & Hayti (
Carthagena			

AMERICA AND WEST INDIES.—His Majesty's Brigs Mutine, Sheldrake, Linnet, Pandora, and Delight, preparing for service.

THE RETURN OF THE PACKETS IS CALCULATED THUS: To and from Jamaica, 12 weeks; America, 9; Leeward Islands, 12; Malta, 53 days; Brazil, 20 weeks; Mexico, 18.

From August to January, inclusive, the Packet touches at Pernambuco and Bahia, on her outward passage to Rio Janeiro, and the other six months on her homeward.

A HISTORICAL ACCOUNT OF THE CIRCUMNAVIGATION OF THE GLOBE, *and the Progress of Discovery in the Pacific Ocean.* Edinburgh, Oliver & Boyd.—London, Simpkin and Marshall.

This little volume (one of the Edinburgh Cabinet Library,) commences with the voyage of Magellan, and ends with the last of Cook. In his account of the intermediate voyages, the author has very properly introduced the later discoveries of modern navigators, by which means he has succeeded in producing in a condensed, and very compact form, a useful and highly interesting volume. We particularly recommend it to our young naval friends.

REID'S COASTER'S ASSISTANT *and Seaman's New Guide.* Seventh Edition. Oliver and Boyd, Edinburgh; Blackford and Imray London.

The authors of the Scaman's Guide tell us "in preparing the present edition for the press, we beg to acknowledge the valuable assistance we have received from the Nautical Magazine, by which we are enabled (by means of supplements) to keep the work correct." We hope they will not fail to make use of Captain Johnson's description of the Farn Islands, just published by the Admiralty. The "Coaster's Assistant" (a most unassuming title, certainly,) includes directions for all the coasts of Great Britain and Ireland, the North Sea, and the whole Baltic Navigation. It is a work which no intelligent seaman would be without, who is desirous of possessing every piece of information which he can obtain. A light on the island of Glosholm, the notice of which will be found in our present number.

THE LIFE OF NELSON, *revised and illustrated with Original Anecdotes and Notes.* By the Old Sailor. F Shoberl, jun., Leicester Square.

This is just such a history of Nelson's life as we should place in the hands of a youth destined for the navy. The narrative is interspersed with some of those admirable effusions of the Hero's mind that appeared in his correspondence, and which, with the stirring scenes of his life, added to the style of the author, will emulate the young naval *aspirant* to similar deeds of glory in his country's cause. It is neither costly nor deficient of proper embellishment, but like the youth to which we recommend it, is well cut out for service.

NEW CHARTS.

PORTUGALETE AND BILBAO, *with the Channel of the River Nervion.* By Mr. Henry Thompson, Second Master of H.M.S. *Saracen.* Lieut. Commander T. P. Le Hardy. 1836.

This plan is on the scale of about five inches to the nautic mile, which allows of the whole of Mr. Thompson's survey being contained on half-a-sheet of double elephant paper. The survey extends from the mouth of the river to Bilbao, and gives ample details of soundings, and the topography of the banks. On the whole, it reflects great credit, on Mr. Thompson, and is a useful and very valuable production.

MOUTH OF THE RIVER DEMERARA. *By Commander Richard Owen, of H.M.S. Thunder.* 1836.

A sheet of half-double elephant paper contains the mouth of the river on the scale of an inch and a quarter to the mile, shewing the soundings to about nine miles from it.

The whole of the river, as far up as the Melali Falls, is likewise on the same sheet on a reduced scale as well as a neatly executed view of the entrance. It is one of Com. Owen's most useful productions, and will be invaluable to ships visiting Demerara.

Records of Wrecks.

THE following particulars from the New York papers of the loss of the Bristol, one of the Liverpool and New York packets, with nearly seventy lives, are all that are known of this melancholy event:—

The Bristol, Captain M'Known, from Liverpool for New York, was at 9 P.M. on Sunday night, the 20th ult., with lanterns out, as signal for a pilot, at which time a gale had just commenced. No pilots, however, were out, and the ship had to stand off. At a quarter before 4 A.M. on Monday morning, the ship struck on Far Rockaway, about five miles from New York, and, distressing to relate, at daylight, although within half a mile of the shore, no relief could be afforded to the distressed passengers and crew, who were clinging to the shrouds. All day they remained in this situation, the surf being so high that none could approach her. At about 11 o'clock P.M. the sea abated, and boats went to her relief, and succeeded in taking off the captain, a portion of the crew, and some of the cabin and steerage passengers—above forty persons in all. We are, however, distressed to state, that two seamen, the cook and steward, with a Mr. Donnelly, two Messrs. Carlton, cabin passengers, and about sixty steerage passengers, perished. All were rescued that remained on the wreck when the boats reached her; but during the day the ship went to pieces, and on Tuesday morning the stern-post only was left.

Another paper says: We (a New York paper) are at length enabled to state, with some degree of certainty, the number of lives lost and saved on board the Bristol. So far as we can learn, forty persons only are saved, and more than sixty lost. Several bodies came on shore, and were buried yesterday, and during the night previous. The spars and upper decks are entirely gone, and the beach strewed with fragments. The heavy part of the cargo keeps the bottom of the ship stationary on the other bar; efforts will be made to recover part of the iron, copper, &c. A few packages of dry goods and crates, and twenty puncheons of whiskey, had washed ashore, and would be sent round to the city. The American gives the following particulars of the disaster. The pirates alluded to upon the shore of Rockaway deserve a worse fate than that which has befallen the unfortunate beings who have lost their lives and their all.

Among the passengers lost, was Mr. Donnelly, the son-in-law of the late Michael Hogan, of this city; and he died a victim to his own philanthropy. Mrs. Hogan, and two daughters; Mrs. Donnelly, her nurse, and children, were saved, and, with other women and children, landed by the first. Twice the boats returned to the wreck, and twice Mr. Donnelly yielded his place to others. In the third attempt to go

off, the boats were swamped, and the crew became discouraged, and would not go back; meantime the storm increased, and Mr. Donnelly, with the two Mr. Carltons, took to the foremast, where the crew and many steerage passengers had sought temporary safety. Unhappily, this mast soon went by the board, and of about twenty persons on it, only one, Mr. Briscoe, a cabin-passenger, was saved; and he, by catching at the bowsprit rigging, whence he was taken by the boats. The captain and other cabin and steerage passengers were on the mizen-mast, and when that fell he and others lashed themselves to the taffrail, where for hours the sea broke over them. Some twenty of the steerage passengers, principally women and children, perished almost immediately after the ship struck. Even before they could leave their berths the ship bilged, filled, and all below were drowned. Not a groan was heard to denote the catastrophe—so awfully sudden was it. And to those whom the waves and the mercy of God had spared, what was the conduct of their brother man? Their persons, their trunks, were searched and robbed by the fiends who gathered round the wreck. One hapless being, thrown senseless, but yet alive, on the shore, and having about him his all, 10 sovereigns, was plundered of them! Will not the marshal of the district feel it his duty to repair to the scene of disaster, and seek to ferret out the evil doer? Among other things Mrs. Donnelly was robbed of a valuable case of jewellery, some of which were publicly paraded, as we are told, by an individual who can be traced. Shall they not be traced? Shall there not be a public meeting to speak decisively as to the pilot system? Will the insurance office slumber on?

Yesterday afternoon one of the unfortunate passengers of the ship Bristol, was picked up on Long Island, almost in a state of nudity. He was taken to the alms-house, when it was found that he was both deaf and dumb. He had four sovereigns and some English silver coin in his possession.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1836.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
1 Betty		Stockholm	London	Ameland	21 Oct.	
2 Blessing		London	Shields	Yarmouth		
3 Brunswick		London	Petersburgh	Isle Oesel		
4 Chester		Liverpool	New York	47° N. 43° W.	1 Oct.	Abandoned.
5 Dawson				46½° N. 56½° W.	19 Oct.	Abandoned.
6 Dove		Petersburgh	London	Shields	23 Nov.	
7 Erin		Wicklow		Off Bray	18 Oct.	Crew saved.
8 Experiment		Drogheda	Newport	Breaksea P.	21 Nov.	
9 Fame			St. Ubes	Off Start	30 Oct.	Foundered—crew saved.
10 Friend's Adventure		Glasgow	Newcastle	Tweed	22 Oct.	Stranded.
11 Friend-ship		St. Domingo		Conway Bar	31 Oct.	Eight saved.
12 Lady Helen Marr		Of Poole		Scatterie Isle	31 Aug.	Crew saved.
13 Leander		Of Sunderland.	Yarmouth	Cross Island	9 Nov.	Crew saved.
14 Louisa		Nicholls	Of Plymouth	45° N. 38½° W.	13 Oct.	Abandoned.
15 Marianne				Jersey	15 Oct.	
16 Mary	Williams	Llanely	Waterford	At sea	1 Oct.	Supposed foundered.
17 Marva	Tucker	Hull	Petersburgh	At sea	27 Oct.	Run down.
18 Minerva		Gibraltar		Scilly	14 Oct.	One saved.
19 Mulgrave		Ireland		Quebec	21 Oct.	
20 Plymouth	Gibson, of &	from Dumfries	Whitehaven	Newfoundland	21 Oct.	
21 Zion Hill		London	Newport	C. Cumberland	28 Oct.	All lost
22 Sisters	Of Pethead.	Aberdeen		Middle Sand	23 Nov.	Cargo part saved.
23 Thomas and Hannah		Newport	Exeter	Off Padstow	6 Oct.	Crew saved.
24 Thomas and Isabella	Of Newcastle			Holy Island	17 Oct.	Crew saved—run foul of.
25 Unity		Quebec		Villala Channel	13 Oct.	A rock.
26 Victory					1 Oct.	
27 Waterlily		London	Limerick	Shannon	1 Nov.	
28 Waterloo		Wisbeach	Goole	Wisbeach	24 Oct.	Blown up.
29 William and Ann		Limerick	London	Off Scaton	13 Oct.	Foundered.
30 Minerva	Mathews	Bideford	Carmarthen	Off Scaton	14 Oct.	1 lost. Of Cardigan.
				Carmarthen B.	12 Oct.	Of Bideford. All lost.

PROMOTIONS.

Captains.—W. P. Hamilton.
Commanders.—J. E. Parlby.
Lieutenants.—H. M. Tylden; J. A. Mends; C. Jackson.

APPOINTMENTS.

Captains.—W. B. Mends to *Talavera*: T. B. Sullivan, C. B. to *Stag*: D. Pring to *Inconstant*: L. Davies, C. B. to *Dido*: H. B. Martin to *Carysfort*.

Commanders.—P. Williams, *Greenwich out-pension*: J. Monday to *Stag*.

Lieutenants.—Hon. E. Curzon to command *Savage*: Lord Henry Russell to *Hastings*: H. J. Worth to *Stag*: J. M. Potbury to command *Flamer*: George Davis to command *Tartar*, *Rev. Cutt.*: J. Woodriffe to *Coast Guard*: W. James to command *Echo*, (*St. V.*): C. J. Williamson, A. Leathart to *Wolverine*: W. Loring to *Carysfort*: R. Inman to *Samarang*: A. Fairman to *Wolverine*: J. Durban to command *Griffon*: J. G. Crosbie, T. L. Massie to *Carysfort*: E. Owen to command *Carron*: W. Arlett to command *Confiance*: J. M. Waugh to command *Blazer*: W. Reid to *Clio*, vice Scott to *Rodney*: J. Rawstorne to *Coast Guard*, *Sussex*: T. Hare, P. Barnes to *Coast Guard*: C. R. Ogilvy, Flag Lieut. to *Rear-Admiral Sir F. Maitland*: W. M'Ilwaine to command *Volcano*: F. Blood, H. D. Forster to *Stag*: Brooman to *Coast-Guard*: J. G. Strong Bathurst to *Coast Guard*.—The following officers have been appointed government agents for emigration:—*Liverpool*, Lieut. Low, R.N.; *Bristol*, Lieut. Henry, R.N.; *Dublin*, Lieut. Hodder, R.N.; *Cork*, Lieut. Shuttleworth, R.N.; *Belfast*, Lieut. Lynch, R.N.; *Limerick*, Lieut. Forest, R.N.; *Greenock*, Lieut. Hemans, R.N.; *London Agent*, General Colonial-office, Mr. J. D. Pinnock.—*Ministerial Paper*

Masters.—James Brown to *Stag*: J. G. Northcote to *Talavera*: J. W. Bateman to *Wolverine*: J. Pearce to *Princess Charlotte*: J. C. Rutter, acting to *Carysfort*.

Mates.—R. St. Aubyn to *Dido*: F. Freeling (Coll.) to *Excellent*: H. B. Williams, F. R. J. Balfour, (Coll.) to *Stag*: F. Bouchier to *Samarang*: H. T. Vaughan to *Wolverine*: C. W. Hutchinson to *Excellent*: F. Murray to *Britannia*: A. Hamilton, (Coll.) to *Serpent*: W. Douglas, (Coll.) to *Satellite*: H. T. Le Visconte to *Excellent*: H. Stokes to *Dido*: T. Maitland to *Samarang*: F. Denison to *Inconstant*: C. Taylor to *Inconstant*: J. Smith to *Excellent*: T. Douglas to *Satellite*: G. L. Hoblyn, R. Robinson to *Volcano*.

Second Masters.—T. Goss to *Stag*: J. Hall to *Talavera*: N. B. Pearce to *Savage*: E. Williams to *Victory*: T. Cotter to *Flamer*: P. Loney to *Carysfort*: R. C. Allen to *Volcano*.

Pursers.—J. Taylor to *Wolverine*: H. K. Bamber to *Carysfort*: J. B. Sargent to *Talavera*.

Master's Assistants.—H. Norway to *Stag*: G. J. Hodges to *Volcano*.

Midshipmen.—O. Bentall, H. Key, C. St. John, F. Molesworth, P. Butler, F. Belgrave to *Samarang*: L. C. H. Tonge to *Inconstant*: R. R. Quin to *Conway*: C. Taylor to *Inconstant*: T. Miller to *Pembroke*: T. G. Giles to *Samarang*: C. Sullivan to *Wolverine*.

Surgeons.—H. Trevanor to *Royal Adelaide*: J. Kittle to *Wolverine*: D. Wise to *Samarang*: W. Ekin to *Conway*: J. Wilson to *Talavera*: R. Douglas to *Stag*.

Assistant Surgeons.—W. T. Rogers to *Asia*: J. Livesay, M.D. to *Thunderer*: D. Burns to *Carysfort*: R. W. Clarke to *Opossum*: J. Thompson to *Britannia*: T. Hore to *Royal Adelaide*: A. D. Bain to *Wolverine*: H. Trevan to *Royal Adelaide*: J. Brennan to *Volcano*: J. Lambert to *Stag*: J. W. Clarke to *Opossum*.

Chaplains.—Rev. E. S. Phelps to *Stag*: Rev. W. Payne to *Talavera*.

Schoolmasters.—R. J. Tucker to *Stag*.

Volunteers, 1st Class.—J. E. Parish (Coll.), T. D. Sullivan to *Stag*: T. Webster, (Coll.) to *Carysfort*: W. Crowder to *Samarang*: T. Glyn (Coll.) to *Conway*.

Clerks.—C. Turner to *Stag*: W. P. O. Brien (in charge) to *Savage*: J. Heatham (in charge) to *Blazer*: T. G. Mitchell to *Bellcrophon*: C. Blyth to *Fly*: T. Westwood (in charge) to *Volcano*: J. Conquer (in charge) to *Confiance*.

Boatswain.—J. Stocker to *Stag*.

Carpenters.—J. Blake to *Stag*.

Gunners.—P. Freeman to *Stag*: W. Brown to *Carysfort*: E. Berry to *Samarang*.

Births.

At Bideford, Devon, on the 1st Dec., the Lady of Commander Robert Tunstall Haverfield, R.N., of a son, being their seventh child.

On the 3rd Dec., in East-street, Stonehouse. Mrs. Archer, wife of Mr. Archer, Captain's Clerk of the Cornwallis, of a daughter.

On the 22nd Nov., the lady of Lieut. Sloby, R.N., of a son.

On the 9th Dec., at Rock Mills Lodge, Ireland, the wife of N. B. Lash, Esq., Purser, R.N., of a son.

On the 20th Nov., at Sion-hill, Bath, the lady of Capt. George Gosling, R.N., of a son.

On the 7th Dec., at the Royal Naval College, the lady of Lieut. E. Malone, R.N., of a son.

On the 19th Nov., at Woolwich, the lady of George Wright, Esq., of his Majesty's steamer, Comet, of a daughter.

On the 20th Nov., at Malta, the lady of Capt. Martin, C.B., of his Majesty's ship, Caledonia, of a daughter.

On the 27th of August, at the Presidency House, Santa Manra, the lady of Capt. Galloway, Resident of the Island, of a son. This lady is daughter of Capt. Coffin, R.N., formerly of Stonehouse.

On the 7th Dec., in this town, the lady of Capt. W. Broughton, commanding his Majesty's ship Samarang, of a daughter.

At Budleigh Salterton, on the 5th Dec., the lady of Lieut. Clay, R.N., of a daughter.

On the 15th Dec., at Wickham, Canterbury, the lady of J. H. Boteler, Esq., Commander, R.N., of a son.

On the 8th Dec., the lady of Lieut. George Williamson, R.N., of the Semaphore Signal Station, at Portsdown-hill, of a son.

On the 26th Nov., the lady of C. K. Sivewright, Esq., of Hampton House, St. Mary Church, Devon, of a daughter.

On October 2nd, at Chester Vale, Port Royal Mountains, the lady of Capt. Henry Kent, R.N., and Stipendiary Magistrate, of a daughter.

On the 26th Nov., at Budleigh Salterton, the lady of Capt. W. Cheselden Brown, R.N., of a still born daughter.

Marriages.

On the 8th of Dec., at St. George's Church, Stonehouse, Robert Fitzroy, Capt. in the Royal Navy, youngest son of the late General Lord Fitzroy, to Mary Henrietta, second daughter of Major-General J. O'Brien.

At St. Bordeaux, by the Rev. Christopher Gibson, M.A., Herbert Mends Gibson, Esq., Solicitor, of Plymouth, to

Elizabeth, second daughter of the late Lieut. William Taylor, R.N., of Greenwich Hospital.

At Frankfort, Capt. Rowland Mainwaring, R.N., to Mlle. Laure de Chevillard, daughter of Col. de Chevillard, in the service of Napoleon Buonaparte.

On the 22nd Nov., at Portsmouth, by the Rev. J. Lukin, Mortimer R. S. Whitmore, Esq., Royal Fusiliers, to Cecilia, daughter of the Hon. Capt. Byng, R.N.

At Berry Pomeroy, Edward Luscomb, Esq., R.N., to Emily, relict of the late Charles Murly, Esq.

In Edinburgh, H. Dundas, Esq., Capt. R.N., to Robina, youngest daughter of the late Sir R. Dundas, of Beechwood and Dunira, Bart.

Deaths.

At Greenhithe, Captain T. Hill, R.N., aged 93 years.

At Stoke, Plymouth, James Murray, Esq., Master, R.N., aged 85 years.

At Falmouth, in his 89th year, John Henco, Esq., Commander, R.N., a gentleman universally esteemed.

At Holywood, Lieut. Edward Heron, R.N., (1806,) aged 56 years.

At Ramsgate, Mr. Richard Kent, Purser, R.N.

On the 28th Nov., Cootie Carroll Nelson, Esq., Lieutenant R.N., youngest son of Lieut.-General Nelson, St. Aubyn-street.

Lately, Mr. J. W. Langstaff, Surgeon, R.N.

On the 17th Dec., at Witney, Oxon, of apoplexy, Joseph B. Sheppard, Surgeon, R.N. (1806.)

At Shirley, on the 11th Dec., Mary, the wife of Lieut. M. C. Forster, R.N., and daughter of Sir Joseph and Lady Harriet Hoare, Bart.

On the 23rd Dec., at Ripley Castle, Lady Barrie, wife of Capt. Sir Roger Barrie, R.N., aged 43.

At Ashford, in Kent, Mrs. Jenkins, widow of the late Lieut. Jenkins, of the Queen's Royals, and daughter of the late Capt. Jewers, R.N.

In Westminster, of consumption, aged 23, Richard Thomas, eldest son of Lieut. Hodges, R.N.

Dec. 11th, at Bruton, Frances, the wife of Capt. George Henderson, R.N., and daughter of Edmund Walcott, Sympson, of Winkton, Hants.

At Kivernells, near Lymington, Hants, Elizabeth, wife of Lieut.-General Farmer, R.M., and mother of Sir Wm. Symons, Surveyor of the Navy, in her 82nd year.

On the 1st Dec., Sarah, the wife of J. Hopper, Esq., Purser, R.N., St. Alban's-terrace, Kennington, aged 53.

At Fowey, the infant daughter of Capt. John Willcocks, of the sloop "Triton."

At Magheralf, Mr. John Kagan, Assistant Surgeon, R.N., formerly of the Cygnet Packet.

On Nov. 22nd, in Dublin, Anne Elizabeth, daughter of Capt. Rawnsley, R.N.

At Larch Hill, Moffat, N.B., 24th ult., Anne, wife of Capt. Charles Hope, R.N., aged 32.

At Sidmouth, in the 81st year of his age, Capt. Thomas Philip Durell, R.N., the last of that distinguished name which

has graced the Navy for the last century. His long life was marked by many interesting achievements of professional service, and as richly gemmed with actions which evinced the very best of human feelings, whilst their ever ready exertions secured him the veneration of all who had the happiness of his acquaintance.

On the 4th Dec., in her 81st year, Elizabeth, daughter of W. Stiles, Esq., Commissioner of H. M. Customs at Hull, and first cousin to the late Admiral Stiles.

METEOROLOGICAL REGISTER,

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

NOVEMBER, 1836.													
Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	Tu.	In. Dec. 30.08	In. Dec. 30.00	35	40	28	41	S.W.	S.W.	1	2	O.	Od (3)
2	W.	29.93	29.89	49	53	38	54	S.W.	S.W.	1	1	O.	Od (3)
3	Th.	29.86	29.69	46	51	42	52	S.W.	S.W.	2	5	O.	Bcp (3)
4	F.	29.57	29.43	45	45	40	46	S.W.	S.W.	4	4	Og.	Ogr (3)
5	S.	29.13	29.23	44	46	41	46	S.W.	W.	5	5	Bc.	Bc.
6	Su.	29.46	29.46	35	41	31	43	W.	W.	5	5	Bc.	Bcp (3)
7	M.	29.62	29.70	33	41	30	42	S.W.	W.	3	4	Bn.	Bn.
8	Tu.	29.99	30.05	32	39	29	39	S.W.	S.W.	3	3	B.	B.
9	W.	30.01	29.93	47	51	34	52	S.	S.W.	3	4	Or (1)	Or (4)
10	Th.	29.62	29.62	51	53	46	54	S.	S.	3	4	Or (1)	Qp (3)
11	F.	29.39	29.41	51	49	41	51	S.E.	S.E.	3	2	Or (1) p (2)	O.
12	S.	29.82	29.86	40	46	36	47	S.W.	S.W.	2	2	F.	Bcm.
13	Su.	29.70	29.65	52	54	43	56	S.W.	S.W.	5	6	Qor (2)	Qor (3 (4)
14	M.	29.63	29.66	40	44	39	46	S.W.	S.W.	1	2	B.	B.
15	Tu.	29.99	30.02	36	45	33	45	S.W.	S.W.	3	3	Bc.	O.
16	W.	29.95	29.97	47	51	41	52	S.W.	S.W.	3	5	O.	Bc.
17	Th.	29.46	29.41	46	45	44	47	S.W.	S.W.	3	3	O.	Bcp (4)
18	F.	29.09	29.15	37	42	37	44	W.	W.	4	5	Bcm.	Bcm.
19	S.	29.23	29.17	33	40	31	42	S.W.	N.	4	7	B.	Qor (4)
20	Su.	29.77	29.88	36	41	34	42	N.	N.	3	3	B.	B.
21	M.	30.11	30.05	32	34	31	39	S.W.	S.W.	1	1	F.	Od (4)
22	Tu.	29.94	29.90	37	39	33	50	N.W.	N.	1	2	Cf.	Cfr (4)
23	W.	29.26	29.32	44	45	38	45	S.W.	W.	7	8	Qbc.	Qbc.
24	Th.	29.46	29.49	37	41	34	43	W.	N.W.	5	6	Qb.	Qbc.
25	F.	29.73	29.72	33	34	28	39	N.W.	S.	3	2	B.	Or (4)
26	S.	29.36	29.27	39	45	32	52	S.E.	S.E.	1	2	Ofd (2)	Ofd (3) r (4)
27	Su.	29.51	29.55	50	51	48	53	S.W.	S.W.	4	5	O.	Qod (4)
28	M.	29.28	29.29	54	56	50	58	S.W.	S.W.	9	10	Oqp (2)	Oqp (3)
29	Tu.	28.95	29.24	58	49	52	59	S.W.	W.	11	11½	Oqr (2)	Oq.
30	W.	29.50	29.47	46	47	45	48	S.W.	S.W.	1	2	Or (1)	F r (3)

NOVEMBER—Mean height of the Barometer=29.615 inches; Mean Temperature=42.6 degrees; Depth of Rain fallen=2.25 inches.

On the 29th day, from 10 A.M. to 1 P.M., it blew a perfect hurricane.

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

ORIGINAL PAPERS.

FEBRUARY, 1837.

ON THE UTILITY OF RECORDING OBSERVATIONS ON THE PHENOMENA OF NATURE, AND PARTICULARLY ON THE WINDS.

THE isolated position of the individual who traverses the wide ocean, offers peculiar advantages for observation and reflection on the phenomena of nature. If his mind should happily be imbued with the love of science, he will find opportunities enough for the employment of his talents, and the exercise of his reasoning faculty; and if his modesty, or a natural distrust of his own qualifications, should not overpower his desire of aiding, even in the smallest degree, the great and important duty—attached to no particular race or class of men—of searching for, and if possible arriving at, truth, he will assuredly find an ample field laid open for his inspection, go wherever he may. It will be admitted, perhaps, that among the various phenomena which may attract his attention, those of the winds in general, and *particularly* those storms denominated hurricanes, will be found not least intricate or interesting among the wonders of nature. Nevertheless, these considerations should rather stimulate than discourage him, in his endeavours to search out causes from their effects. To arrive, if possible, at just notions of their origin, and modes of operation, are points of the greatest importance to the mariner; they should therefore attract his especial attention, and occupy his mature thoughts.

Philosophers will no doubt readily acknowledge, that from the close observations of intelligent voyagers in different parts of the world, and in every season, a fund of information may be obtained which would improve our present imperfect knowledge of meteorology. And we do not see why the opinions of experienced and careful observers should not be encouraged—*malgré* the *taboo* of the “gifted!”—for, if these should lead to no other benefit than that of exercising the reasoning faculty in the individual who forms them, they will have done a *positive good*; and where even these are erroneous, they must fall harmless; for, as mere opinions, they cannot possibly mislead.

Happily, the British *savans* of the present day seem to be far above such narrow-minded intellectual monopoly, for they not only enlighten us by their printed works on all branches of philosophy, but are at the pains of travelling the country periodically, not only to instruct, but also to invite the minor satellites to contribute, in the best manner they are able, facts and opinions towards the advancement of truth. To their more comprehensive minds, indeed, is left the labour of clearing away the dross from the ore. Yet, if among the whole fund of information thus obtained, but one *little spark* shall arise to *throw light* upon any of the obscure spots in the paths of science, the solicitude of the august body* will not have been excited in vain.

*The British Association.

Who that has traversed the ocean but must remember the wind shifting from point to point, and gradually breaking the ship from her course, until her head has been thrown so far out of it as obliged the commander to tack her? But who recollects to have heard a remark made at the time that the wind had only *apparently* shifted—that instead of veering from point to point, it was steadily performing a gyration—and in cases where the ship *comes up* again to her former course, merely oscillations? There is no doubt but that the aërial fluid in motion often follows these minor curves, as well as those in the vast scale.

Again, how familiar are the words to the seaman's ear, "the ship is taken flat aback;" and who has not watched a consort at a distance, upon such an occasion, still holding her course, unaffected by the change, until she has arrived at the position of his own vessel when assailed by the *shift*? Yet, who ever heard the *doubt* expressed of the wind not having shifted at all? That the ship had merely passed from one stratum of air in motion, into another having a different direction?

As a case in point, we may state, that once, between the Madeiras and the Bermudas, we experienced a change in the direction of the wind during a strong gale to a diametrically opposite point, *in an instant*. This has happened no doubt to many seamen, and may appear to some an occurrence devoid of interest. But there was not in reality any *veering* of the wind; we had merely quitted one stratum of air flowing from the north, and had entered another coming from the south; and the heavy sea almost immediately after the change, uniformly following the course of the new vein of wind we had entered, was ample proof of this.

I regret that there was not another vessel in company, for had there been, we should have presented the unusual spectacle of two ships on opposite tacks with their heads the same way! Changes of wind are, as all seamen know, often gradual, preceded by light airs, or calms, and sometimes by squalls. In these cases, atmospheric disarrangement must have been going on within the range of the horizon for some time; but in the instance given above, the arrangement seems to have been previously regulated, as each current of air, at the time we quitted one and entered the other, was pursuing its blustering course, *side by side*, without contention! In the vicinity of the West India isles, phenomena of this sort are not unfrequent; we have indeed noticed them frequently.

Horizontal strata of atmosphere have often been observed to move in opposite directions—a phenomenon which is distinctly made visible by the movements of the clouds, as well as by volcanic smoke, and brought home to our conviction by the fall of dust emitted by active craters. The recent eruption of a volcano in Guatemala, to leeward of Jamaica, fully illustrates the fact. In February, 1835, the volcano threw an immense quantity of fine powder, which, from its extreme lightness, ascended until it reached the region of the streams of superior air moving in a direction contrary to the trade-wind. From some cause, (humidity perhaps,) as it was borne to the north-eastward, its specific gravity must have become greater than that of the air which had supported it up thus far, as it descended upon the

island of Jamaica and the sea around, covering the fields, the houses, and the shipping in different parts.

It is not important to remark, that the above-mentioned interesting circumstance not only confirms the theory of two currents of air moving in opposite directions, but affords us a subject for discussion and elucidation.

One material point we cannot correctly arrive at, is the line of demarcation of the two currents. It is not, however, likely that the volcanic mountain spoken of is of sufficient elevation to reach the upper current, and to be above the influence of the lower one.

It is clear that the ascent of the volcanic dust was not interrupted by the lower current or trade-wind, which would seem to involve a question of its blowing home to this part of the continental coast, or, at all events, reaching across the land to the Pacific Ocean. Upon a hasty view of the subject, without local knowledge, or reference to books, we should very naturally consider that the north-east trade-wind did not reach the site of the volcano, otherwise the dust would have been carried away before it into the Pacific, and not, as it really was, into the Caribbean Sea, in quite a contrary direction.

It appears that the general trade-wind usually prevails upon this coast in February, subject to occasional interruption from *norths*; but whether continuing its course entirely across, we do not know; the probability is, however, from the spinal range of mountains, that it does not. South-west winds are sometimes felt there, and are continuous thence to Jamaica; but without admitting the agency of a lower vein of wind from that quarter in the transportation of the dust to the north-eastward, the circumstance may be satisfactorily accounted for upon the principle of repulsion, as experience has shewn, that the prevailing wind at the island of St. Vincent does not interfere with the scene of operation; in fact, that although a strong breeze may be blowing without, yet, within the sphere of circumvolving vapour, the air can have no other than a vertical movement. The ascent of the dust after it had lost the effect of the power of emission, would be a consequence of its extreme lightness from calcination; like that of the continental volcano, this dust was borne away to the north-east.

If we have here succeeded in pointing out the utility of voyagers committing their observations to paper, we shall have attained our desire.

ARGO.

COMPARATIVE MERITS OF THE OUTER AND INNER ROUTES TO TORRES STRAITS.

To the Editor of the Nautical Magazine.

SIR,—The navigation of Torres Straits is a subject which has already engaged the attention, and drawn forth the remarks of several persons whose valuable information has proved eminently beneficial. But, considering the peculiar circumstances attending the navigation of that region, and the annually increasing number of our ships proceeding by that route, I trust that the following remarks from one who for more than twenty-five years has been practically conversant with the

ocean in many regions, may not be deemed inappropriate, especially as they are the result of personal observation and deliberate reflection.

Bombay, 20th July, 1836.

I remain, &c.,

THOS. ROBSON.

MUCH diversity of opinion exists as to the merits of the two passages to Torres Straits, namely, the inner route by Break-sea Spit and the coast, and the outer passage by the Barrier Reef. Some persons strenuously advocate the superior advantages of the inner passage, while, on the other hand, observation leads us to remark that, in point of fact, the great majority of navigators abandon this for the outer passage by the Barrier.

The advantages of the inner passage are—it has been fully and ably surveyed; it is well delineated in excellent charts; sailing directions for its whole length are published; entrance to this passage is effected without difficulty, or intricacy round Break-sea Spit; that extremity of the strait, under favourable circumstances, may be sailed for a considerable distance during the night, and anchorage is attainable at any spot where it may be requisite to bring up. Against these, it is common to balance the disadvantages of such protracted straits navigation, the increased distance of full seven hundred miles, through which a ship is kept entangled amongst the reefs, while by the other route she would be sailing on an open sea; the labours of so frequently anchoring, and the loss of time.

The advantages of the passage by the Barrier, are said to be the shortness of the route and the consequent saving of time, an open sea as far as 12° south, the accuracy with which the openings in the reef are now known, and the shortness of the distance thence to Bird Islands, where the two routes unite, so that a ship may pass the straits with only twice anchoring, or at most four times. All these points may be admitted as true. A great deal has been said of the uncertain position of many of the outer shoals, in the course from Sydney to the Barrier, and the danger of navigating among them, in consequence of the extraordinarily strong currents which have been experienced near them. Upon this, however, more stress has, in my opinion, been laid than is just. Persons who have lost their vessels upon them, have indeed reported currents of unusual velocity setting over those reefs upon which they were wrecked. But we know how much peculiar circumstances are apt to influence the mind, and it is not at all unreasonable to suppose that a man, who has had the misfortune to wreck his vessel upon one of these reefs, would be apt to view things around him in such a light as would best satisfy his mind that the accident had not resulted from anything over which he might have had control. Be this as it may, we have lately had instance of a most extraordinary current, and traced to a no less extraordinary cause, brought forward on a public occasion, to account for the loss of a ship where such currents are not usually found; and nothing is more likely than for men's excited feelings to lead them to give a high colouring to their reports, which they may, nevertheless, intend shall be correct and true. In our own case, we experienced no such currents. Indeed, scarcely on any day was there a greater disagreement with the reckoning by account, than what might, in a considerable part, at least, be justly

imputed to inaccuracy in the log. And as to the uncertain position of these shoals, this may be true of some, and others, yet undiscovered, may exist; nevertheless, the positions of some of the most important are known, and, what is more to the purpose, a track is known which may be followed with perfect safety. For instance, to refer again to our own passage: We left Sydney in the ship *Recovery* on the 7th April, 1836, followed pretty closely the track of the *Cumberland*, as given on the chart—sighted wreck reef, passing about five miles from its eastern extremity, kept the *Cumberland's* course till to the northward of the *Diana Shoal*, and then made a straight course, to fall into the longitude of 145° E. in the latitude $12^{\circ} 10'$ S., and during the whole of this run had a clear sea from the mast-head.

We now then come to consider the Barrier itself; and it must be allowed that a sufficient number of safe passages have been tried, and are well known. Commencing from to windward, and running down to the N.W. we have the *Nimrod's*, *Brown's*, *Winter's*, *Stead's*, and *Grove's* tracks, besides one or two others which are believed to be equally safe, but are not named; and within the Barrier, the passage to *Bird Islands*, though not surveyed, has been adopted by so many ships as to be now tolerably well known, and may certainly be followed with perfect safety in the exercise of common prudence and precaution. Here then, we have got to the junction of the two routes without any difficulty; and it is even possible for a ship to reach thus far without once anchoring, that is, supposing her to enter the Barrier very early in the day. This, however, may not happen, and in all probability she will have to anchor one night between the Barrier and *Bird Islands*.

Now, from the above statement it would seem that the advantages lie greatly on the side of the Outer passage, but notwithstanding all that appears so favourable, I must still consider the inner route the best, and this in regard of one circumstance of paramount importance: namely, the weather. It appears that throughout the period of the easterly monsoon the weather is unsettled, and fine clear weather with a steady monsoon breeze is interrupted by dark squally days with thick weather and rain. Approaching the Barrier under such circumstances would be peculiarly hazardous; for as there is no anchorage nor shelter to windward of it, nothing but an open unbounded ocean, a ship so caught, and obliged to carry off a danger of such magnitude against a heavy sea and lee current, would be in imminent peril; and although a commander may have gone by that route many times, and may have invariably experienced fine weather, no man knows what is before him, and what others have found to be the case, he also may, to his cost.

Captain Richardson, in the brig *Joseph Winter*, passed the Barrier on the 19th June, 1831, anchored off the *Sandhills*, and the next day was unable to weigh, in consequence of thick squally weather. Had he been but one day later we may easily imagine what would have been his situation. Certainly no enviable one.

The *Flora*, Captain Sherriff, made the Barrier on the 1st of May, 1832, and although the weather was thick and squally, the passage was attempted. The consequence is on record and well known. He could not find an opening, hauled his wind, in hopes of keeping an

offing or discovering a passage, and after working all day against a heavy wind, was wrecked upon the Barrier, at five in the evening, amidst tremendous breakers. In his case it blew so hard that on first hauling to the wind, both topgallant-masts immediately went over the side.

If the weather in the neighbourhood of the Barrier were like the north-east monsoon on the Malabar coast, almost invariably fine and settled, this argument would lose its force, but with the uncertainty that prevails, I consider it an objection, so strong, as decidedly throws the advantages on the side of the inner route. Our own case may also be quoted in corroboration. We passed the Barrier in the forenoon with fine clear weather, and obtained the latitude ($12^{\circ} 00' 00''$ S.) while lying to immediately off the inner end of Brown's Passage, in order to beacon the way for the Clyde, which was several miles outside; and immediately after noon the sky blackened, and we had thick weather, with rain, through the rest of the day, and, indeed, until after sunrise the following morning. Had we been a few hours later, it might have placed us in great jeopardy, for we could not have worked all night between the Barrier and the detached reef without great risk of falling on one or the other before daylight.

But the great inducement which operates with commanders to prefer this route, is, I believe, a persuasion that it affords a saving of time and labour. Admit that time is saved, still it is a bad practice if the risk is thereby enhanced: safety is the first consideration at sea; time is of importance, but it is wrongly estimated when purchased at the price of danger. But it may admit of some doubt, whether there is, indeed, any such saving of time, as to be worthy of consideration. The *Flora* sailed from Sydney on the 9th April, and was cast away on the 1st May. Here we have twenty-two days to the Barrier. The *Lord Wm. Bentinck* sailed from Sydney, 15th March, 1836, experienced a heavy gale of wind in front of the Barrier, which she passed at six, P.M., on the 12th April, giving twenty-eight days; and the brigs *Joseph Winter* and *Rifleman*, in company, were twenty-two days to Bird Islands. Now, with regard to the inner passage, we find that *H.M.S. Crocodile*, with eight merchant-ships in convoy, sailed from Port Jackson on the 3d July, 1830, and passed Booby Island before noon, on the 26th, giving only 23 days for the passage; and the brig *Helen* and ship *George Hibbert* in company, sailing from Sydney on the 23d June, 1833, proceeded by the inner passage, were detained at anchor in different parts of the straits by unusual foul winds, altogether eleven days, and passed Booby Island on the 22d July, making in all twenty-nine days, but only eighteen days under sail. Had I thought on this subject while in the colonies, there is little doubt that abundance of facts of the same nature might have been collected, but these are quite sufficient to ground an opinion upon, and go far to shew that the popular notion of the route by the Barrier being a saving of much time, is very little borne out by facts. The other point, namely the trouble of frequently anchoring is not worthy of serious consideration, and I imagine that no sensible man would urge it in opposition to the security and comfort arising from freedom from all nightly anxiety which the inner route affords; so that after a deliberate and impartial consideration of the advantages of each of these routes, I think the

preponderance is decidedly in favour of the latter, although observation leads us to see that popular opinion is altogether on the side of the passage by the Barrier. This may be accounted for by remembering that the Barrier passages have been discovered by commanders in our mercantile marine, who have spread their sentiments, and influenced their friends to embrace their own views; that these persons are frequently in Sydney, (one old navigator by the route is a fixed resident there,) that they are commonly consulted by strangers, and their opinions readily received and acted upon by such as have had no previous opportunity of witnessing facts, and judging for themselves.

Thus the Barrier passage becomes a favourite through the energy of its advocates, while the advantages of the inner route are left to be appreciated by those who have practically proved them, or who can justly estimate the advantage of sailing by such perfect charts and directions as are now furnished for that route.

In some directions which have been published for the Barrier, particularly Stead's passage,* it is recommended for a ship to make the detached reef lat. $12^{\circ} 00'$ S. and to run along its *northern* side as she advances towards the Barrier. With all deference to the sentiments of a clever practical navigator, who gives this advice, it, nevertheless, seems to be very questionable, the prevailing winds being from the southward of east, varying from about E.S.E. to S.S.E. Stead's passage will be found situated towards the leeward angle, or bend of that deep indentation which is formed in the Barrier between the latitudes of about $11^{\circ} 51'$ and $12^{\circ} 07'$; consequently if with the wind at S.E. a ship passes along the *northern* side of the detached reef, and stands on from thence for Stead's passage, she runs into a leeward bight, she has but one more known passage, *i.e.*, Grove's, to leeward of her, and should the wind veer more southerly, she might find some difficulty in passing Stead's Passage, which is tortuous, longer than some others, and has the objection of a shoal patch in the fair way, which, though believed to have plenty of water over it, is nevertheless a valid objection, while the actual depth of water remains uncertain.

But if, on the contrary, a ship having made the detached reef passes to the *southward* of it she will then approach the Great Barrier to windward; and in proportion, as the wind is southerly, she will get into perfectly smooth water under the lee of that bend of the reef, *i.e.* the main Barrier, which runs to the eastward in about $12^{\circ} 7'$ or $12^{\circ} 08'$. Hence, being on the weather side of this indentation, she will have the advantage of choosing her opening. She will see, as she approaches, the Nimrod's entrance nearly right a-head, and, supposing she does not take this, then bearing along the face of the Barrier, she will have each of those known and approved passages which are given in the chart, opening in succession as she advances, or runs to leeward, and may adopt that which she can most conveniently sail through, or may otherwise be induced to adopt. I should be sorry to give this as my own solitary opinion, it would look like presumption, although I think the advice sanctioned by sound judgment; but I give

* Vide Nautical Magazine, vol. i. p. 116.

it as an opinion supported by a very able and experienced navigator, whose judgment claims our confidence and respect.*

The only remaining point I will touch upon in connexion with this subject, is the obvious impropriety of troop-ships adopting the route. The Barrier passage is proverbially one of risk ; in the event of being surprised by bad weather, it is most perilous, and requires neither argument nor explanation to understand something of those dreadful consequences which must unavoidably ensue from shipwreck in such a place and under such circumstances. Suffice it to imagine a ship of from 400 to 500 tons with full 300 persons on board, and the boats of such a ship, admitting them to be all saved and uninjured, crowded to excess, not capable of containing more than one hundred ; two-thirds, except by some miraculous interposition of divine Providence, must perish, to say nothing of the great improbability of boats in such a state making a passage to a place of safety. As it is now customary for regiments to proceed from the Australian colonies to India, I consider it a duty to bring this subject to the notice of Government, and would recommend that Government should peremptorily forbid their troops being conveyed by this dangerous route.

In ordinary matters it does not become a government to interfere with the plans of the captain of a ship. There are very few points upon which they can correctly judge. They certainly should satisfy themselves as to the character and qualification of the commander, as much as in regard to the fitness of the ship, and having done this, are to leave him unfettered in the exercise of his profession. But the passage of the Barrier may justly, indeed most obviously ought to, stand as an exception to this general rule, and all troop-ships bound through Torres Straits, should be obliged to take the inner route, where, in case of being cast away, every individual might, in all human probability, be safely transported to the shore by successive trips of the boats. The barque Lord Wm. Bentinck sailed from Sydney with part of the 17th regiment for Bombay, on the 15th March, 1836, and passed through Stead's opening in the Barrier at 6, P.M., on the 12th April. This was some few minutes after sunset, supposing the time stated in the duplicate report found at Bird and Booby Islands to have been accurately noted ; and we may, therefore, readily imagine what would have been the situation of that ship had the wind failed, and night closed around her as she was approaching the Barrier, or had any other untoward contingency befallen her in such a situation, and so crowded to excess.†

When we call to mind the attention that is commonly paid to the comforts of the soldier, more particularly in India, and the judicious regulations for the preservation of his health which are enforced, we are apt, at the first thought, to be surprised that the very lives of such a numerous body should be so lightly risked, as they evidently are, in being exposed to the uncertainty of a passage by the Barrier

* Captain T. Johnson, of the Recovery, determined, long before we neared the Barrier, to approach it in the direction I have pointed out, and the comfortable circumstances under which we effected our passage, confirmed the soundness of his judgment. We entered by Brown's Opening.

† Number of persons on board William Bentinck : Officers 9 ; officer's wife 1 rank and file 218 ; women 23 ; children 61 ; private servant 1 :—total 313.

Reef; but doubtless the reason of this is to be found not in the indifference of Government to the wellbeing of any part of their army, but to mere inadvertency; the authorities have probably never thought upon the subject, and remain to this day ignorant of the route by which their troops are conveyed to their destination, and no less ignorant of the dangers of the Barrier passage. This subject, like many others, requires to be brought in a specific manner before them. And were the marked impropriety of troop-ships proceeding by this route, pointed out in a respectful manner, by persons of becoming character and information, there cannot be a reasonable doubt that Government would make such arrangements as should effectually put a stop to its adoption in future. I would strenuously recommend that the governments in the two Australian colonies should introduce a clause in the charters of all ships taken up for the conveyance of troops to India, that in the event of proceeding by Torres Straits it should be imperative upon the commander to adopt the inner route, and that he should be provided with Captain King's charts and directions, to be attested by a certificate from the harbour master.

Government, in acting thus, would do their part, and would stand exonerated of all blame, whatever might befall their troops while yielding themselves, in passive obedience, to the orders of their superiors, to circumstances of privation, difficulty or danger.

REDCAR AS A HARBOUR OF REFUGE.

“*Fas est ab hoste doceri.*”

“Of the king's ship,
The mariners say, how thou hast disposed,
And all the rest o' the fleet?” *Tempest.*

HAVING shewn in my former remarks that the committee on *harbours of refuge* have adopted, with *becoming* consistency, the *dry harbours* of Scarborough, Burlington, and Whitby, and recommended them in their report* as worthy of the especial patronage of Government, for a continuance of the passing toll; (or, in other words, that tax which, although nominally on British shipping, really falls on the British public;) having done this, I shewed all that this committee *have done*. I will now endeavour to shew what the committee *ought to have done*. Allowing that the members of this committee were fully impressed with the importance of the duty entrusted to them, and that they knew that the attention of the British public was directed to them; that the eyes of the whole body of seamen navigating the eastern coast of England were upon them, imploring them to do their duty fearlessly and manfully, and to remove the grievances under which they labour on that dangerous coast—knowing also, as British senators, that “England expects every man to do his duty;” that they were then to collect sterling information, and with it to offer their own opinions to the

* The reader will find this report in our volume for 1836, page 497; and the former remarks of our correspondent in pages 602 and 649 of the same volume.

executive Government, which was hereafter to legislate upon it; they would have proceeded cautiously and carefully, keeping before them always the object for which they were assembled, and that they were to do their utmost towards the attainment of that object. This I consider to have been the duty of the members of the committee.

Now let us see what was the object for which this committee was appointed, as entered in the minutes of the House of Commons: "To enquire into the alleged deficiency of protection for ships on the north-eastern coast of England, and the propriety of admitting passing tolls for the maintenance of harbours of refuge on that coast." Such was the object of the committee—an object well worthy the attention of Government, and one which it was hoped would have led to some useful result.

The north-eastern coast of England may be supposed to include that part between the mouth of the Humber and the Frith of Forth; but the committee have gone further than this, for which they are by no means to be blamed. Having collected from experienced individuals, men well acquainted with the coast—ship owners and ship builders, ship captains, and officers of high and responsible rank in the navy—a vast deal of useful information; upon due consideration of it all, the committee open their report with the following remarkable paragraph:—

"That it appears to your committee, that from the Frith of Forth to the mouth of the Thames, there is no harbour which, in the strict acceptation of the term, can be called a harbour of refuge; that all are tidal harbours, and only accessible at certain times of the tide."

Having arrived at this straightforward and sensible conclusion, that there is no harbour of *refuge* on this extensive line of coast, "the alleged deficiency of protection for shipping" was clearly established; and to supply that deficiency one would have expected to have become the next object of the committee. Considering also the following paragraph in the report, the actual necessity of supplying that deficiency seems to have prevailed in the minds of its members. They say—

"That it appears to your committee that vessels engaged in the coasting trade are particularly exposed to severe on-shore winds from the north, north-east,* to south-east."

No doubt they are, as they are then on a lee shore. But what does the committee say next in their report? Why, they then turn to the harbours of Whitby, Burlington, and Scarborough, acknowledged by themselves to be dry tidal harbours, and therefore, before a committee on harbours of refuge, ill-deserving the attention which they received. In order that your readers may be enabled to see at a glance the comparative merits of these places to be considered as harbours of refuge,† I have copied them from the report of the shipwreck committee as they stand, all drawn according to one scale, and have added to them the harbour of Hartlepool. The commanders of ships will also be enabled to see the kind of places they may be running for in

* This most probably means N.N.E., not as it is in the report.

† [Considering the tendency and importance of this document, we have acceded to the request of our correspondent, as it appears well calculated to illustrate the cause he advocates, and to shew the real state of things.—Ed. N.M.]

PIER HARBOURS

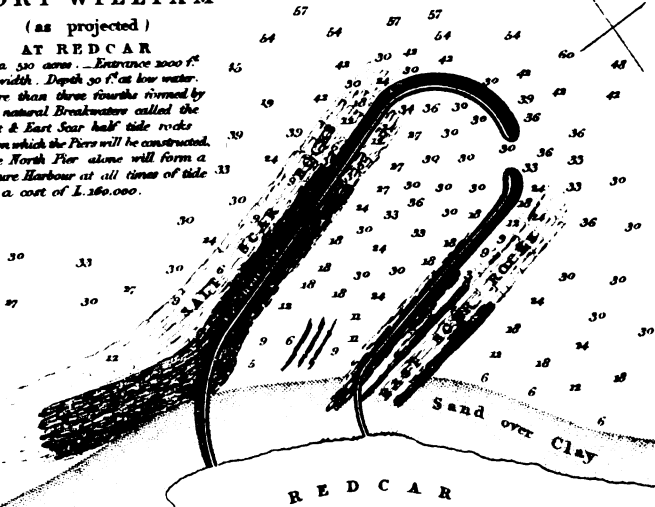
ON THE SAME SCALE

PORT WILLIAM

(as projected)

AT RED CAR

Area 520 acres. Entrance 2000 ft. in width. Depth 30 ft. at low water. More than three fourths covered by the natural Breakwaters called the Salt & East Scar half tide rocks upon which the Piers will be constructed. The North Pier alone will form a secure Harbour at all times of tide at a cost of £.260,000.



SCARBOROUGH TIDAL HARBOUR

1. Area of outer harbour 24 acres
2. D^o of inner D^o 9
3. Entrance 60 ft.
East D^o 61 West entrance 100 feet wide



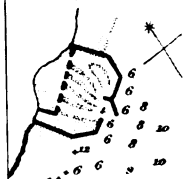
The Entrances to this harbour are four feet six inches above low water Spring tides. Cost of proposal new S^o Pier £. 49,000. for which a passing toll is required.

BRIDLINGTON TIDAL HARBOUR



Area 24 acres at Highwater if enlarged as proposed at a cost of £. 57,000 for which a passing toll is required. Entrance a foot above low water Spring tides.

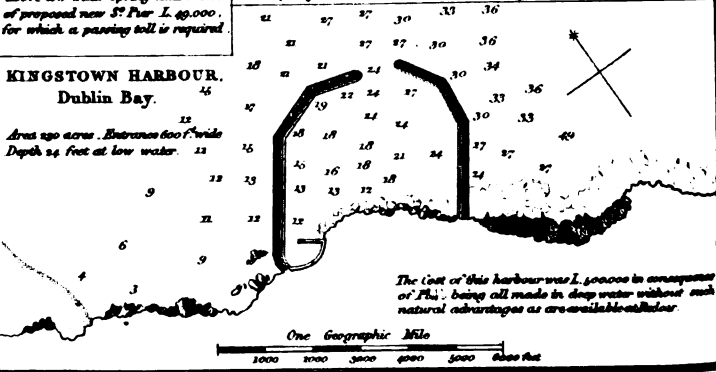
RAMSGATE TIDAL HARBOUR



Area 48 acres
Entrance 200 ft.

KINGSTOWN HARBOUR, Dublin Bay.

Area 220 acres. Entrance 600 ft. wide
Depth 24 feet at low water.



The cost of this harbour was £. 1,000,000 in consequence of Piers being all made in deep water without such natural advantages as are available at Red Car.

The Soundings in the above plans are expressed in feet at low water spring tides.

the extremity of danger, and knowing what they have to expect, will no doubt be thankful to the committee for their precious care of them. I trust that you will allow it a place, Mr. Editor, in your valuable work, which has become celebrated already as the seaman's real friend. A vast deal of the report is devoted to the statement of the precise sums required to preserve the two last from destruction, and a great deal more in the evidence is devoted to the same purpose; and the whole is concluded by the following clause, preceding the grand result with which the labours of the committee have terminated. It runs thus:—

“That it appears to your committee, that, although much evidence of a conflicting nature, both with respect to the general effects of harbours of refuge and the proper means of their support, has been offered to your committee; that it appears, upon a careful consideration of the circumstances of the existing harbours to which their attention has been directed, with reference to their situation, their construction, their maintenance, the state of their funds, the sanction of the present system by oft-renewed acts of parliament, combined with a due regard to the claims of humanity, and the safety of the valuable lives of an immense body of seamen, your committee recommend,”—

Before we proceed to what the committee do recommend in their own terms, let us look into the foregoing paragraph, as it appears to embody all the reasons on which the committee ground their recommendations.

1st. “Evidence of a conflicting nature, both with respect to the general effects of harbours of refuge, and the proper means of their support.” As the committee have already stated that there is no harbour of *refuge* on the coast they have been enquiring into, the conflicting evidence alluded to here cannot be that accompanying their report on Scarborough, Burlington, and Whitby, which are not harbours of *refuge*. The evidence on the propriety of keeping these up is conflicting enough, as interested and disinterested opinions will always differ. Assuming then that the committee allude to harbours of *refuge*, and not to the dry harbours above “the proper means of their support,” and “their general effects” may perhaps be no very difficult points to settle.

2dly. The report says, “upon a careful consideration of the circumstances of the existing harbours, to which their attention has been directed.” The existing dry harbours, to which the largest share of the committee's attention has been directed, (and why so directed, I know not,) are professedly Scarborough, Burlington, and Whitby; and their circumstances are bad enough. But what follows of them? it is added, “with reference to their situation,” their situation is about midway between the Frith of Forth and the Thames, all included in the space of about *thirty-five miles* of coast—the northernmost one, which is Whitby, being about 120 miles from the Forth, and the southernmost one, which is Burlington, being about 180 miles from the Thames, with Scarborough between them. Next comes “their construction,” in which particular they have been shewn by their own engineers, and the evidence accompanying the report, to be bad enough, both for their own preservation, and the reception of vessels.

Then follows "their maintenance," and "the state of their funds." It must be expected that opinions will differ as to the maintenance of such harbours as these; and the state of their funds may be taken as a proof of that difference of opinion; and I cannot find, in the whole course of the evidence before the committee, a single opinion in favour of the present mode of their maintenance, except perhaps from individuals interested or connected in some way or other with them. I have already quoted evidence sufficient to support this assertion. Then is paraded by the committee, "the sanction of the present system by oft-renewed acts of parliament, combined with a due regard to the claims of humanity, and the safety of the valuable lives of an immense body of seamen;" and these are the reasons on which this committee ground their recommendations. What the sanction of "the oft-renewed acts of parliament" has to do with the object of the committee, which object is expressly the maintenance of harbours of *refuge*, I have yet to learn; but, that the safety of the lives of seamen has much to do with it, no one will deny. But let us now see what the committee recommend for the foregoing reasons, in their zeal to save the lives of seamen.

1. "That a passing toll, not exceeding the present amount, upon all coals exported from the ports on the north-eastern coast, passing southwards, should be continued, or granted, under due regulations."

Here is zeal for the lives of seamen!

2. "That as soon as the works now in progress, or the proposed improvements, in the existing harbours, shall be completed, the said tolls shall cease, or be modified in such manner as parliament may limit."

All zeal again for the lives of seamen!

3. "That vessels engaged on voyages in which they have paid the passing tolls, shall be exempt from all charges on entering the said harbour in a state of distress during such voyage, provided," the committee should have added, "provided! that *they can get in!*"

What vast zeal is this for the lives of seamen! The "oft-renewed acts of parliament" are thus recommended to be again renewed, to save Burlington from utter ruin, as its license is just expiring—to add more shallow water to the dry harbour of Scarborough, while its license continues—and as Whitby, being already safe, has borne the brunt of a kick* in the commencement of the report, the necessity of continuing the measure, and the policy of that measure, which granted to this harbour the ill-deserved license to receive a passing-toll, is thus demonstrated! Now, let it be asked, where is this toll to come from? "Coals," says the report, carried in vessels which not one of these harbours could receive when they are laden. But this fiat is modified, and is to last only while the works, &c. now in progress are being completed. How considerate is this! As soon as we have established ourselves with your spoils, say the friends of these harbours to the passing trade, and are in good order, we will then moderate our demand, and parliament shall modify the tax, which you must pay if you pass our harbours, whether you can get into them for refuge or not! Pay your way first, then get in if you can! What consummate

* The *report* says "that it is very dangerous to enter in a gale of easterly wind."

zeal does this display for the lives of seamen on the part of the members of this committee! First, to give them harbours, and then to make them pay for them, which harbours they know full well they cannot enter when they want their protection! But “zeal, then, not charity, became their guide;” and how well has it earned them their motto,

“Dulce et decorum est pro patria mori?”

Yes, Scarborough, Burlington, and Whitby, must flourish, if sailors and ships are to perish at sea within sight of their coasts! What to them, if

“Now on the mountain wave on high they ride,
Then downward plunge beneath th’ involving tide?”

This, sir, is what the committee appointed to inquire into the alleged deficiency of protection for ships on the north-east coast of England have done; and acknowledging, as they were obliged to do, the truth of that deficiency, this is the protection they have provided for those ships, and their unfortunate crews!

Now, sir, let us see what the committee might, and in the opinion of seamen ought, to have done. No sooner had this deficiency been proved, and no sooner had their first resolution been formed, but the committee would have deliberated among themselves whether the existing harbours could be converted into harbours of *refuge*, as they were specially to consider “the propriety of admitting of contribution of passing-tolls for the maintenance” of this kind of harbour. It would have required no great degree of perception to have discovered in the evidence which they have collected, that neither of the three which they have named in their report could be converted into harbours of *refuge*. They were told, “do what you will to them, dry harbours they will remain.” Whitby, at the mouth of the Esk, with two feet of water, “nobody runs for,” and nobody would attempt to improve. Burlington,* “an inclined plane” † of mud, the entrance of it being two feet above low-water; and Scarborough, a sandy plane, the lowest part of which is four feet above low-water, are irrecoverable. There is sufficient, I repeat, in the evidence, for the committee to have discovered that these places could never be converted into harbours of *refuge*. If Scarborough has already had expended on it, since the year 1806, the sum of £68,800, £58,000 of which have been laid out in clearing away deposit, and is still two feet above low-water, of what avail will it be to increase it, and to attempt to deepen it, when important opinions are given in the evidence, that it is as

* Since the foregoing was written, I have met with the following paragraph in the Leeds Mercury, of the 10th of December last:—

“BRIDLINGTON QUAY.—The late high tides and tremendous gales have caused much destruction and damage to the piers and the houses upon the cliffs of this place. P. B. Thompson, Esq., M.P., has paid a visit of inspection, and promised to give his best interest and support to a bill which is to be applied for in the next session of parliament, to improve the port of Bridlington, and make it one of the best, if not the very best, harbour of refuge on the eastern coast.”

No doubt the editor of the Mercury, who gravely wrote such trash as this, was in earnest with the good folks of Bridlington, for

“Doubtless the pleasure is as great
Of being cheated, as to cheat.”

† See Captain Hewett’s evidence, page 9.

likely as ever to be silted up. Yet, in spite of this, £49,000 more are recommended by the committee to be expended on it, making altogether £117,800 on what can never be a harbour of *refuge*. On Bridlington, £38,385 have been expended, and to do the same with it, £56,572 are further recommended to be lavished upon it, with even less appearance of any result beneficial to the passing trade. Then we have here three dry harbours, within about thirty-six miles of each other, existing on the revenue which they derive from that passing trade, in an extent of coast amounting to 300 miles, neither one of which are, or can ever be made a harbour of *refuge*. This, sir, is what the committee might have discovered in the evidence placed before them; but, because they could not be made harbours of *refuge*, and therefore should have had nothing to do with the committee, the sum of £105,572 is recommended by this same committee to be expended on two; and for the whole three the former acts of parliament, establishing them in their useless condition to the passing trade, are recommended to be perpetuated!

Now, sir, instead of recommending these harbours, with which the committee should have had nothing to do whatever, they should have glanced over the chart of the coast, with the view to ascertain if the deficiency which they had discovered could not be supplied somewhere within those limits which had been assigned them. Had they done so, they would have found that there are places more likely to be made available for the object for which they were assembled, than the already existing dry harbours which they have chosen. They would have discovered that a place called Filey Bay, and another place called Redcar, offer facilities for being converted into harbours of *refuge*; and, that they have not been altogether unaware of the existence of such places, and their aptness for such a purpose, both their report, and the evidence before them, clearly shew. The 10th clause of the report runs as follows:—

“10th. That it appears to your committee, that a very convenient and capacious harbour, which would be accessible in north-easterly winds, and at all times of tide, could be formed at Redcar, near the mouth of the Tees, where nature appears to have done a great deal towards the formation of such a harbour; also, that a spot a little further south than Scarborough, called Feby* Bay, affords great facilities for the same purpose.”

Let us stop here a moment, and recall to our minds that the committee were specially to consider “the propriety of admitting of passing tolls for the maintenance of harbours of *refuge*.” They admit here that nature has done a great deal towards the formation of such a harbour at Redcar, and also that Filey Bay affords great facilities for the same purpose. It might have been expected (the object for which the committee were appointed being considered) that having got hold of such desirable places, they would not have let them go; and in their zeal to save the lives of that “immense body of seamen,” to which they allude, that they would have deliberated over these places, as

* Feby, I presume, must be Filey. These erroneous denominations are too common in this report. Thus, Captain W. Hewitt should be Captain W. Hewett; Admiral Charles Fleming should be Vice-Admiral Hon. Charles Elphinstone Fleeming; besides many other errors which I might point out.

they are the only ones worth their deliberating upon. But what does the committee do? Do they even recommend them, with these circumstances in their favour, acknowledged by themselves, to the attention of Government? No! They turn their backs upon them, and dismiss them thus: "But your committee cannot recommend to parliament, that works of such magnitude, necessarily attended with a very heavy expenditure, should be provided for by a passing toll either upon vessels or their cargoes; whether the interests of humanity, or other great national objects, may require that such ports should be formed and kept up at the public expense, are points upon which your committee are not prepared to offer an opinion."

What could have called forth such a resolution as this, I am entirely unable to say. Surely here was where the very duty of the committee lay; namely, to enquire into the probable expense of converting these places into harbours of *refuge*, and with that expense to express their own "*opinion*" as to the propriety of adopting either, formed upon a knowledge of the local circumstances; and a reference to the opinion of the witnesses examined by them with respect to the passing trade detailed in their evidence. With these opinions and the accompanying evidence, together with whatever other enquiry, which might have become necessary, it would have been for Government to have determined whether the interests of humanity and national objects require their formation, and then to have acted accordingly. But the three dry harbours, of Whitby, Burlington, and Scarborough are considered, on *these accounts*, worth keeping up. Assuredly, had the committee been told—

"Be to their faults a little blind,
Be to their virtues very kind,"

they could not have more completely fulfilled the wishes of their warmest advocates; and the passing toll is accordingly recommended for them, not that they are *refuge* harbours, which the committee acknowledge they are not, and Filey Bay, or Redcar, either of which the committee admit, might be made a *refuge* harbour, cannot have the passing toll also! No, certainly not; how can they all have it? and possession is nine points of the law." I would like to know what difference it would make to the passing trade if the half-penny per chaldron of coals now collected for Whitby, and the farthing per chaldron collected for Scarborough and Burlington were transferred to either Filey Bay, or Redcar? It would make this difference, that they would then have a harbour of "*refuge*" *always* to run for, with certain security in bad weather, which neither of the harbours, recommended by the *refuge committee*, can afford! But why are three dry harbours all huddled thus together, to be kept up? Surely, one good one, such as the committee might have found, would have been sufficient!

With regard to a good harbour of *refuge*, that shall offer a real, not a pretended, asylum to vessels in distress, there can be among rational beings but one opinion; which is, that it must be desirable, and the conflicting opinions alluded to in the report could have had reference only to the pretensions of the existing harbours to be considered so; and that it would willingly be paid for by a passing toll,

also appears in the evidence of the committee. Captain Hewett thinks the more *refuge* harbours there are, the better*. Captain Wilkie† thinks, if good harbours of *refuge* could be obtained, it would be the interest of ship owners to pay for them. Mr. George Frederick Brown, of Scarborough, and a ship-owner also, thinks, "on the score of humanity," "the more there are, the better;"‡ and that "the deeper recesses of the coast, if suitable, are the best to construct them in." Mr. Thomas Chadwick, a London ship-owner, agrees that it is desirable "there should be a harbour of *refuge* on that coast."|| Mr. Benjamin Sharp Sawden would pay for better harbours than the present. Mr. Aaron Chapman would have harbours of *refuge*,§ but he appears to consider those named in the report, which he acknowledges not harbours of *refuge*, as quite sufficient *when improved!* Mr. Dall thinks, with respect to harbours of *refuge*, "the more we have the better,"¶ although he would not agree that the *place most fit for one should have the preference.* Captain A. Walker thinks, that, the larger an asylum harbour is, the better, provided it be a good one, as you are always certain of finding room in it.¹ Captain G. Mann, Mr. A. Watson, Mr. M. Anderson, and Mr. W. Anderson, all accustomed to the navigation of the north-east coast, think, the benefit of a good harbour of *refuge* would be greater than that of Scarborough.² Mr. W. Barber thinks that harbours of *refuge* are desirable in certain places.³ Admiral Fleeming⁴ thinks, a harbour of *refuge* is required on that coast. Mr. George Booth and Mr. Joseph Straker, of Sunderland, would like to have a good harbour of *refuge* "conveniently" under their lee⁵ and Licut. Philip Bisson qualifies his opinion of a harbour of *refuge* being desirable, by adding "I have reason to speak strongly of that."⁶

Now, sir, I have enumerated all the witnesses who were examined before the committee, to whom was referred the question of a harbour of *refuge* being desirable or not. I am not alluding to such harbours as the three recommended by the committee, either as they are at present, or as they would be when *improved*; for from them must have arisen all the difference of opinion alluded to by the report, but I speak now of a HARBOUR OF "REFUGE," such as I have before defined, and I have given you the various opinions upon it as they stand in the evidence.

With these opinions before them, both of ship-owners and ship captains, and officers of the royal navy, the point was already decided, that one harbour of *refuge* at least was wanted, if not more than one, notwithstanding the exception (which is common to all general rules) of Mr. Aaron Chapman, and the indecision of Mr. Dall, as to where it should be. But as it would be likely that the expenses of one at a time would be enough, the position of that one would be the next point for consideration. Bearing in mind the opinion of Mr. George Booth and Mr. Joseph Straker, that "if it is not accessible at all times, it would rather run ships into danger and difficulty;" also that of Mr. Sawden, that "harbours of *refuge* are chiefly for the protection of life,"⁷ and not for the loss⁸ of it; and also Captain Walker's opinion that, unless it were spacious it would not be available⁹ for the

* P. 14 of Evidence.

† P. 75.

‡ P. 78.

§ P. 111.

¶ P. 26.

|| P. 81.

1 P. 102.

2 P. 26.

3 P. 81.

4 P. 66.

5 P. 52.

6 P. 07.

7 P. 09.

8 P. 70.

9 P. 107.

numerous vessels that would crowd into it in an easterly gale; also the opinion of Mr. G. F. Brown, that "the deeper recesses, if suitable," from their leeward position, "are the best to construct them in," combining with these opinions a consideration of expense which would induce the committee to avail themselves of all favourable local circumstances; I say taking all these points into consideration it is a matter of astonishment to me, knowing that all these features, as appears in the evidence, were to be found at Redcar, it is a matter of profound astonishment to me how the committee could turn their backs on it as they have done, and adopt the dry harbours which they have named in their report, without any other recommendation save that of benefiting their own trade, and having a useless, nay a worse than useless, a dangerous existence to the passing trade! which they assuredly have by holding out to them a semblance of that protection in danger which they cannot give!

I find in the evidence accompanying the report, that the same witnesses who appreciate the harbours of the committee, speak thus of Redcar: Sir Henry Williamson, one of the members of the committee, says to Capt. Hewett, "I want to put an hypothetical question to you: If it was decided by the legislature, to lay out a large sum of money in the refuge harbours between, we will say the river Tyne and the port of London, where would it be most conveniently situated?" The answer of Captain Hewett is, "I know of no other place than Redcar, throughout the whole coast. A place of refuge could be made, as I before observed, at Filey Bay, but it must be a very extended breakwater," (in ten or twelve fathoms water.) Redcar is the only place that nature seems to have provided for the purpose.* Now, if experience of the coast in question, a thorough knowledge of all its features, adds weight to an opinion, certainly it should do so to this of Capt. Hewett, whose duty it has been to make a critical survey of all this coast for the Admiralty.

Capt. Hewett described to the committee the peculiar features of Redcar, and how nature has done so much towards forming a harbour there which would have five fathoms water in its entrance instead of having it four feet above low water, as Scarborough has. He shewed that it was no dry harbour, that it would be accessible at all times of tide as a harbour of *refuge* should be; and he gave a seaman's opinion of the various advantages which it possessed, in a superlative degree, for the construction of what the committee were looking for: namely, a harbour of *refuge*. But when he was questioned as to the expense, he very properly replied, that is an engineering question.

Mr. G. F. Brown also admits (although a Scarborough man) that a very good harbour could be formed at Redcar,† and his only objection to a passing toll for it is, that it would be larger than required. Now, Captain Hewett shews, in his evidence, that Redcar would not be likely to be silted up, and there is no reason why the size of a harbour should increase the passing toll; and surely Mr. Brown forgets that there are other ships to fill a harbour of *refuge* on the coast besides his own. Certainly, with regard to the size of the harbour, and number of vessels which could find *refuge* in it, if that number is

* P. 13 of Evidence.

† P. 35.

calculated by the same rule as Scarborough and Burlington have been, it will hold the whole north sea fleet of men-of-war and merchantmen together. It is stated by this same Mr. Brown, that he has seen 117 vessels in Scarborough in its present state.* Now Scarborough, we know, contains only fourteen acres and a quarter; and as Redcar contains five hundred and ten, it follows, that if Scarborough will receive 117 vessels in distress, Redcar will receive 4,262! and, if Bridlington were to contain 200, as has been asserted † by Mr. W. Brambles of that place, before the committee, by the same calculation Redcar will contain 7,255!! But these are mere calculations on the opinions of the advocates of Scarborough and Burlington—places that a loaded collier can't get into, even to find the room said to be there for them!

With regard to the position of Redcar, it is well known, that with easterly winds vessels on the coast keep a good offing; and Mr. James Mann, of Kirkcaldy, distinctly states, that in February last he was obliged to keep the sea during a gale; that if there had been a harbour at Burlington he would have gone into it; and on the same occasion he might have gone into Redcar. ‡ But with regard to the vessels Redcar would save, if this harbour were constructed, I met with the following remarkable passage in the report of the late shipwreck committee, printed in page 593 of the Nautical Magazine. Under the title "*Harbours of Refuge*" it says, "That there are many portions of the coast of Great Britain in which the want of harbours of refuge has led to the loss of many vessels, that might have been easily saved, had such harbours existed, of which the two following instances may be named:—In three different gales of wind which occurred in the years 1821, 1824, and 1829, there were lost on the coast of England, between the Humber and the Tees, 169 vessels, of which 73 were wrecked on the rocks off Redcar, where peculiar facilities exist for constructing a harbour of refuge, by which the loss of nearly all these vessels might have been avoided." Then follows the other instance with respect to Holyhead. Now this clause in the report of the shipwreck committee comes just in time to shew of what use the harbours of Scarborough, Burlington, and Whitby were of to these vessels, and also what use Redcar might have been to the seventy-three unfortunate ones lost on its rocks, if, instead of these rocks, they had found the proposed harbour. The committee on harbours of refuge in the very line of coast alluded to, appear not to have been aware of this appalling loss of life and property, nor of the value that their own harbours were in saving it! But, that they knew of the pretensions of Redcar, appears from their evidence; for Mr. Cubitt is distinctly asked by Mr. Aaron Chapman, "Looking at the harbour, (Redcar,) you believe it to be a very fine situation for a harbour; and, knowing the expense it would occasion, would you undertake from your judgment to say that it could be fairly completed for the sum of £300,000?" The memorable answer to this question, coupled with another fact, deserves the attention of the committee, especially from their vaunted regard to "the claims of humanity, and the safety of the valuable lives of an immense body of seamen." Mr. Cubitt, an engineer of acknowledged skill and high

* P. 36.

† P. 45.

‡ P. 57.

repute in his profession, says, "I do indeed; I think so from what I have seen and experienced in such matters, and also think so from the knowledge I have to the exact cost of Kingston harbour. The reason is, that there are extensive quarries of good sand-stone close at the back, where they could be run down."

Now, Mr. Cubitt's opinion, backed by that of Mr. Brooks, the engineer who originally designed the harbour at Redcar, is as high an authority as the committee could have desired; and he distinctly states that £300,000 would construct this magnificent harbour. The report of the shipwreck committee which I have quoted above, states that seventy-three vessels would have been saved in three years, if this harbour had been made; and, adopting the ideas of the same committee, that each vessel was worth £5,000, the amount saved in seventy-three vessels, in pounds sterling, would have amounted to £365,000—more than sufficient to construct this harbour. Now, this is a fact one would have thought worthy the attention of the committee. Here is more than sufficient *thrown into the sea* to have constructed the harbour; and, as a seaman, I will venture to say, that of the other ninety-six vessels stated as lost in the same period, that, with the knowledge that there was a *safe* harbour for them to run to at Redcar at all times, they would have kept such an offing as would have enabled three-fourths of them to get into it. How completely does this sacrifice of life and property reported by the shipwreck committee establish the nonentity of those wretched harbours of Scarborough, Burlington, and Whitby! How could these vessels run for such harbours, when it was notorious that during two-thirds of the twenty-four hours they were perfectly inaccessible!

But I have yet to shew that the committee on harbours of *refuge*, were fully aware of the advantages of Redcar as a harbour of *refuge*. They are told by Captain A. Walker, "I think if persons had gone along the coast to look out for a spot as a place of refuge for wind-bound vessels, they could not have fixed on a better place than Redcar, between the Forth and the Humber. It is a place where I have always wished for some refuge for ships. It is a bold coast for a vessel to run down. It is impossible to have a better position."* Capt. Walker is a seaman and speaks accordingly. Mr. Hutt asks him, "Are you of opinion that ships coming from Sunderland and Newcastle might take refuge in the harbour of Redcar; vessels going south to London? Now these are places be it known from which Scarborough and other dry harbours derive their existence. Captain Walker answers, "Yes, because there is a bay there, and plenty of water. A loaded ship cannot get out of a dry harbour, (Query, can she get in?) so as to get back to Shields; so there would be nothing for her till she got to the Humber, unless she went back to the Forth," or we might add, unless she shared the fate of the unfortunate 169 vessels, which, with many others before and since have been lost! Captain G. Mann, Mr. Watson, and Messrs. M. and W. Anderson express their opinion of Redcar harbour, by saying they would rather pay a passing toll for it than the three existing harbours which Mr. Aaron Chapman is so much attached to, and would run for it in gales of wind when they would not dare to do so for either of the others. Admiral Fleeming is

asked by Admiral Sir Edward Codrington, "If only one harbour was to be formed on that coast, would you not prefer the situation of Redcar to Scarborough or any other of the present ports?" "Certainly," says Admiral Fleeming, "undoubtedly Redcar possesses many advantages over all the other harbours on the coast from its position." And when Sir M. W. Ridley asks him, "Is it your opinion that Redcar would form a good place of rendezvous for any of his Majesty's ships as well as for ships in the coasting trade?" he replies, "Yes certainly, if the works proposed to be constructed at Redcar were carried into effect, it would be the best rendezvous for his Majesty's ships from Yarmouth to Leith." And yet with this valuable professional opinion, from so high an authority as Admiral Fleeming, both Sir Edward Codrington and Sir M. W. Ridley recommend the dry harbours of Scarborough! Burlington! and Whitby in preference! I might multiply quotations of evidence, adduced before the committee, of the great superiority of Redcar over these wretched harbours, but I will add one more only from a naval officer of experience on the coast. Lieut. Philip Bisson is asked, "Do you think the land about Redcar affords great facilities for making the harbour in that port?" to which he replies, "Yes it is the bight that is remarkable. I think it would be necessary to have a light at Redcar, and then in the darkest night you could make for that harbour." Now when it is known that so lately as between December 1834, and March 1835, thirty-three vessels were driven on shore in the Tees bay, of which fourteen were totally lost, as appears by a document laid before the committee by Mr. Brooks, it is not to be wondered at that the committee on the fifth day of their sitting should receive a petition signed by 350 ship-owners and masters of vessels trading between London and the eastern and northern parts of the United Kingdom for the formation of Redcar harbour! also another similar petition to the same effect signed by 100 more owners and masters! also another petition to the same effect signed by 27 masters and owners! also another similar petition to the same effect signed by 24 owners and masters!

Now sir, it may be asked, why I stand forth as the advocate of Redcar? to which I would reply, that as a British seaman I advocate its cause with clean hands, without interest and without the view of gain. I am no possessor, no inheritor of landed or other property near the site of the proposed harbour; I own no shares in railroads or coal mines thereabouts by which my interest would be promoted in its adoption; I am no ship-owner, nor do I command a ship now to benefit by the existence of such a harbour; but having been "used to the sea," and knowing the feelings with which weather-beaten mariners hail such a resort as Redcar would offer them in the extremity of danger, ere—

"The hostile waters close around their head,
They sink for ever number'd with the dead!"

—I have essayed to expose the fallacious idea that the harbours recommended by the committee are harbours of *refuge*; I have shewn that they hold out false hopes to the deluded mariners, who, year after year, are wrecked upon their shores; I have shewn that a committee on *harbours of refuge*, had nothing to do with them, as, by their own acknowledgment, they are tidal or dry harbours; I have

pointed out from the evidence before that committee that a harbour of *refuge*, the object for which they were assembled, might be formed at Redcar, and by way of comparing the pigmy produce of this committee with what they might have found, I refer your readers to the plans* in the honest and creditable report of the shipwreck committee, where it appears in all its *paltry diminutiveness* compared with the noble harbour of Port William which might be made at Redcar. Why this could not have appeared in the evidence of the committee, I will leave them to explain, and why a naval officer on that committee, who might have been supposed the sailor's real friend, could recommend the miserable places which figure on that plan to the further protection of Government, is best known to himself. But, sir, as a British Seaman, I have felt, keenly felt, the manner in which the lives of seamen have been dealt with by the committee on harbours of *refuge*; and, though I might smile at the attempt made by members of that committee to secure the useless aggrandizement of their own harbours, when I reflect on what materials they are to be raised, how can I look on with indifference, however humble my power of appealing may be, I feel their wrongs as keenly; and feelings

"Will to the weakest mind their strength impart,
And give the tongue the language of the heart,"

however that language may fail in fully displaying the merits of the cause in which it is engaged.

Mr. William Richmond in his letter to Admiral Fleeming has given a good outline of the benefits to be derived by the construction of Port William, and with a far more able pen than I can command, has shewn that it is a work, the necessity and expediency of which cannot be controverted. The following paragraph I will venture to quote from it: "To examine and trace, during a low spring ebb, the massive foundations, which seem laid by the cunning hand of nature to invite that of man to finish what has been so excellently begun, is a most interesting labour, as it shews what an extraordinary coincidence may be produced by fortuitous means, were we even to doubt or disbelieve a more direct, and higher interference in their formation. In their present position, alluding to the rocks called the east and west scars, he says, "they form the basis on which it is projected to raise those mounds of stone by whose means, as breakwaters, a safe and extensive harbour will be created with sufficient space and depth of water for a fleet of line-of-battle ships to be moored in perfect security within their limits, and still have ample room for more merchant vessels than it is probable it will ever at one time be necessary to find room for." This passage gives at once a good view of the proposed harbour at Redcar, and let no one say, that on our eastern coast, in the means of making a harbour, nature has dealt with a niggard hand. Rather let him say with Pope,

"See plastic nature working to this end,
The single atoms each to other tend."

It is somewhat consolatory that there is yet a gleam of hope in the fact that the recommendations of the committee have not yet become law. Their report has yet to appear before a British parliament, and

* The reader will find the plans with this number as before alluded to.

before British senators legislate upon it, I would conjure them, in the name of the British nation, in the name of British seamen, aye in the name of those very 501 owners and masters of vessels whose petitions were of no avail before a committee on harbours of *refuge*, and in the name of the wretched widows and orphans of the victims who have already perished from the want of such a harbour as Redcar would afford, I would entreat them as members of the senate of *maritime* England, to consider well the dangerous tendency of the report made to them, to remember that I have proved it to be *false!* to compare it with the minutes of evidence by which it is accompanied, and they will see that it is so; to bear in mind that it is a principle, a just and perfect principle, although unhappily already departed from in the instances of these dry harbours, that the expenses of all harbours should be defrayed by those who derive any benefit from them, and with these considerations before them, I would entreat them to ponder well before they take a step in which is involved the prosperity and the glory of their country. Let them remember that

“ At sea when threatening tempests rise,
When angry winds the waves deform,
The seaman lifts to heaven his eyes,
And deprecates the coming storm :”

and then let them not forget that in themselves is invested the power of averting, to a great extent, the otherwise inevitable death which awaits him, when his vessel

“ At length asunder torn, her frame divides,
And crashing, spreads in ruin o'er the tides.”

Let not our senators be unmindful of the scenes of this kind, or of the many widows and orphans resulting from them year after year, and in discussing the merits of these harbours let them turn their thoughts to

“ The wreck, the shores, the dying, and the drowned,”

and remember at least that they are legislating for the lives of British seamen.

I have given you, sir, no exaggerated picture of the horrors of that coast in easterly gales, which was selected for the committee on which to find a harbour of *refuge*. Their own report confirms it, and the minutes of the evidence accompanying it confirm it, and the report of the “*shipwreck*” committee which I have quoted, also confirms it. These are official documents themselves, without my having recourse to others, and they all confirm the facts, although they leave the horrid sickening tale which might be told of each unhappy wreck concealed, and

“ Oblivion o'er it draws a dismal shade.”

Had the committee pointed out the advantages which Redcar offers for the construction of a harbour of *refuge*, or even the protection which a breakwater at Burlington would afford, and in doing so had compared the natural advantages of the one with the disadvantages of the other, instead of stepping aside to help the miserable dry harbour of

Burlington to obtain another of those "oft-renewed acts of parliament," and with it hereafter its companions Scarborough and Whitby, which

"Cheek by jowl a useless trio lie,"

they would have done their duty: they would have shewn that a steadiness of purpose had actuated them in the pursuit of that object for which they were appointed; they would have benefited their country, they would have secured instead of having forfeited the lasting gratitude of that "large body of seamen," whose lives they professed so much zeal to preserve, and with it that of their wives and children, and they would have left a report worthy of them as British senators uncontaminated by the semblance of party purpose, and unpolluted by the charge of deliberate untruth.

A BRITISH SEAMAN.

P. S. I perceive an attempt is making by your correspondent "Nauticus," to put down the proposed harbour at Redcar by what he terms a harbour of *refuge*, at Lowestoffe. The plan is altogether too absurd to deserve attention and gives me no uneasiness as to its preceding Redcar, but it would have been becoming in him to have found a more substantial foundation to work upon than on the imagined ruin of this noble harbour, and as a sailor to have known that a salient point of coast is not the place for a harbour of refuge.

P. S. The following narrative; which I have just received, is the most recent of the thousand instances in which Port William would have saved life and property. It is dated Redcar, 26th Dec. 1836.

"I witnessed yesterday one of the frequent distressing scenes to which a resident on this coast is subjected during on shore gales. The Danish brig *Caroline* of Nalborg was observed driving fast to leeward notwithstanding all her endeavours to beat off, (the gale being from E. N. E. the first quarter flood.) She struck upon the outer quarter of the Salt Scar (Redcar rocks,) and the crew, nine in number, took to the rigging, a heavy sea again floated the vessel and she drove over the rocks; at this period the men took to their boat in the apparent hope of succour from the shore, as the Redcar life boat was then on its way to them, manned by the intrepid pilots and fishermen of that place. The crew of the Danish vessel had not quitted her five minutes before a sea broke over their little boat, and swept away all but two, who were occasionally seen amidst the surf, as the boat though filled did not capsized. The life-boat held her gallant course among the breakers, (notwithstanding she shipped three seas,) and when the cry arose "she is alongside, they are saved!" a heavy sea broke over both boats and they were lost for some time to the sight of the anxious spectators, and when the life-boat was again visible she was at least eighty fathoms to leeward and driving fast ashore, her crew were much bruised and many bleeding from blows from the broken oars, the whole of which on one side were shivered. Nothing more was seen of the crew of the Danish vessel, and to our still greater regret, William Guy, (one of the Redcar pilots,) who was standing up to throw a line was swept away. He has left his widow,

Mary Guy, of Redcar, and four young children, destitute of every hope of support, except that which Providence raises in the hearts of a generous British public.

“Not a vestige of the Caroline is left; there is also a brig ashore three miles north of this place, another at Hartlepool, and a Schooner was seen for a short time this morning whose loss is accounted a matter of certainty.”

SHIPS AND PATENTS.

To the Editor of the Nautical Magazine.

26th Dec. 1836.

SIR,—Since I had the honour to appear in the pages of the Nautical in December last, on Ships and Patents, I am happy to observe that the subject which I then aimed to illustrate, has occupied a considerable share of public attention. I meant, without detracting in the least from the merit of such ingenious inventions, to shew their utter inutility to prevent shipwrecks. It is not a little singular, that nearly in proportion to the dates when they were adopted, shipwrecks have increased. This fact is proved by the committee on shipwrecks. I pointed out in that communication, that the patents could in nowise be considered as having assisted in producing these wrecks, but the reverse. I still entertain no doubt that such has been the fact, and that the increase of shipwrecks proceeds from a cause wholly unconnected with nautical patents. I regret to have observed in the Shipping Gazette and other newspapers, that some important clauses which were in the original report of the shipwreck committee did not appear in the published report. There must surely have been some strong reasons for this, which do not appear by the evidence. I am inclined to think that the evidence would warrant much stronger language in condemnation of the present system than has been used, as well as that the case imperatively calls for more effective remedies than what have been proposed. Above all things, I think the immediate formation of a Mercantile Marine Board, indispensably and instantly necessary. I have, with much regret, observed in the Shipping Gazette, attacks on Mr. Ballingall of Kirkaldy, who, I have observed by the public press, has been mainly instrumental in bringing the subject under the notice of parliament, and the public. Mr. B—’s language appears to have been of the following nature,—“This ship is of exquisite model, and she is perfectly rigged, and has a great many patent inventions on board, all of which are highly useful, but her bottom is too thin, (for this is the great improvement aimed at by him,) and quite insufficient. The crew will have all the advantages of these good qualities whether they be commended or not, but if the insufficient bottom be unnoticed, the crew will be drowned. I therefore insist, as a *sine qua non*, on a sufficient bottom, otherwise the ship is not sea-worthy.”

And it appears to me that he has been met with answers to the following effect by the owner, who, as he points out, having his ship

insured to the full value, loses nothing by her wreck, and is therefore unwilling to incur any expense to prevent it. "What a carper is this! to say so much of an insufficient bottom, in a gallant vessel having so many fine points about her, and so many patent articles on board of her." In vain has Mr. Ballingall urged, that whilst he highly appreciated all these, they were insufficient to prevent shipwreck, which a solid and sufficient bottom would do of itself, whether these good properties were inherent in the vessel or not, and whether the patent articles were on board or not. The opposition to the solid and sufficient bottom has still been the same, and he has been met with the old, "It can't be done!" outcry. In vain has he urged the numerous shipwrecks, and fearful destruction of human life, proceeding from this cause. The outcry and opposition has still been the same, "It can't be done!" What! would you be so daring as to meddle with shipwrecks? Would you ruin the country with your pretended improvements of solid bottoms? let the shipwrecks alone; we have become a great people with shipwrecks, as it is, and with shipwrecks let us be content." Such, I observe by the public press, is the reasoning and opposition that Mr. Ballingall has had to contend against, and such will ever be the opposition to all great improvements in this country. I trust that Mr. Ballingall will not listen to their advice, nor be deterred by the opposition of interested persons, from effecting the great and obvious improvement which he has taken in hand; and that Mr. Buckingham, the talented and patriotic chairman of the committee will, immediately on the meeting of parliament, introduce a bill, to carry into effect the recommendations embraced in the very able report of the Committee on Shipwrecks. Mr. Buckingham has too much knowledge of the world to be deterred from doing good by the opposition of interested and selfish men, and I have seen it in print, that there were some such individuals on the committee. Be this as it may, it is quite certain there were some members on it directly interested in shipping, and who may be presumed averse to any alteration in the system, for the evident reason, were there no other, than that any improvement would certainly depreciate the value of their stock of shipping presently on hand. But human life and the national property must not continue to be sacrificed for such considerations. Were such plea admitted, there must be an end to all improvements. I again urge Mr. Buckingham and Mr. Ballingall to "go on," and fear not, and I can assure them, as I am daily associating with persons directly interested in merchant shipping, the opinion is all but universal amongst them, that the public have of late become too much awake to the evils of the present system, continually forced on their attention by the interminable shipwrecks, apparently without sufficient cause, to continue to tolerate it much longer, whatever may be the interest of parties. Returning you thanks for the publication of my last communication, I am, Sir,

Your obedient servant,
NEARCHUS.

EQUALITY JACK.

[From "Midshipman Easy."]

WHEN Jack Easy had gained the deck, he found the sun shining gaily, a soft air blowing from the shore, and the whole of the rigging, and every part of the ship loaded with the shirts, trowsers, and jackets, of the seamen, which had been wetted during the heavy gale, and were now hanging up to dry; all the wet sails were also spread on the booms, or triced up in the rigging, and the ship was slowly forging through the blue water. The captain and first lieutenant were standing on the gangway in converse, and the majority of the officers were with their quadrants and sextants ascertaining their latitude at noon. The decks were white and clean, the sweepers had just laid by their brooms, and the men were busy coiling down the ropes. It was a scene of cheerfulness, activity, and order, which lightened his heart after the four days of suffering, close air, and confinement, from which he had just emerged.

The captain, who perceived him, beckoned to him, asked him kindly how he felt; the first lieutenant also smiled upon him, and many of the officers, as well as his messmates, congratulated him upon his recovery.

The captain's steward came up to him, touched his hat, and requested the pleasure of his company to dinner in the cabin. Jack was the essence of politeness, took off his hat, and accepted the invitation. Jack was standing on a rope which a seaman was coiling down; the man touched his hat, and requested he would be so kind as to take his foot off. Jack took his hat off his head in return, and his foot off the rope. The master touched his hat, and reported twelve o'clock to the first lieutenant; the first lieutenant touched his hat, and reported twelve o'clock to the captain; the captain touched his hat, and told the first lieutenant to make it so. The officer of the watch touched his hat, and asked the captain whether they should pipe to dinner; the captain touched his hat and said, "If you please."

The midshipman received his orders, and touched his hat, which he gave to the head boatswain's mate, who touched his hat, and then the calls whistled cheerily.

Well, thought Jack, politeness seems to be the order of the day, and every one has an equal respect for the other. Jack stayed on deck; he peeped through the ports which were open, and looked down into the deep blue wave; he cast his eyes up aloft, and watched the tall spars sweeping and tracing with their points, as it were, a small portion of the clear sky, as they acted in obedience to the motion of the vessel; he looked forward at the range of carronades which lined the sides of the deck, and then he proceeded to climb one of the carronades, and lean over the hammocks, to gaze on the distant land.

"Young gentleman, get off those hammocks," cried the master, who was officer of the watch, in a surly tone.

Jack looked round.

"Do you hear me, sir? I'm speaking to you," said the master again.

Jack felt very indignant, and he thought that politeness was not quite so general as he supposed.

It happened that Captain Wilson was upon deck.

"Come here, Mr. Easy," said the captain; "it is a rule in the service, that no one gets on the hammocks, unless in case of emergency—I never do—nor the first lieutenant—nor any of the officers or men; therefore, upon the principle of equality, you must not do it either."

"Certainly not, sir," replied Jack, "but still I do not see why that officer in the shining hat should be so angry, and not speak to me as if I were a gentleman, as well as himself."

"I have already explained that to you, Mr. Easy."

"O yes, I recollect now, it's zeal; but this zeal appears to me to be the only unpleasant thing in the service. It's a pity, as you said, that the service cannot do without it."

Captain Wilson laughed, and walked away, and shortly afterwards, as he turned up and down the deck with the master, he hinted to him, that he should not speak so sharply to a lad who had committed such a trifling error, through ignorance. Now Mr. Smallsole, the master, who was a surly sort of a personage, and did not like even a hint of disapprobation of his conduct, although very regardless of the feeling of others, determined to pay this off on Jack, the very first convenient opportunity. Jack dined in the cabin, and was very much pleased to find that every one drank wine with him, and that every body at the captain's table appeared to be on an equality. Before the dessert had been on the table five minutes, Jack became loquacious on his favourite topic; all the company stared with surprise at such an unheard-of doctrine being broached on board of a man-of-war; the captain argued the point, so as to controvert, without too much offending, Jack's notions, laughing the whole time that the conversation was carried on.

It will be observed, that this day may be considered as the first in which Jack really made his appearance on board, and it also was on this first day that Jack made known, at the captain's table, his very peculiar notions. If the company at the captain's table, which consisted of the second lieutenant, purser, Mr. Jolliffe, and one of the midshipmen, were astonished at such heterodox opinions being started in the presence of the captain, they were equally astonished at the cool, good-humoured ridicule with which they were received by Captain Wilson. The report of Jack's boldness, and every word and opinion that he had uttered, (of course much magnified,) was circulated that evening through the whole ship; it was canvassed in the gun-room by the officers, it was descanted upon by the midshipmen as they walked the deck; the captain's steward held a levee abreast of the ship's funnell, in which he narrated this new doctrine. The sergeant of marines gave his opinion, in his berth, that it was damnable. The boatswain talked over the matter with the other warrant officers, till the grog was all gone, and then dismissed it as too dry a subject: and it was the general opinion of the ship's company, that as soon as they arrived at Gibraltar Bay, our hero would bid adieu to the service, either by being sentenced to death by a court-martial, or by being dismissed, and towed on shore on a grating. Others, who had more of the wisdom of the serpent, and who had been informed by Mr. Sawbridge that our hero was a lad who would inherit a large property, argued differently, and considered that Captain Wilson had very good reason for being so lenient—and among them was the second lieute-

nant. There were but four who were well inclined towards Jack—to wit, the captain, the first lieutenant, Mr. Jolliffe, the one-eyed master's mate, and Mephistopheles, the black, who, having heard that Jack had uttered such sentiments, loved him with all his heart and soul.

We have referred to the second lieutenant, Mr. Asper. This young man had a very high respect for birth, and particularly for money, of which he had very little. He was the son of an eminent merchant, who, during the time that he was a midshipman, had allowed him a much larger sum for his expenses than was necessary or proper; and, during his career, he found that his full pocket procured him consequence, not only among his own messmates, but also with many of the officers of the ships that he sailed in. A man who is able and willing to pay a large tavern bill, will always find followers—that is, to the tavern; and lieutenants did not disdain to dine, walk arm-in-arm, and be “hail fellow well met” with a midshipman, at whose expense they lived during the time they were on shore. Mr. Asper had just received his commission and appointment, when his father became a bankrupt, and the fountain was dried up from which he had drawn such liberal supplies. Since that, Mr. Asper had felt that his consequence was gone: he could no longer talk about the service being a bore, or that he should give it up; he could no longer obtain that deference paid to his purse, and not to himself; and he had contracted very expensive habits, without having any longer the means of gratifying them. It was therefore no wonder that he imbibed a great respect for money; and, as he could no longer find the means himself, he was glad to pick up any body else at whose cost he could indulge in that extravagance and expense to which he had been so long accustomed, and still sighed for. Now, Mr. Asper knew that our hero was well supplied with money, as he had obtained from the waiter the amount of the bill paid at the Fountain, and he had been waiting for Jack's appearance on deck to become his very dearest and most intimate friend. The conversation in the cabin made him feel assured that Jack would require, and be grateful for support, and he had taken the opportunity of a walk with Mr. Sawbridge, to offer to take Jack in his watch. Whether it was that Mr. Sawbridge saw through the design of Mr. Asper, or whether he imagined that our hero would be better pleased with him than with the master, considering his harshness of deportment; or with himself, who could not, as first lieutenant, overlook any remission of duty, the offer was accepted, and Jack Easy was ordered, as he now entered upon his duties, to keep watch under Lieutenant Asper.

But not only was this the first day that Jack may be said to have appeared in the service, but it was the first day in which he had entered the midshipman's berth, and was made acquainted with his messmates.

We have already mentioned Mr. Jolliffe, the master's mate, but we must introduce him more particularly. Nature is sometimes extremely arbitrary, and never did she shew herself more so than in insisting that Mr. Jolliffe should have the most sinister expression of countenance that ever had been looked upon.

He had suffered martyrdom with the smallpox, which probably had

contracted his lineaments; his face was not only deeply pitted, but scarred with this cruel disorder. One eye had been lost, and all eyebrows had disappeared—and the contrast between the dull, sightless opaque orb on one side of his face, and the brilliant, piercing, little ball on the other, was almost terrifying. His nose had been eaten away by the disease, till it formed a sharp but irregular point; part of the muscles of the chin were contracted, and it was drawn in with unnatural seams and puckers. He was tall, gaunt, and thin—seldom smiled, and when he did, the smile produced a still further distortion.

Mr. Jolliffe was the son of a warrant officer. He did not contract this disease until he had been sent out to the West Indies, where it swept away hundreds. He had now been long in the service, with little or no chance of promotion. He had suffered from indigence, from reflections upon his humble birth, from sarcasms on his appearance. Every contumely had been heaped upon him at one time or another, in the ships in which he served; among a crowd he had found himself desolate—and now, although no one dared treat him to his face with disrespect, he was only respected in the service from a knowledge of his utility and exemplary performance of his duties—he had no friends, or even companions. For many years he had retired within himself—he had improved by reading and study, had felt all the philanthropy of a Christian, and extended it towards others. Silent and reserved, he seldom spoke in the berth, unless his authority, as caterer, was called for; all respected Mr. Jolliffe, but no one liked, as a companion, one at whose appearance the very dogs would bark. At the same time every one acknowledged his correct behaviour in every point—his sense of justice, his forbearance, his kindness, and his good sense. With him life was indeed a pilgrimage, and he wended his way in all christian charity and all christian zeal.

In all societies, however small they may be, provided that they do but amount to half-a-dozen, you will invariably meet with a bully. And it is also generally the case that you will find one of that society who is more or less the butt. You will discover this even in occasional meetings, such as a dinner party, the major part of which have never met before.

Previous to the removal of the cloth, the bully will have shewn himself by his dictatorial manner, and will also have selected the one upon whom he imagines that he can best practise. In a midshipman's berth this fact has become almost proverbial, although now perhaps it is not attended with that disagreeable despotism which was permitted at the time that our hero entered the service.

The bully of the midshipman's berth of H. M. sloop Harpy was a young man about seventeen, with light, curly hair, and florid countenance, the son of the clerk in the dockyard at Plymouth, and his name was Vigers.

The butt was a pudding-faced Tartar physognomied boy of fifteen, whose intellects, with fostering, if not great, might at least have been respectable, had he not lost all confidence in his own powers from the constant jeers and mockeries of those who had a greater fluency of speech, without perhaps so much real power of mind. Although slow, what he learnt he invariably retained. This lad's name was Gosset.

His father was a wealthy yeoman of Lynn, in Norfolk. There were at the time but three other midshipmen in the ship, of whom it can only be said that they were like midshipmen in general, with little appetite for learning, but good appetites for dinner—hating every thing like work, fond of every thing like fun—fighting à l'outrance one minute, and sworn friends the next—with general principles of honour and justice, but which were occasionally warped according to circumstances; with all the virtues and vices so heterogeneously jumbled and heaped together, that it was almost impossible to ascribe any action to its true motive, and to ascertain to what point their vice was softened down into almost a virtue, and their virtues, from mere excess, degenerated into vice. Their names were O'Connor, Mills, and Gascoigne. The other shipmates of our hero it will be better to introduce as they appear on the stage.

After Jack had dined in the cabin, he followed his messmates, Jolliffe and Gascoigne, down into the midshipmen's berth.

"I say, Easy," observed Gascoigne, "you are a devilish free and easy sort of a fellow, to tell the captain that you considered yourself as great a man as he was."

"I beg your pardon," replied Jack, "I did not argue individually, but generally, upon the principles of the rights of man."

"Well," replied Gascoigne, "it's the first time I ever heard a middy do such a bold thing; take care your rights of man don't get you in the wrong box—there's no arguing on board of a man-of-war. The captain took it amazingly easy, but you'd better not broach that subject too often."

"Gascoigne gives you very good advice, Mr. Easy," observed Jolliffe; "allowing that your ideas are correct, which it appears to me they are not, or at least impossible to be acted upon, there is such a thing as prudence, and however much this question may be canvassed on shore, in his Majesty's service it is not only dangerous in itself, but will be very prejudicial to you."

"Man is a free agent," replied Easy.

"I'll be shot, if a midshipman is," replied Gascoigne, laughing, "and that you'll soon find."

"And yet it was with the expectation of finding that equality that I was induced to come to sea."

"On the first of April, I presume," replied Gascoigne. "But are you really serious?"

Hereupon Jack entered into a long argument, to which Jolliffe and Gascoigne listened without interruption, and Mesty with admiration—at the end of it Gascoigne laughed heartily, and Jolliffe sighed.

"From whence did you learn all this?" inquired Jolliffe.

"From my father, who is a great philosopher, and has constantly upheld these opinions."

"And did your father wish you to go to sea?"

"No, he was opposed to it," replied Jack, "but of course he could not combat my rights and free will."

"Mr. Easy, as a friend," replied Jolliffe, "I request that you would as much as possible keep your opinions to yourself; I shall have an opportunity of talking to you on the subject, and will then explain to you my reasons."

As soon as Mr. Jolliffe had ceased, down came Mr. Vigors and O'Connor, who had heard the news of Jack's heresy.

"You do not know Mr. Vigors and Mr. O'Connor," said Jolliffe to Easy.

Jack, who was the essence of politeness, rose and bowed, at which the others took their seats, without returning the salutation. Vigors had, from what he had heard and now seen of Easy, thought that he had somebody else to play upon, and without ceremony he commenced.

"So, my chap, you are come on board to raise a mutiny here with your equality—you came off scot free at the Captain's table; but it won't do, I can tell you, even in the midshipman's berth: some must knock under, and you are one of them."

"If, sir," replied Easy, "you mean by knock under, that I must submit, I can assure you that you are mistaken. Upon the same principle that I would never play the tyrant to those weaker than myself, so will I resent oppression if attempted."

"Damme, but he's a regular sea lawyer already: however, my boy, we'll soon put your metal to the proof."

"Am I then to infer that I am not on an equality with my mess-mates?" replied Jack, looking at Jolliffe. The latter was about to answer him, but Vigors interrupted.

"Yes, you are on an equality as far as this, that you have an equal right to the berth, if you are not knocked out of it for insolence to your masters; that you have an equal share to pay for the things purchased for the mess, and an equal right to have your share, provided you can get it; you have an equal right to talk, provided you are not told to hold your tongue. The fact is, you have an equal right with every one else to do as you can, get what you can, and say what you can, always provided that you can do it; for here the weakest goes to the wall, and that is midshipman's berth equality. Now, do you understand all that; or will you wait for a practical illustration?"

"I am then to infer that the equality here is as much destroyed as it even will be among savages, where the strong oppress the weak, and the only law is club law—in fact, much the same as it is at a public or large school on shore?"

"I suspect you are right for once. You were at a public school: how did they treat you there?"

"As you propose treating people here, 'the weakest went to the wall.'"

"Well, then, a nod's as good as a wink to a blind horse: that's all, my hearty," said Vigors.

But the hands being turned up, "Shorten sail" put an end to the altercation for the present.

As our hero had not yet received orders to go to his duty, he remained below with Mesty.

"By de powers, Massa Easy, but I lub you with my hole soul," said Mesty. "By Jasus, you really tark fine, Massa Easy; dat Mr. Vigor—nebber care for him, wouldn't you lik him—and sure you would," continued the black, feeling the muscle of Jack's arm. "By the soul of my fader, I'd bet my weck's allowance on you any how. Nebber be 'fraid, Massa Easy."

"I am not afraid," replied Jack; "I've thrashed bigger fellows than he;" and Jack's assertion was true. Mr. Bonnycastle never interfered in a fair fight, and took no notice of black eyes, provided the lessons were well said. Jack had fought and fought again, until he was a very good bruiser; and although not so tall as Vigers, he was much better built for fighting. A knowing Westminster boy would have bet his half-crown upon Jack, had he seen him and his anticipated adversary.

The constant battles which Jack was obliged to fight at school, had been brought forward by Jack against his father's arguments in favour of equality, but they had been overruled by Mr. Easy's pointing out that the combats of *boys* had nothing to do with the rights of man.

As soon as the watch was called, Vigers, O'Connor, Gossett, and Gascoigne, came down into the berth. Vigers, who was the strongest in the berth, except Jolliffe, had successively had his superiority acknowledged, and, when on deck, he had talked of Easy's impertinence, and his intention of bringing him to his senses. The others, therefore, came down to see the fun.

"Well, Mr. Easy," observed Vigers, as he came into the berth, "you take after your name, at all events; I suppose you intend to eat the king's provision, and do nothing."

Jack's mettle was already up.

"You will oblige me, sir, by minding your own business," replied Jack.

"You impudent blackguard, if you say another word, I'll give you a good thrashing, and knock some of your equality out of you."

"Indeed," replied Jack, who almost fancied himself back at Mr. Bonnycastle's; "we'll try that."

Whereupon Jack very coolly divested himself of his upper garments, neckerchief, and shirt, much to the surprise of Mr. Vigers, who little contemplated such a proof of decision and confidence, and still more to the delight of the other midshipmen, who would have forfeited a week's allowance to see Vigers well thrashed. Vigers, however, knew that he had gone too far to retreat: he therefore prepared for action; and, when ready, the whole party went out into the steerage to settle the business.

Vigers had gained his assumed authority more by bullying than fighting; others had submitted to him without a sufficient trial; Jack, on the contrary, had won his way up in school by hard and scientific combat: the result, therefore, may easily be imagined. In less than a quarter of an hour Vigers, beaten dead, with his eyes closed, and three teeth out, gave in; while Jack, after a basin of water, looked as fresh as ever, with the exception of a few trifling scratches.

The news of this victory was soon through the ship; and before Jack had resumed his clothes, it had been told confidentially by Sawbridge to the captain.

"So soon!" said Captain Wilson, laughing; "I expected that a midshipman's berth would do wonders; but I did not expect this, yet awhile. This victory is the first severe blow to Mr. Easy's equality, and will be more valuable than twenty defeats. Let him now go to his duty: he will soon find his level."

THE BEAGLE'S VOYAGE.

[Concluded from page 31.]

ON Mocha island, formerly well peopled by Indians, there are now no aboriginal inhabitants. A few natives of Concepcion, or Valdivia, now live there, for the sake of sealing on the rocks. Mocha is high, with deep water around it; but straggling, dangerous rocks lie near, towards the south-west.

All the west coast of South America, with but few exceptions, is similar in character. High, steep, rocky shores, with deep water near them, are almost everywhere found.

The Galapagos* islands are all volcanic, of comparatively recent formation. Their lavas seem to be very durable, and vegetation makes small progress. On five islands there are fertile spots; at one of which, Charles Island, a small colony has lately been established by the government of Guayaquil.

There are six principal, and seven small islands. The largest is sixty miles in length, and about fifteen broad. The highest part is 4,000 feet above the sea. At first landing upon their shores, black, dismal-looking heaps of broken lava everywhere meet the eye. Innumerable crabs, hideous iguanas, (or rather large lizards,) and great elephant tortoises, startle and surprise the visitor. These two latter reptiles are peculiar to the Galapagos. These animals grow to a great size—to several hundred pounds in weight. Their feet are then like those of a small elephant. Few reptiles are uglier than the black lizards. They are about three feet in length. Their great mouth has a pouch hanging under it. A spiny sort of mane is on the neck and back. They have long claws and tail, and are of a dirty black colour. They swim with ease and swiftness, using their tails only.

A little way inland, on the windward side of the island, there is much underwood, and some crooked trees nearly two feet in diameter. How they penetrate, or derive nourishment from, the hard lava, is astonishing.

The little colony is established on Charles Island, in a plain about 1,000 feet above the sea. To go there, we ascended gradually from the shore, till we reached the edge of the rocky height, which limited our view. Surprisingly sudden and agreeable was then the change. Heated and tired by a dusty up-hill walk, through sun-dried trees, and over rugged lava, we were at once refreshed by a cool breeze, while our eyes enjoyed an unexpected view of a fertile and cultivated plain. Surrounded by tropical vegetation, by bananas, sugar-canes, sweet potatoes, and Indian corn, all luxuriantly flourishing, it was hard to believe that land so sterile, and apparently so useless, as that we had just passed, could be so close to such rich fertility.

In a small cave near the top of this island, an old sailor lived many years. He had been unfortunate, and was tired of the world. Terrapin (or land tortoises) and sweet potatoes were his food. An old friend, the master of a whaler, recognized him, and carried him away by force; for so strongly was the old man attached to his cave, that no motive was sufficient to induce him to leave it.

* Pronounced Galápagos.

Besides affording a wholesome and palatable food, the terrapin yield an excellent oil. But it is a pity to kill them for this purpose; they are so useful to the crews of whale ships.

The little colony can now supply shipping with vegetables, fowls, and pigs. Very soon they will have cattle, sheep, and goats. Water for shipping can only be procured at the south side of Chatham Island.

The particular names of these islands were given by the old Buccaneers, and by Colnett.

More instances of the manner in which high land deprives wind of its moisture may be seen at each of the Galapagos. Situated in a perennial wind, only those sides which are exposed to it are covered with verdure, and have water. All else is dry and barren.

Passing a projecting headland, all on board were astonished at the wildness and grandeur of the scene which opened as the ship sailed round. Immense craters, suddenly rising from the sea; enormous masses of black lava; and a multitude of fumeroles, scattered in every direction; gave one the idea of an immense Cyclopien iron foundry. In many places the lava cliffs are very high; while close to them, the water is so deep that a ship cannot anchor, even in a calm. From this situation, dismal indeed was the view, yet interesting. To see such an extent of country overwhelmed by lava, and to think of the possible effects of seven dormant volcanoes then in sight, was most impressive.

Remarkable currents are found about the Galapagos. In some places they run three, four, or even five miles an hour, generally, but not always, to the north-west. On one side of an island the temperature of the sea is sometimes found to be near eighty, while on the other the water is at less than sixty degrees (Fahrenheit.) These striking differences may be owing to the cool current which comes from the southward, along the coast of Chiloe and Peru, meeting a far warmer stream from the neighbourhood of the bay of Panama. The manner in which these great ocean streams preserve their temperature has been remarked: they must have much effect upon the climates of those countries near the sea, along the shores of which they pass.

The Dangerous Archipelago is deserving of such a name. Numerous coral islets, only a few feet above water, obstruct navigation; while currents and strong squalls add to the risk. Singular interruptions to the trade-wind are caused by these low lagoon islands; not only does the trade often fail among them, but heavy squalls come from the opposite direction, and more frequently by night than by day. Clouds are said to be attracted, if not partly caused, by land or by trees. As the low islands of this archipelago have no hill or height of any kind, about which the clouds attracted by them can gather and discharge their contents, whether electrical or fluid, perhaps those clouds, wanting a conductor, discharge themselves irregularly, and in squalls. Where high land acts as a conductor between the upper regions of the air and the earth, there may be a continual, though unperceived, electrical action.

Otaheite, or Tahcite, as it is more correctly called, is indeed beautiful. It was seen early in the morning, with clouds over it; but as the sun rose higher the clouds shrunk away, vanishing as they rolled off the grandly-formed mountains. High, sharp, irregular peaks, and huge masses of rock, appeared between the clouds, and again were hidden.

Deep valleys, or glens, shewed darkly; and as the shadows passed, seemed to be denied the light of day. Strikingly different in appearance were the lower hills, and the richly wooded land at the sea-side. There the bright sunshine heightened the vivid and ever-varying tints of a rich verdure. Every kind of green, a beautiful alternation of light and shade, each moment changing as the light clouds passed; the groves of graceful palm trees, and the dazzling white foam of the breakers on the coral reefs, contrasted by the deep blue of the sea, combined to form a most enchanting view.

But few days were passed at this delightful island. What little was seen of the missionaries, their labour, and its effects, highly gratified the visitors. But they were yet more gratified by hearing of the number of native missionaries who had gone into other distant islands, (having been educated at Tahiti,) and of the beneficial effects produced by them. Wherever the missionary succeeds in obtaining even a slight influence, there the seaman may go in safety. He should not be ungrateful; he should not be among the first to seek for faults. What man—what human institution is blameless?

In the Gambier Islands there is now a Roman Catholic mission. It is said to be well supported.

What a fine fertile country is the northern island of New Zealand; and how fast the character of that land and its inhabitants is changing! An Englishman may now walk alone and unmolested about any part of the northern island, where, ten years ago, such an attempt would have been a rash braving of the club and the oven.

English and American houses are scattered near the Bay of Islands; and settlers are rapidly increasing. All this is chiefly due to the Church Missionary Society.

Nothing could be more gratifying than the view of a flourishing agricultural settlement, with good farm-houses, barns, water-mill, mechanics' shops, and large gardens, in the interior of the northern island. Captain Fitzroy expresses his surprise at seeing a New Zealander come out of a mill, powdered with flower, and carrying a sack of corn upon his back; an effect caused by the missionaries.

Sydney and Hobart Town are known well; yet every one is not aware of the great difficulty of bringing up a family well in those countries, owing to the demoralizing influence of convict servants, to which children must more or less be exposed. Nor is every one aware of the extent of that rancorous feeling which is caused by the total separation of the descendants of convicts, as well as the emancipists, from free settlers and their families, as well as from all who are officially employed.

At King George's Sound they are not doing much, but are very sanguine.

Swan River, notwithstanding its untoward exposure to the most frequent winds, is flourishing.

An English family has settled upon the Keeling* Islands, where they make cocoa-nut oil, and catch abundance of turtle. Every creature upon those islands seemed to live principally upon cocoa-nuts: pigs, ducks, fowls, and even large crabs, are dependent upon them.

* See an interesting account of these islands in p. 578, Nautical Mag. for 1833.

The Keelings, or Cocos, are a cluster of low coral islands, almost surrounding a lagoon. Within half a mile of them no bottom was found, with more than one thousand fathoms of line, (1,600 were out.) Some of the fish live upon coral branches, for which kind of grazing they are furnished with strong front teeth.

Before a hurricane at the Mauritius, the water rises considerably, and is agitated. In other parts of the world, the sea rises before a storm some feet above its usual level. At the same time mercury in a barometer falls. Is not this rising of the waters caused by diminished pressure of the atmosphere at those places, while at other more distant parts there is an increased pressure?

Returning homeward by St. Helena, Ascension, and the Cape de Verd Islands, Captain Fitzroy had opportunities of proving that the rollers,* which sometimes set heavily upon their shores, are caused by distant gales of wind. Those at Ascension and St. Helena, for instance, by Pamperos, and those at the Cape de Verds, by the severe, though generally short, gales met with between the tropics in the time of the fine westerly monsoon. These latter gales may also send rollers towards the north-west side of Ascension.

The heavy rollers which sometimes set in upon the coasts of Chiloe and Peru led Capt. Fitz Roy to seek for proofs of the causes being such as he then suspected. But there is at times another kind of "rollers," which are perhaps caused by an earthquake. Tides, and their causes, dip, intensity, and variation, temperature of air and water, pressure of the atmosphere, and some other matters, have been regularly observed.

QUERIES FOR NAUTICAL MEN. *By Professor Whewell, of Trinity College, Cambridge.*

1. WHETHER the velocity of waves cannot be determined?

(For instance, by towing a cask astern, when going before the wind, and by observing the time which the wave employs to travel from the cask to the ship, adding the velocity of the ship through the water.)

2. Whether the velocity of waves varies with their size?

3. Whether the velocity of waves varies with the depth of the water?

4. Whether the following rules are not generally true, with respect to the streams of flood and ebb?

(a) That in a channel open at both ends, the turn in the direction of the stream happens three hours after the time of high and low water; and the time of high and low water is when the stream runs fastest each way.

(b) That in a channel closed at one end, the turn in the direction of the stream happens less than three hours after the time of high water; and is nearer and nearer to the time of high water as you approach the closed end of the channel.

5. Whether the stream of flood and ebb does not generally run fastest where the tide travels slowest, and vice versâ?

* The reader will find another theory accounting for this phenomenon, in the *Nautical Magazine* for 1835, p. 101, advanced by Mr. Webster, Surgeon, R.N.

(For example, in some narrow seas the "tide wave" which brings high water does not travel more than thirty or forty miles an hour, and the stream of flood and ebb is strong; but in the ocean the tide in some places travels 300 or 400 miles an hour, while the tide stream is very slight.)

6. Whether many mistakes are not made in stating the *rise* and *height* of high water, by not attending to the difference of the two tides on the same day?

(For this difference is often very considerable.)

7. Whether many mistakes are not made in stating the *time* of high and low water, in consequence of reckoning by the age of the moon, instead of reckoning by the time of the moon's transit?

(For on the *day* of new or full moon the moon's *transit* may be twenty-four minutes before noon, or it may be twenty-four minutes after noon; and the real time of high water will differ forty-eight minutes in consequence of this difference.)

8. Whether mistakes are not made in consequence of referring heights to the "level of the sea" at low or high water?

(For the points of low water at different places (the rise of the tide being different) are not at the same level; and therefore if the same object be compared with low water at different places, it may be supposed to have different heights above the level of the sea: and the same is true of high water.)

9. Whether mistakes are not made in determining the time and rise of high water at a distance from land, by supposing the time and rise of high water at such points to be intermediate between the times and the heights of places on shore at equal distances from it?

(For it appears, by examining the cause of the "tide wave," that it does not travel in straight lines, nor with a uniform velocity, nor with a constant height.)

10. Whether in places at a distance from land (in soundings) some accurate method cannot be devised of determining the time and rise of high water by observation?

11. Whether in general the rise of the tide at a distance from land be not less than the rise on the nearest shores, and whether the time of high water at such places be not earlier than it is on the shore?

12. Whether corresponding observations cannot be collected of the peculiar waves called *rollers*, which at times visit coasts and islands in the southern seas; and whether in this way the course and velocity of these waves cannot be ascertained?

Jan. 10, 1837.

CAUTION.—THE BONETTA ROCK, ATLANTIC OCEAN.

[We have received the following from our esteemed correspondent, Lieut. Liddell, R.N.]

To the Editor of the Nautical Magazine.

Ship Wellington, 9th Sept., 1836, Lat. 4° N., Long. 18° N.

DEAR SIR,—I yesterday boarded the *Wave*, of London, and felt much interested, as no doubt many of your nautical readers will be, in the information received from her commander, of a shoal seen by him on the 26th ult., off Bona Vista, supposed to be the one on which the *Madeline* was wrecked in April, last year. Capt. Goldsmith states that he distinctly saw the breakers on this shoal, while passing to leeward of it at 11h. P.M., the high land of Bona Vista bearing W. by S.,

distant about six or seven leagues. By a curious coincidence I found on board the *Wave* the *original protest* of the commander and crew of the *Madeline*, taken before the American consul at Porto Praya, a few days after her loss. This protest was in possession of the son of the owner of that vessel, who happened to be a passenger in the *Wave*. As no account of the shoal, or loss of the *Madeline*, has been given among the numerous valuable hydrographical records of your Magazine, I will here insert a short extract from the said protest. It states, "that at 2, P.M., 5th April, the breeze being moderate from N.E., the vessel struck on an unknown shoal, the island of Bona Vista bearing west seven or eight leagues, that the lead was hove and two fathoms found under the main chains, that the rudder and keel being instantly knocked away, the ship was hove by the sea into deep water, where no bottom was found—that the well was sounded and five feet found in it, and that, notwithstanding all their exertions, she filled rapidly; that, having ten feet water in the hold, and the vessel settling fast, the commander and all the crew took to their boats, and the next evening reached Porto Praya."

This was the first time I had heard of the shoal or the loss of the *Madeline*, and my astonishment was great indeed, for I had passed several times nearly over the reported site, and having the beautiful chart of the Cape Verde islands from Vidal and Mudge's surveys, in 1820, in my possession, they had given me such perfect confidence that I never dreamed of danger in the vicinity of the islands.

By a glance at the chart you will perceive that this shoal is in the very high road for vessels intending to touch at St. Jago, the number of which is yearly very considerable, and however difficult it may be to doubt the solemn testimony of a protest, joined with Capt. Goldsmith's declaration, it does certainly seem inexplicable that it should have remained so long undiscovered.

Hoping that you will be able to pick up some farther information on this important subject, and publish it for the benefit of your maritime friends,

I remain, dear sir,

Very truly yours,

JAMES LIDDELL.

The following is an extract of a letter from Capt. Vidal, R.N., of H.M.S. *Ætna*, on the same subject:—

"On our arrival at Porto Praya, the American consul informed us that the English ship *Madeline*, Capt. Hamilton, Thos. Meaburn owner, struck on a rock off Bonavista in lat. 16° 19' 4" N. lon. 22° 19' W., and was lost. She had chronometers on board, was bound to Sydney, and her logbook was saved, with other papers. She was lost on the 5th or 7th April, 1835. The crew reached Porto Praya in their long boat, two or three days after the accident. This is the Bonetta shoal, and would appear to be much nearer Bona Vista, than the positions assigned to it."

The *Madeline* stands No. 168, in p. 445 of our table of wrecks in the volume for 1835: and she is there stated to have been wrecked on the Hartwell Reef. This, however, appears to be an error, and we have more faith in the position assigned to it by Capt. Vidal, than the vague one of the *Wave*. Still its situation is uncertain, and until it

can be finally ascertained, we caution vessels running for Porto Praya to be careful how they pass the island of Bona Vista, as the rock lies directly in their track.

NEW LIGHTHOUSES.

[We find the following notices of new Lighthouses in that valuable publication, the *Annales Maritimes*.]

NEW LIGHTHOUSE OF CHASSIRON, (*Isle Oleron*,) department of *La Charante Inferieure*.

NAVIGATORS are hereby informed that from the 1st of Dec., 1836, the fixed light of the old tower of Chassiron on the N.W. point of Isle Oleron in lat. $46^{\circ} 2' 52''$ N., and long. $3^{\circ} 44' 56''$ W. ($1^{\circ} 24' 36''$ W. of Greenwich,) will be discontinued, and replaced by a light of similar character, which will be lighted every night in the tower recently constructed at 328 feet (English) E. by S. from the old lighthouse.

The new light apparatus is 430 metres (141 E. feet) above the ground, and 50 metres (164 E. feet) above the level of the sea at high water of equinoctial springs. The light will be visible in fine weather, distant 21 miles.

LIGHT OF VLIELAND.

Hague, 5th Nov., 1836.

THE Director general of marine gives notice to navigators that the fixed light, for the distinguishing the coast on the isle of Vlieland, (destined to replace that which previously existed, and the construction of which was announced in the notice of the 9th of April last,) being now ready, will be commenced on Tuesday, the 15th Nov., 1836; that the light will be visible in the same direction that the coal-fire light was which it supersedes; and, that it will be visible at the distance of three German miles, (about twelve English,) more or less, according to the state of the atmosphere.

CURRENTS OF THE OCEAN.

Foreign Office, January 4th, 1837.

SIR,—I am directed by Viscount Palmerston to transmit to you, for the information of the Lords Commissioners of the Admiralty, the copy of a despatch from his Majesty's consul at Boulogne, enclosing the copy of a paper found in a bottle which was picked up at sea, a few miles to the eastward of that port, and which purports to have been thrown overboard in lat. $50^{\circ} 20'$ N., long. 19° W., from the British troop ship *Kent*, bound for Quebec, with a view of ascertaining the direction of the current in the Atlantic.

I am, Sir, your most obedient humble servant,

J. BACKHOUSE.

British Consulate, Boulogne, December 24, 1836.

Sir,—I beg leave to transmit to you the enclosed copy of a writing found in a bottle which was picked up near to Cape Blanc Nez, a few

miles to the eastward of Boulogne, on the 20th instant ; and as the insertion of it in the public prints is requested, and may be of service to nautical men, I have forwarded it to you for that purpose, should you deem it expedient.

I have the honour, &c.

(Signed,)

W. HAMILTON.

John Backhouse, Esq., &c.

Troop ship Kent, with detachments of the Royal Artillery, Royals, and 66th regiment on board, bound for Quebec—all well. This bottle is thrown overboard for the purpose of ascertaining the direction of the current, for the benefit of all sea-going men, the ship having been for several days past found considerably to the southward of her reckoning ; and it is particularly requested that the finder of this, in whatever quarter of the world, will cause the same to be inserted in the newspapers. W. L.

Ship Kent, lat. 50° 20' N., long. 19° 0' W.

August 19th, 1836.

I certify the above to be a true and faithful copy of the original, picked up near to Cape Blanc Nez, a few miles to the eastward of Boulogne, on the 20th instant.

Boulogne, 23rd Dec., 1836.

(Signed,)

W. HAMILTON,

H. B. M. Consul at Boulogne.

The course of this bottle affords a good illustration of the prevailing set of the currents generally up the English channel. The distance which it has drifted is about 840 miles, or sixty-six per day. In a former number we noticed a similar indraft, and the bottle in that case was also found near Boulogne. In another number we propose laying before our readers a rather numerous collection, which we have on our hands, of these interesting messengers, from which some very curious and satisfactory results may be deduced.

CAUTION TO SEAMEN—NEWARP LIGHT-VESSEL.

Trinity-House, London, 9th Jan. 1837.

INFORMATION having been received that the Newarp light-vessel was run foul of by a light brig, on the morning of the 7th instant, and so seriously damaged as to render it improbable that she could retain her station, notice thereof is hereby given ; and masters of vessels, and others, are cautioned to keep a good look-out, in case it shall have been found unavoidably necessary to bring the light-vessel into harbour, before a temporary vessel can be prepared to exhibit the lights in her stead, and for the completion of which, with all possible dispatch, every exertion is making.

By order,

J. HERBERT, Secretary.

LIGHTS ON THE EAST COAST OF ENGLAND.

Trinity-House, 10th Jan. 1837.

In pursuance of the intention expressed in the notice from this house, dated the 16th of December, *Floating Light-vessels* have been moored in the following situations, and with the marks and compass bearings hereunder given, viz. :—

St. Nicholas Gatt, in six fathoms low-water spring-tides.	
St. Nicholas Buoy, bearing	S.E. $\frac{1}{2}$ S.
Gorleston South Mill in line with the South Pier of Yarmouth Harbour	W. by N. $\frac{1}{4}$ N.
Yarmouth Church Tower, its apparent width open Northward of Yarmouth Jetty	N. by W. $\frac{1}{4}$ W.
Kettle Bottom Buoy	N.N.E. $\frac{1}{2}$ E.
Inner Cross Sand and Cross Sand Buoy, in line	S. by E. $\frac{3}{4}$ E.
N.W. Corton Spit Buoy	S. $\frac{1}{2}$ E.
N.W. Corton Buoy	S. $\frac{1}{2}$ W.
N.E. end of the Shipwash Sand, in four fathoms and three-quarters.	
*The N. E. Shipwash Buoy, bearing	S.W.
N.E. Baudsey Buoy	W. by N. $\frac{3}{4}$ N.
Orfordness High Lighthouse	N. $\frac{1}{2}$ W.
Western End of the Swin Middle Sand, in four fathoms.	
The Middle Buoy, bearing	E. by S. $\frac{3}{4}$ S.
Sheers Beacon	S.W. $\frac{1}{4}$ W. Westerly
Whitaker Beacon	N. $\frac{1}{4}$ E.
Whitaker Buoy	N.E. $\frac{3}{4}$ N.
North Hook Middle Buoy	E. by N. $\frac{1}{2}$ N.

Masters of vessels, pilots, and others, are to observe that the light is exhibited at each of these stations by a single lantern, elevated thirty-six feet above the water, and that during the day each vessel is distinguished by a red ball at the masthead, which, in the event of her driving from the proper station, will be taken down.

The vessels are painted red, and the stations marked in large letters on their sides.

By order, J. HERBERT, Secretary.

YARMOUTH ROADS.

To the Editor of the *Nautical Magazine*.

H.M.S. Fairy, Woolwich, January 18th, 1837.

SIR,—The *Nautical Magazine* being a medium through which much valuable hydrographical information is conveyed to the public, I shall offer no apology for forwarding you a few remarks on the past and present condition of the navigation of Yarmouth Roads.

The value of Yarmouth roads as a rendezvous and general anchorage is well known to the nautical world, especially to that portion of

* Note.—The buoy at the north-east end of the Shipwash Sand is ordered to be taken away; and the buoy at the south-west end of that sand will be distinguished by a staff and ball.

it engaged in the coasting, colliery, and Baltic trades, inasmuch as these roads form the high road (as it were) for all vessels employed in those trades, and afford them ample and secure anchorage when bound to the southward against prevailing S.W. gales, or to the northward against N.E. gales.

The whole space from Lowestoft-ness (the most easterly projection of Great Britain) to Caiston, northwards, forms one continuous line of anchorage, of twelve miles in length, and on the average about one mile in breadth, and is capable of containing several hundreds of vessels; indeed, I have seen, on many occasions, more than seven hundred, of all sizes and descriptions, riding here in perfect security, under the circumstances mentioned above; and when let loose by a cessation or sudden shift of wind, their simultaneous exertions, to take advantage of the change in their favour, the sudden display of so much canvass, and the exercise of their utmost skill in manœuvring through the narrow channels, to gain sea room, altogether form one of the most imposing and interesting spectacles to be seen afloat, and perhaps a similar exhibition is not to be witnessed elsewhere.

Yarmouth Roads formed also, in time of war, the principal place of rendezvous of our north sea fleet, not only for shelter, but the obtaining of supplies of every description. As it is evident, therefore, on these accounts, that this anchorage is of essential importance to the maritime interests of this country, so every change in its condition becomes as deeply interesting and important.

There have always been considered two principal channels or gatways into Yarmouth roads—one at the northern extreme, called the Cockle gateway, or between the Cockle and Barber sands on the one side, and the Sea Heads and Scroby on the other side; and the other called St. Nicolas gateway, leading in from the S.E. between the Corton sand on the one side, and the Kettle Bottom on the other. This latter was always used by the north sea fleet, and is still preferred by the larger class of merchant-vessels, and some deep laden colliers, to a secondary channel existing at the southern extreme of the roads; and it is to this principal channel into Yarmouth roads that I am anxious, in this communication, to draw the attention of my fellow seamen frequenting the eastern coast, and which I shall endeavour to do by an introductory remark or two.

The various banks which give protection to Yarmouth roads, and, I may add, to the town of Great Yarmouth itself and neighbourhood, being purely composed of sand, are, like all other districts similarly formed, liable to change, and by lapse of time to exhibit features and delineations very different to those they formerly assumed. A lapse of very few years has for example shut up the Stanford channel and opened an inshore one, superior in many respects to the former, and this new channel is still improving, as the state of the old Stanford channel is becoming worse. The face of the Corton sand is very different to what it was nine or ten years since, and the same of the Scroby (both of which banks form the principal defence of the whole line of anchorage,) as the places where these banks, formerly dried, are now several feet below the surface of the water, and dry spots are now shewing themselves where several feet of water formerly existed. The neighbourhood of the St. Nicolas gateway, we might reasonably infer, would

partake of these natural alterations, but a recent re-examination has shewn that a disruption has taken place among the banks in its vicinity to such an extent as to make it a matter of great probability, that a few more years will make this important channel into Yarmouth roads very different to what it has been of late years. Towards the close of the late war, St. Nicholas gateway occasioned much anxiety by its frequent fluctuations, at one period being in a tolerably good state, while at others there was scarcely sufficient depth of water for the large class of line-of-battle ships to sail in; but since the peace its general condition, as to depth, has been better, and, although at the present time a ship sailing in can command upwards of thirty feet depth of water into the roads, yet, since my survey, published by the Admiralty, in 1827, the channel has been narrowed from five to little more than three cables' length, by the advance of the Corton and Kettle Bottom towards each other, taking the four fathoms' edge as the boundary line.

By a reference to the publication above alluded to, it will be seen that the *Scroby*, *Kettle Bottom*, and *St. Nicolas* banks formed one continued line of danger, with the exception of a dip in the ridge connecting the *Scroby* and *Kettle Bottom*, locally known by the name of "*Fishermen's gateway*," and over which part there was a depth of thirteen feet; whether from the closing up of the *Stanford* channel, combined with the narrowing of the old *St. Nicolas's* gateway, some portion of the strength of the flood-stream may have been diverted to operate upon these parts, or from other causes, difficult, perhaps, to discover, the ridge itself, together with the northern extreme of the *Kettle Bottom* have now wholly disappeared, and on the spot where there were formerly but four feet water, we now find sixty-five feet. The dismemberment of the *Scroby* and *Kettle Bottom* is complete—the southern tail of the former bank has turned off in the S.E. direction, presenting to the navigator a new gateway of four and half cables' length wide, and through which he can carry a depth of water of not less than forty feet.

From the circumstance of the north end of the *Kettle Bottom* having gone away, and also its S.E. extreme, formerly called *St. Nicolas Sand*, but of which nothing now exists deserving an exclusive name; the *Kettle Bottom* remains but a comparatively small and detached bank in the middle of a large gateway composed of the old *St. Nicolas* gateway, and the new one I have now called attention to.

Unprotected as that part of Yarmouth roads is by any exterior bank, (such as the *Cross Sand*,) it will readily be perceived that by the removal of so vast a body of sand, and the opening of a wide and deep channel in the southerly and S.E. direction, it cannot be deemed so secure as formerly in gales from those quarters; indeed it has been a subject of remark for some years past, that the anchorage between *Gorlstone* and Yarmouth is considerably more agitated in on-shore gales than formerly, but the true cause does not appear to have been hitherto understood. It therefore behoves the masters of all vessels to be cautious how they persevere in maintaining their positions within those limits in winds from between the south and east.

Should the *Kettle Bottom* ultimately disappear, and which, from its diminished capacity within the last ten years, there is every reason to

believe a possible, if not a probable, occurrence, conjecture may be indulged in as to what may be the effect produced upon the coast line in the neighbourhood of the town of Yarmouth, from the additional exposure to which it will then be subjected. Borough Castle, situated at the head of Breydon Broad, and nothing pertaining to which remains except the ditches and ruins of the walls by which it was surrounded, is now nearly three miles from the sea coast, of which it was formerly a defence. The site of Great Yarmouth is, therefore, of comparatively modern date, and the spot, within its walls (Fuller's Hill) which was the first to rear its head above the level of the German ocean, is still well known and pointed out. In still later times, the higher parts of the Scroby was a "green isle," whereas, at present, its highest part is barely level with low water.

From all these circumstances it is evident that revolutions in sandy navigations, such as that of Yarmouth roads, are continually going on, and though slow and gradual in their operations, so as to escape the observation or particular remark of the ordinary run of sailors, are, nevertheless, not the less certain, and can be best understood by the comparison of plans and observations which have a lapse of a certain number of years between them.

If these few remarks and hints on the present state of Yarmouth roads, prove in any degree interesting or useful to those for whom they are intended, the object will be fully answered, of, sir,

Your very obedient, humble servant,
WILLIAM HEWETT, Captain.

Naval Chronicle.

THE VESSELS IN THE ICE.—Since our last, the following official notice has been given respecting these vessels.

“Treasury Chambers, Jan. 14th, 1836.

“SIR,—I am commanded by the Lords Commissioners of his Majesty's Treasury to acquaint you, that they have had under their consideration the memorials of several persons, praying the assistance of his Majesty's government to the crews of vessels that have not returned from the whale-fishery, and that my Lords, having communicated with the Lords of the Admiralty on the subject, have decided to grant the following bounty :—

“My Lords will be prepared to pay the sum of £300 to each of the first five vessels which may sail from any port in England or Scotland before the 5th of February, carrying an extra quantity of provisions, provided they shew by their log that they make the best of their way across the Atlantic, and that they reach the edge of the ice to the southward of 55° lat.

“My Lords are willing, on the part of the government, to defray twice the value of any provisions supplied to any of the distressed ships which, after having escaped from the ice, may be met with on their passage home, and the wages of any men put on board of them for the purpose of navigating them home.

“Further, my Lords will give a bounty of £500 for each of the distressed vessels, the crew of which is relieved while struggling

within the edge of the ice ; and a sum of £1,000 will be paid for each of the distressed vessels, the crew of which is relieved while fixed in the ice.

“And in case of its being necessary for any ships relieving any of these vessels, to accompany them home in consequence of their distressed condition, a further sum will be given by my Lords, equal to twice the demurrage of the said ship, for the length of her passage home, and return to Cape Farewell.

“I am, sir, your obedient servant,

“T. BARING.”

We trust that this will be the last season of these unhappy detentions, and that the hint thrown out by the *Aberdeen Herald*, which we quoted in our last number,* may be acted on. It is high time that some plan was matured for the settlement there alluded to, and we hope to see it established. The *Shipping Gazette* says, that a letter from Captain Dunn, of the *Jane*, of Aberdeen, written from Fraserburgh, dated December 28th, states that one of the missing Davis' Straits ships had been seen off there that day by the fishing-boats, and that a boat from some part of the Frith had been on board of her ; and another is also stated to have arrived on the coast of Norway.

LIGHT IN THE TAGUS.—A statement has appeared in the papers, that the light of St. Lorenzo tower, on Bugio fort, at the entrance of the Tagus, is now a revolving light, varied by eclipses, the period of revolution being three minutes, and the duration of the strongest light being three seconds. We have not yet seen any authenticated statement of this change.

NEW INVENTIONS.—A new life-buoy has been invented by T. T. Grant, Esq., of his Majesty's victualling yard at Weovil, which, on a trial, has been found to answer fully its intended purpose. It affords entire security from sharks, and is exceedingly simple in its construction. . . . Lieut. Jerningham has applied a hammer to the common gun-lock for ships, by which it can be used on the detonating principle, without injuring it for the common method. His plan is simple, economical, and may be applied or displaced in a few seconds. In an early number we shall describe both of these inventions.

SIGNAL LIGHTS FOR SHIPS.—We have received the proposal of Captain Evans, of H.M.P. Vixen, for the establishment of signals for vessels passing each other, whether steamers or otherwise. In our volume for 1836, we printed the report of the pilotage committee, in which a plan of signals is also recommended for the use of steam-vessels particularly. Before we give publicity to Captain Evans' plan, we should like to be informed what plan is really in use under the sanction of parliament, as it is evident that a third person might come forward with another proposal, and, among them all, seamen would be puzzled to know which was to be followed.

THE CHARLES EATON.—In our volume for 1836, we gave some of the particulars of the fate of this unfortunate ship, as deposed to by

* Page 51.

those of the crew at Batavia. The following communication respecting her has been addressed to the editor of the *Shipping Gazette* :—

To the Editor of the Shipping Gazette.

Sir,—We take the liberty of enclosing a copy of a letter received this day from our correspondents at Batavia, with whom the letter was left by the commander of the East India Company's brig-of-war *Tigris*, which had proceeded to Torres Straits, by orders of the Government at Bombay, for the same purpose as his Majesty's schooner *Isabella* ; and our object in sending you the enclosed, is to request of you as soon as possible to have it inserted in your paper, for the sake of the friends of the unfortunate crew of the *Charles Eaton*, of whose fate there can be no doubt.

We are, sir, your most obedient servants,

GLEDSTANES AND CO.

3, *White Lion Court, Cornhill, Dec. 23, 1836.*

H. M. schooner *Isabella*, Murray's Island, June 26, 1836.

I leave this memorandum in the hands of the natives, which they promise to produce to the first European captain calling here, and it will be well to return them a trifling present on its delivery, so as to encourage their confidence in him.

My object in visiting this place was in search of the survivors of the *Charles Eaton*, which was lost on some of the barrier reefs to windward, and only found two—John Ireland, and a little boy, William Doyley, son of Captain Doyley, of the Bengal artillery. The father and mother, and the whole of the passengers, with the whole of the crew, were all murdered by the savages on the island, which the natives call *Boydang* ; consequently those are the only two living, whom I purchased from the natives for axes. These survivors have been well treated on this island ; indeed these people saved and rescued them from the savages of *Boydang*, an island to the westward, which it is also my object to visit, although I am rather at a loss which it is, owing to the circumstance that there is no native name on the charts to any of the isles within the straits.

The natives of this place I consider very harmless, but great thieves, and also very much afraid of a gun, or small arms.

CHARLES M. LEWIS, Commander.

N.B. All well, and sail to-morrow.

H.M. schooner *Isabella*, July 28, 1836, Halfway Island.

MEMORANDUM.—This vessel was despatched by Government in search of the survivors of the *Charles Eaton*, wrecked on the Barrier Reef, about two years ago. I have also called on nearly all the islands northward, after finding two of them on Murray Island, William Doyley, and John Ireland, boy of the *Charles Eaton*, and the former son of Captain Doyley, of the Bengal artillery. Ireland relates the awful catastrophe, having seen the whole of his mates on the second raft, consisting of all the crew, murdered in his presence. The captain and passengers shared the same fate by the first raft about a week before on the same island, called *Boydang* by savages, on *Aurced*, another island, in lat. 9° 56' 15" and long.

143° 11' 40", bearing north-west by west half west from Halfway Island, and seen off decks. After searching all over the straits for this mysterious island, I at last found it, and saw no inhabitant there, having left the previous night, when the ship hove in sight of their isle. I, however, found the skulls of the unfortunate people on the middle of the island, covered with a kind of shed, and arranged near a place where they generally feasted on the dead. These heads of different people were placed round like the figure of a man, and painted with ochre. I observed long sandy hair on one of the skulls, also great marks of violence on them all. Having satisfied myself of the truth of this detail, I set the whole of the house on fire, and also destroyed every cocoa-nut tree in the place, which those savages generally exist on. I at the same time conveyed the skulls on board, and destroyed the skull-house. My next object is to proceed toward Double Island and Mount Adolphus, where I may find some other sufferers, and, after performing that, I intend to proceed to Sydney, having fulfilled my commission from his Majesty's Government which I was honoured with.

Should this fall into any hands, I shall feel obliged by giving it publicity in the first port touched at, in case of any unforeseen accident taking place with us ere we reach head-quarters.

CHARLES M. LEWIS.

N.B. I have buried another bottle with a letter on the same island, also sown some parsley seed, as I have done on other isles.

AUSTRALIAN COAST SURVEY.—We understand that a survey of Torres Straits and that portion of the North west coast of this continent left unexamined by Capt. King, is about to be undertaken by Commander Wickham, in H. M. S. Beagle. This officer has just returned from the interesting voyage of this same vessel, an account of which we have given in the Nautical Magazine, and for his services on this occasion he was rewarded with promotion.

VOYAGE OF H. M. S. COVE.—The following dates may hereafter be of use to our readers, H. M. S. Cove, Capt. James Ross, was commissioned to proceed in search of the absent whalers, on the 21st Dec., 1835, at Hull. 6th Jan. 1836, sailed from the Humber. 5th Feb. returned to Stromness, Orkneys, to refit. 24th Feb. sailed again. 31st May arrived at Holsteinberg, 13th June sailed. 15th June arrived at Whalefish Islands, 27th June sailed. 30th July arrived at Okkak-Labrador, 4th August sailed. 24th August arrived at Yarmouth. 26th Sept. paid off at Hull. An account of her voyage will be found at p. 626 of our volume for 1836.

VELOCITY OF STEAM VESSELS AT SEA.—Between Falmouth and Cape Finisterre, (or to 43° N. and 10° W.) the mean of twenty passages performed by H. M. steamers, gives an average passage of 5·1 days. Assuming the distance as 480 miles, the mean rate per hour is therefore 6·5 miles. The average of sixteen passages between Cape Finisterre and Falmouth is 2·8 days or 7·2 miles per hour. The difference in favour of the return passage, perhaps, is owing to the prevailing S. W. winds, and partly to the current.

ROYAL NAVAL SCHOOL.—The Christmas examination of the pupils of this establishment has given much satisfaction. The first class was examined by the Rev. W. J. IRONS, of Queen's College, Oxford; and the second by R. KERR, ESQ., of the University of Glasgow. A tragedy of Sophocles formed the subject for the first class, and the Iliad for the second. The mathematical examination of the first class was the elements of astronomy, trigonometry and the differential calculus. Mr. Irons recommended masters Christian,* Jennings,† and Domville,‡ as deserving of favourable notice. Mr. Kerr recommended Masters Brine, sen.|| and Meade.§ It is gratifying to us to announce, that Master Domville, whose age is 16, has been elected to a *tancred* studentship of Divinity at Christ's College, Cambridge. This affords further evidence of the soundness of the system of education pursued at the Royal Naval School, the pupil being qualified to go direct to college from this institution.

The Building fund is still progressing; the last addition we have heard of is, Messrs. Drummond & Company's liberal donation of £50.

EMIGRANT SHIPS.

Greenwich, Dec. 22d, 1836.

Sir,—I observe in your last month's number, a letter from a prospective emigrant, in which he states the extensive losses of ships employed in the conveyance of emigrants, and expresses much interest in the working of the present system. Having requested the attention of the principal secretary of state for the Colonies in the year 1832, to the unseaworthy state of the ships employed in the conveyance of emigrants, particularly those from Ireland, and to the gross impositions practised on poor families while finding their way to the colonies; suggesting, at the same time, the appointment of Government agents to protect and assist the emigrant, and *qualified* to survey the ships employed in their conveyance;—these suggestions were at first treated lightly, and after a long correspondence, I was informed that it was not the intention of the commissioners of emigration to appoint agents, agreeable to my suggestion. Shortly after, however, and *during my absence from England*, agents were appointed, and an act was passed during the following sessions of parliament giving them power to act in the performance of their duty. This duty is, I conceive, *rigidly* to *survey ships* intended for the conveyance of emigrants, and to be *most fully certified*, by a strict personal inspection, that they are in every respect properly *found, fitted, and provisioned*, for the performance of the respective voyages, as also to afford every information, and render every assistance possible to emigrants, while preparing for the voyage.

One part of my plan was to encourage every emigrant to insure ten pounds, which might be done for four shillings, that in the event of shipwreck they might not be left destitute, as appears to be the case with the unfortunate sufferers saved from the wreck of the Bristol, near New York, and to my knowledge, many others. Another part of my plan was to encourage commanders, and officers of those ships, to have

* Son of Capt. Christian.

† Son of Lieut. Jennings.

‡ Son of Dr. Domville, of Greenwich Hospital.

|| Son of Lieut. Brine.

§ Son of Commander Meade.

them as comfortable as possible for the passengers, and to treat them kindly, whether these measures have been adopted in any instance, I am not aware, but trusting that they are,

I remain, sir, your obedient servant,
EDWARD SMITH, Commander, R.N.

HARBOURS OF REFUGE.

To the Editor of the Nautical Magazine.

Sir,—I cannot approach so grave a subject as Nauticus' letter on *Lowestoffe-ness*, in No. 58 of your interesting work, without expecting to receive, in reply to my queries, a few more of his round assertions in lieu of facts.

"Nauticus" (the lion's hide assumed by the bye) objects, but not nautically, to the recommendation of the committee on shipwrecks, in favour of the construction of Asylum Harbours at Ormes Head bay and Redcar; for what seaman does not rejoice at the prospect of having those places of refuge to run to, when embayed and driving to leeward during the on-shore gales referred to by him.

By the report of the committee on harbours of refuge, which, as well as the report of the committee on shipwrecks, bears testimony to the advantages which exist at Redcar and Ormes Head bay, those places are described as capable of being safely entered at all times of tide, the depth being 30 feet at low water. Now I beg Nauticus to point out what equivalent advantages exists at *Lowestoffe-ness*? Has he any thing more to offer than a "ness," or shore, out of which he calculates upon carving his harbour according to his fancy, unless he be content to wait till some earthquake converts his dry shore into deep water?

Where is the wit in objecting to Redcar because it is situated on the margin of the great German ocean? Does Nauticus imagine that that margin boasts no commerce? Is he unaware also of the immense trade from the western ports of England, requiring the Ormes Head harbour? Will any seaman state that the positions of the proposed Ormes Head and Redcar harbours, the approaches to which are through deep water, or free from all hidden danger, will not be safer to run to than such a position as the neighbourhood of *Lowestoffe-ness* affords, surrounded by its quicksands and shoal water.

No reasonable man, no humane person, will object to a deep water harbour on any part of the coast, but can Nauticus shew that one can be formed at *Lowestoffe-ness*, or will the latter vicinity, in his opinion, supply the want of places of refuge on the Welsh and north-eastern coast of England.

As a hearty well-wisher to both the Ormes Head and Redcar projects, I will take leave of Nauticus for the present, as I begin to guess that, after all, he is a friend to those places, who has only provoked a discussion, with the conviction that they are sure to gain by it.

I am, sir, your obedient servant,
TAR-TAR.

MOUNT'S BAY BREAKWATER.—This great and important work appears to be daily gaining in public estimation. A meeting, we observe, has been held at Penzance, at which the various advantages of it were amply discussed, and further testimony adduced of its

importance, in the opinion of experienced naval officers. The chairman, James Halse, esq., stated that, when formerly the attention of the Admiralty was solicited to this object, Sir Richard Bickerton had expressed himself strongly in favour of it. The opinions of several other officers and men of experience were also quoted in favour of it, and a committee of resident gentlemen, we find, were appointed to forward the grand object in view. In our December number we presented our readers with a view of this Breakwater, as projected, and some of the important advantages which will be derived from it by this country were there pointed out. The position of it has been well chosen in the bay ; for, terminating at St. Clement's Isle and passing over Lowlee Rock, will afford it the additional strength of a natural foundation at those points, and contribute much to give it the requisite stability to withstand the fury of the S.W. gales. By working also out gradually from the point on tram roads, the expense will be much lessened, an advantage which Plymouth breakwater had not, and the difference in the expense of quarrying the stones, is very much in favour of Mount's Bay. The original cost of this at Plymouth was four shillings and ten-pence per ton, and at present it is reduced to one shilling and three-pence. But owing to the great quantity of loose granite with which Penlea Point and its neighbourhood abounds, the quarrying and carriage together, we are credibly informed, will not exceed seven-pence per ton. These are sterling arguments in favour of this work, and considering it in a national point of view, we rejoice to see it in such a favourable condition, satisfied as we are, that on its completion depends a large portion of the prosperity of this country, and the lives of a large body of seamen.

STEAM.—Perhaps at no period on human record has any subject occupied the attention of man so much as the advantages to be obtained by this extraordinary power ; and there appears to be no lack of zeal among enterprising merchants and capitalists to keep pace with the march of improvement already made. We see daily advertisements of companies formed and forming to navigate nearly the whole world by steam-vessels. We also see mechanical improvements offered to the public tending to give stability and success to the great enterprise, and amongst them we find "Collier's improved patent boilers," particularly recommended. If Mr. Collier has realized all that he professes to have done, he will have made, by his ingenuity, one of the greatest steps towards perfection, since the days of the great Watt ; and, at all events, we would recommend capitalists and commercial men to look into the statements which Mr. Collier has advanced.

NAVAL HONOURS.—We have great pleasure in recording the following gratifying testimonials of the esteem in which Commander Quin was held by the merchants of the African coast, when he commanded the Britomart, lately, as lieutenant. They have fallen accidentally into our hands, and the respect we entertain for a worthy officer adds to our satisfaction in laying them before our readers :—

“ Bathurst, St. Mary’s River, Gambia, 18th Oct., 1834.

“SIR,—We, the undersigned, merchants and traders of this settlement, cannot allow you to relinquish the arduous and important duties you have been called on to discharge at this station, without conveying to you the high sense we entertain of the valuable services you have rendered this settlement, and of tendering you our sincere and hearty congratulation on the success which has attended your exertions for the protection of its commerce.

“The great zeal and professional ability which you displayed in conducting the Britomart to Macarthy’s Island, reflects the highest credit on yourself and the officers under your command, and the cool, but decided conduct with which you repressed the infractions of the French on our commerce at Portendic, commands our admiration and esteem, and has been the means of our participating in that important trade.

“We are further desirous to assure you of our private feelings of gratitude and respect to yourself and the officers of H.M.B. Britomart, for the kind, gentlemanly, and officer-like conduct evinced by you and them at all times, in discharge of your important duties.

“As a mark of our high opinion and esteem of your general conduct, we respectfully request your acceptance of a piece of plate of the value of one hundred guineas, which will be presented to you in London in our names.

“Sincerely wishing you a prosperous cruize and a happy meeting with your family and friends, and that your devotion for the service may soon meet with the reward it so justly merits, we beg to subscribe ourselves—

W. FORSTER,	C GRANT,	A. CHARBONIER,
R. LLOYD,	E. LLOYD,	T. ISOINEN,
J. GRANT,	J. HUGHES,	E. BOCOCK,
J. S. FINDEN,	CHORON & MESSWAY,	R. AYMSLEY,
N. ISAACS,	W. H. GODDARD,	G. AYMSLEY.”
J. F. PELLEGRIN,	SOUVENT KALB,	

The following is the inscription on the piece of plate alluded to:—

“Presented to Commander Quin, of H.M.S. Britomart, by the merchants and residents of the Gambia, on the west coast of Africa, in gratitude for the promptitude, firmness, and ability, displayed by him in successfully protecting the British gum trade at Portendic when threatened with interruption by a superior French naval force: and also in token of their respect and regard for him as a gentleman and a friend.”

In addition to the foregoing we have inspected a very elegant silver vase, richly ornamented, in true nautical style, presented to Commander Quin, by the British merchants on the Gold Coast, with the following inscriptions on it:—

“From Lieut. Governor Maclean, J. Swanzy, W. Topp, T. Hutton, J. Bannerman, and other merchants and inhabitants of the British forts on the Gold Coast, to W. H. Quin, Lieut. Commander of H.M.S. Britomart.

“Presented in testimony of the brave and prompt assistance rendered by him in that vessel in support of the expedition successfully led by Lieut. Governor Maclean, from Cape-Coast-Castle, against the tyrant chief of Appollonia, in January, 1835.”

CAUTION TO SEAMEN.—NEW GATWAY INTO YARMOUTH ROADS.—In another page we have inserted the marks and bearings, recently published by the Trinity House, of a new lighthouse, placed off Yarmouth; but the communication following it, from Capt. William Hewett,* of H.M.S. Fairy, shews that some very important changes have taken place in the position of the sands in the immediate vicinity of that place, which will render the utmost caution necessary on the part of navigators, particularly in using the St. Nicolas gateway. These changes will shortly appear in the chart, published by the Admiralty, and in the mean time we may apprise seamen that a vessel going into Yarmouth roads from the S.E. should observe the following directions, viz.

From the fair way buoy of St. Nicolas gateway shape a course, so as to leave the north buoy of the Kettle Bottom from one and a half to three cables' length on the larboard hand, with Caistor church bearing about N. $\frac{1}{2}$ W. (Mag.) Vessels leaving Yarmouth roads by the new gateway, may follow the above directions in the reverse order, making allowance, in both cases, to the set for the tide.

These revolutions in nature affect more than navigation. Changes, such as these, produced the ground on which Yarmouth itself stands. What the gradual result of this will be we shall leave for geologists to decide.

Law Proceedings.

ADMIRALTY COURT, DEC. 7.—THE IX MARTZ—COLLISION.

Two colliers, the IX Martz and the Carnation, the one British, the other Prussian—the one bound to St. Petersburg, the other to Stettin, were trying to get into the Baltic from the Sound, on the 30th of September, with an adverse wind, (one alleging it to have been from the south-east, the other from the south,) the former beating to the eastward, on the starboard tack, the latter to the westward, on the larboard, when they came in collision, and both suffered considerable damage. This was an action brought by the British owner against the Prussian vessel, through the unskilfulness of whose crew it was alleged the accident had happened. There was no violence of weather at the time.

The KING'S ADVOCATE and Dr. ADDAMS, on behalf of the Carnation, contended, that the collision had occurred through the misconduct of the man at the helm of the IX Martz, who had put it alee, instead of aweather. The learned counsel admitted the rule of navigation to be that, where two vessels were trying on opposite tacks, that on the larboard was bound to give way, that on the starboard to pursue her course. The Carnation put about, in expectation that the Prussian vessel would pursue her course, or put her helm aweather, which would have kept her clear of the Carnation; but she did neither. They had alleged that she was put about, and that she missed stays; but this was incredible in the state of the weather, and inconsistent with the nature of the damage done by the IX Martz,

* This officer has just received his promotion as Post Captain, an honour which he has well earned by a long, arduous and difficult service.

which had run stem into the *Carnation*, leaving part of her cutwater behind.

Dr. PHILLIMORE and Dr. HAGGARD, for the foreign owners, took their stand on the primary law of navigation, which was now settled and adopted by this court, that where two vessels were on opposite tacks, that on the larboard tack was bound to give way. That course was not pursued by the *Carnation*, and, at the last moment, when the collision was imminent, finding the *Carnation* did not bear up, the foreign vessel did all that was possible to avoid the danger, which had been produced by the unskilfulness of the other. The *onus* of showing absence of blame lay on the *Carnation*.

Sir J. NICHOLL, who was assisted by Trinity masters, said that there was an admission in one of the affidavits, on the part of the plaintiffs, that when the *IX Martz* was seen by the *Carnation* she was half a mile off; this afforded ample time for avoiding her. The rule adverted to in the argument applied, unless darkness or other circumstances precluded the vessel on the larboard tack from seeing or avoiding the other. Here appeared nothing to prevent the *Carnation* from giving way, and if she had done so, no collision would have taken place. It certainly was an unfortunate case, in which considerable loss and damage had been sustained; but the court must act according to the principles of justice.

The Trinity masters having expressed their opinion that the collision was occasioned by the *Carnation* not bearing up, and by her attempting to go under the bows of the other vessel, the court rejected the prayer of the owner of the *Carnation*, and condemned him in the costs.

THE SUSANNAH—SALVAGE.—DEC. 13.

This was an action by the owner and crews of two vessels, named the *Liberty* and *Eagle*, for a remuneration for salvage services, alleged to have been rendered to the sloop *Susannah*, of 46 tons, from Colchester to London, with an assorted cargo, when on the *Buxey-sand*, on the coast of *Essex*, on the 23d of September. The value of the ship, cargo, and freight, was £500. The two sets of witnesses swore in direct opposition on every point, the fact of any salvage service having been rendered, or even required, being totally denied on the part of the *Susannah*, and a desire to scuttle the sloop being imputed to the salvors.

The KING'S ADVOCATE, on the part of the salvors, contended that the vessel appeared by the evidence of disinterested witnesses to have been much injured, and to have made much water; that the salvors were entitled to a considerable reward, and that the court ought to mark with its disapprobation the conduct of the other party in imputing a crime to the salvors.

Dr. NICHOLL, for the owners of the *Susannah*, contended, that the case of the alleged salvors was untrue from first to last; that the vessel could have received no damage, for the cargo was perfectly dry; and that the conduct of the other party, so far from being meritorious, deserved the reprehension of the court. They had not gone before the local magistrates at Colchester, but had brought the case

before a distant jurisdiction, where they supposed it would not have been so well known.

Sir J. NICHOLL said, that in most of these cases there was a good deal of exaggeration, arising from the infirmity of human nature, which was prone to take a partial view where interest swayed. But in the present case, the two sets of affidavits were perfectly irreconcilable *in toto*; on one side or the other there must be gross misrepresentation—he would not use a harsher term. The master of the *Susannah* swore that it had received no damage beyond a little pricking on the bows, owing to the anchor being a cock-bill; and that he lay upon the sand in order to stop the hole, knowing he could get off the next tide, when he was boarded by the salvors, who commenced unloading the vessel, contrary to his authority; on the other hand, the salvors and their witnesses, who swore, in confirmation of their statement *in verba magistri*, alleged that the vessel was in a most perilous condition, that she had been upon a sand before, (which was denied,) and that she made water fast. Under these circumstances, what was the court to do? It must take some important fact to which one of the parties had committed themselves, and judge of the case accordingly. Now, it had been set up by the salvors, and it was an allegation that ran through all their statements and affidavits, that the vessel made much water, that it was overwhelmed with water, that the salvors were always pumping, or, as they expressed it, “jogging at the pumps.” Now it was not only proved by the other witnesses that there was no more water than is usual in the hold, but when the cargo was delivered it was perfectly dry. This was a point on which there could be no doubt; and it was a fact which shewed that a false case had been set up by the salvors. He might now advert to an additional circumstance, which he might do with the more confidence now that he had this evidence respecting the state of the cargo; and that was, the offer made by the salvors to defraud the underwriters; and it was highly important that the court should advert to it, because it was the duty of this court to protect the interest of underwriters. The master stated that Allen, one of the salvors, proposed that he (the master) should give them £200, and he would give a receipt for £400, by which the master might make a good job of it. This was confirmed by two other witnesses, who heard the offer made. This was as gross an attempt at fraud as ever came before a court of justice. Without considering whether the conduct of the salvors amounted to felony under the statute, he was of opinion that the case set up by the salvors was a grossly fraudulent case; that the case for the defence was the true statement of facts; and that the salvors ought to have their petition dismissed, and dismissed with costs.

THE EARL GREY—SALVAGE.

The Earl Grey, from Liverpool to Africa, with an assorted cargo, the day after sailing came in collision, twenty miles from the Tuskar light, with a vessel called the *St. Andrew*, from New Brunswick to Liverpool, and became unmanageable, and was in a perilous condition. The *Solway*, a steam-vessel of considerable burden, with two

engines, each of 45-horse power, having a cargo of live stock, and fifteen passengers, took her in tow, and in twenty-nine hours brought her safely to Liverpool. The value of the ship and cargo of the Earl Grey was £3,049; that of the Solway, £16,000.

The KING'S ADVOCATE, (with whom was Dr. Addams,) for the salvors, contended that it was a case which called for a liberal reward. The condition of the Earl Grey was so desperate, that the surveyors had stated that if the assistance had not been afforded the vessel could not have reached a port.

Dr. JENNER, for the owners, admitted the service rendered by the Solway; the only question was, what the court thought was a sufficient reward for it. No personal danger had been incurred, nor had there been any extraordinary labour; the only ground of claim was founded on the delay occasioned to the steam-vessel. It was true, it had towed the Earl Grey for twenty-nine hours; but the Solway herself was bound to Liverpool, and therefore she was not diverted from her course. She usually reached Liverpool at eight o'clock, and on this occasion she did not arrive till half-past ten next morning; so that the twenty-nine hours' delay was reduced one-half. The object of the court would of course be to give a just reward to the salvors, but not to put the owners (who had to pay the expense of repairs) in no better situation than if they had suffered a total loss.

Sir J. NICHOLL said, there were two important facts to be considered in all these cases, and especially the present—the risk of the property, and the assistance rendered by the vessel claiming reward. The situation of the Earl Grey had been one of very great peril; without assistance there was but little chance of her getting into a place of safety, and the crew would have abandoned her if they could. In cases of derelict, the court seldom gave less than one-third; and this was all but a case of derelict. It was true, there had not been any great skill, risk, or enterprise, on the part of the salvors, and no great time had been occupied, and Liverpool was the port of the Solway's destination. On the other hand, the steam-vessel was of great value; it had a perishable cargo on board, and passengers; and it was consistent with public justice and public feeling to encourage steam-vessels to render such assistance, especially in St. George's Channel, otherwise they might not be ready to render such aid. Both underwriters and passengers were interested in such encouragement being given. Looking to the expensive fitting out of the steam-vessel, and to the number of the crew, the court could not give less than £900.

COURT OF KING'S BENCH, DEC. 19.

(Sittings at *Nisi Prius*, at Guildhall, before Lord Denman and Special Juries.)

CROFTS AND OTHERS v. MARSHALL AND OTHERS.

Sir Frederick Pollock and Mr. Petersdorff conducted the plaintiffs' case, and the Attorney-General and Mr. Maule that of the defendants.

The plaintiffs were the assignees of Barrow and Vizer, and brought the present action to recover the value of seventeen casks of oil upon

a policy of insurance. The oil belonging to the bankrupts consisted of thirty-four casks, which were shipped on board the brig *Westleys*, from London for St. Petersburg. The vessel sailed in August, 1832, and encountered some stormy weather; and when the vessel got into the North Sea it was discovered that several of the casks leaked; the oil was running about in all directions, and on the arrival of the vessel at her place of destination, it was discovered that ten of the casks were entirely empty, and that several others had lost a great deal of oil, there being only nineteen in a proper state. The plaintiffs alleged that this loss was occasioned by the perils of the sea.

The captain of the vessel and other witnesses were called, who stated that the weather was stormy, and that on one occasion almost every thing on deck was washed overboard; that the passengers jumped out of bed, thinking the sides of the vessel were stove in; and that when the pumps were used, it was discovered that a great deal of oil came up with the water. The casks were looked at by the coopers, and were properly secured before they were put on board, and they were well stowed. The witnesses considered, that in consequence of the rolling of the vessel the casks had leaked; the casks were not injured. They admitted that there were several casks of porter, Madeira wine, and brandy, on board, but that none of those leaked.

The ATTORNEY-GENERAL, for the defendants, contended that the action could not be maintained. If it had been shewn that the vessel had encountered such stormy weather that the cargo was shifted, and the casks damaged, there might have been some foundation for the claim. He was not so absurd as to contend, that if she had met with extraordinary perils, that her cargo had been shifted, and the casks injured, that then the underwriters would not have been liable; but he should establish, according to usage, according to law, and according to justice, unless there was some extraordinary peril whereby the loss was occasioned, it was a loss for which the underwriters were not liable. It was not enough to shew that there had been a leakage; they must shew that that leakage had been occasioned by an extraordinary peril. Now, the captain had most distinctly said that the casks were not injured, and the cargo was not shifted. The question was this, What was the meaning of the words "perils of the sea?" In such a mercantile instrument it could only mean that the loss was occasioned by some extraordinary danger. If the vessel only encountered average gales, and no extraordinary tempests, it was only wear and tear, for which the underwriters were not liable; that was the law of insurance—it was the cause to which they were to look, and not the degree.

It was then proposed to give evidence of persons, that, from what they had heard detailed, they did not consider this loss to have arisen from the perils of the sea; but this evidence was objected to, and, after argument, rejected.

Sir F. POLLOCK having replied,

Lord DENMAN summoned up the case to the jury. The question was, whether the loss by the perils of the sea was made out to their satisfaction. The defendants pleaded that the casks were not damaged by the perils of the sea, or that the oil was thereby damaged or

destroyed. They had heard observations, that it was a rule at Lloyd's, that a loss could not be said to be occasioned by the perils of the seas when the casks were not damaged; but it appeared to him that this was not a proper test to be applied, but the opinion of the jury was to be taken, whether or not, in point of fact, this arose from the perils of the sea. It might be convenient that the merchants at Lloyd's should lay down rules; but, if by those rules they meant to restrain the policy itself, they should introduce them into the policy, and it was not by their making a rule that the terms of a policy were to receive any limitation whatever. The jury were to say what, in their opinion, had been the cause of this mischief. They had heard the evidence, and they would apply to it their experience; and if they were of opinion that the loss was produced by extraordinary perils of the seas, they would find their verdict for the plaintiffs. If that was not made out to their satisfaction, their verdict would be for the defendants.

The jury retired about two o'clock, and about seven came into court, and stated that they could not agree upon a verdict, when, by consent of both parties, a verdict was taken for the defendants.

CAUTION TO SAILORS.—Captain Moorman, of the merchant ship *George Gordon*, was on Tuesday summoned before Mr. Hall, at the Police Court, to answer the complaint of two seamen for the non-payment of wages. The complainants, it appeared, had been engaged at Bathurst, near Quebec, in America, for the run to Liverpool. One of them, William Barnes, as an able seaman, at £11 wages, and the other as cook. The able seaman, it was proved, was wholly incompetent to perform his duty, and was found to be an impostor before he had been twenty-four hours at sea. He could neither steer nor heave the lead, and did not know a rope in the ship. As for the cook, at the commencement of the voyage he declined the job, after spoiling the sailors' mess several times, and preparing for them pea-soup, made with salt-water. In fact, his cooking was so bad that even sailors, whose appetites are proverbial, could not eat it. Mr. Hall dismissed both cases. It is much to be regretted, that both of the complainants received a considerable portion of their wages in advance. That of course cannot be recovered.—*Liverpool Telegraph*.

Lately, at the Castle of Exeter, before J. Karlake, Esq., and other magistrates, four men, named Parish, Baker, Butler, and Cawsey, part of the crew of the brig *William Ash*, of this port, from St. Petersburg, were each fined three days' pay, in addition to that time being stopped from their wages, and all costs, for refusing to get the ship under way in Elsinore Roads on the 14th of November last, and continuing below off duty (three days) until compelled by hunger to come on deck, and do their duty.

LAMBETH STREET.—Captain George Thompson, of the ship *Harriet*, attended to give information against a seamen, named James Screen, for an attempt which had been made on Captain Thompson's life, on the 17th of May last, when on a voyage to Trinidad. Screen on that day proposed to Captain Thompson that they should take the

ship to the Brazils, and there sell her. The captain indignantly refused to listen to such a proposition. In consequence of the conduct of Screen, Captain Thompson, a few days afterwards, ordered him to deliver up the log-book, and go to his berth off duty. On the same evening the latter attacked the captain with a razor, inflicted several wounds on him, and, but for the interference of the sailors, would have murdered him. On arriving at the West Indies, the captain brought the case before the magistrates, but it was not within their jurisdiction, as it was on the high seas, and Screen was accordingly set at liberty. From that time until yesterday the captain had not seen him, when he ascertained that he was in the house of correction for assaulting and threatening the life of his wife.

Screen is to be brought up for examination on a future day, as soon as the necessary witnesses can be procured.

SEAMENS' WAGES—THE AURORA.—Captain James Gilbert, the master of the Aurora, from China, appeared to answer the complaint of Mr. Nathaniel Morgan, his chief mate, who claimed a balance of £18, which he said was due to him by the defendant.

Mr. Pelham, the solicitor, appeared for Morgan, who he said had signed articles at Sydney to proceed to Java, Canton, and London, at £6 per month. He understood that the time and the articles signed were not to be disputed, but the captain wished to hold the mate responsible for the loss of some half chests of tea, a bale of silk, and several bags of rice, for stealing which in the Whampoa river, China, a man named Allen was convicted at the last sessions of the Central Criminal Court. The man, Allen, had been exceedingly crippled in his defence by wages, amounting to £20, being withheld from him; and four seamen belonging to the ship afterwards summoned Captain Gilbert for their wages, which he refused to pay. On the hearing of the case, the captain and his solicitor wished to throw the blame upon them, but their wages were ordered. "Ho now," said Mr. Pelham, "by the advice, I believe, of Mr. Soames, the owner, who has given my client a good deal of trouble, trying it on with him; and I don't see what objection can be made to the payment of the mate's wages, because the things have been lost out of a ship constantly crowded with Chinese thieves before she left the Whampoa river."

Mr. Ballantine said he recollected the last case. The question now was, whether the mate had kept a proper and sufficient look-out on board, and done his duty properly. If he had not, and the property had been lost by his neglect, that might not be an answer to the claim now set up.

Captain Gilbert said he was anxious to have the case deferred until Mr. Soames, the owner, could attend.

Mr. Morgan—I can't remain in London any longer; I have been here several weeks, and Mr. Soames has put me off from day to day with various excuses.

Mr. Ballantine said that Mr. Soames could make no change in the question in dispute, and he should proceed with the case.

Captain Gilbert said, that when the cargo was delivered, he found

there were many other boxes deficient besides those which Morgan said were stolen in China by Allen.

Mr. Ballantine said that did not prove neglect on the part of the mate. The vessel had a long voyage, and the loss was only discovered in the St. Katharine dock.

Mr. Pelham said the dock servants might have miscounted the bales and packages, and indeed there was a case exactly similar before the bench many weeks ago. The clerks in the London Dock had miscounted the hides, part of the cargo of a ship, and an attempt was made by the captain and owner to throw all the blame on the mate.

Captain Gilbert submitted that the mate was responsible for any losses, inasmuch as he received the cargo, and superintended the discharge of it. It was hard for the whole loss to fall on him.

Mr. Pelham—You have had £20 out of Allen.

Captain Gilbert—But £20 won't pay £150.

Mr. Ballantine—I am asking you to shew me that the mate has neglected his duty. He may as well throw the blame on the boat-swain, as for you to throw it upon him. There may be cases of a particular nature, where a mate has charge of a vessel, such as his getting drunk, causing property to fall overboard negligently, or going out of the way when he ought to be on board, which would warrant the magistrate in refusing to make an order, but nothing of the kind is shewn here. How can I say, therefore, that this man is not to have his wages?

Captain Gilbert—Then is the whole loss to fall upon me?

Mr. Ballantine—That is a question you must settle with the owner. I understand a man has been convicted of the robbery.

Mr. Pelham—Yes, sir, and Mr. Morgan was a principal witness. It was not till they had the benefit of his testimony that the captain and owner made any objection to him. One word more, and I have done. The captain, in this office, when Allen was under examination, admitted that no blame was attached to the mate, and that he had made no mistakes as to the number of packages.

Mr. Ballantine said the captain had made no objection to Morgan that he could attend to. The only question was, whether he was entitled to £6 per month, according to the articles he had signed. He found he was; and his order was, that Captain Gilbert should pay £18, the sum claimed, and the costs.

THE RIVAL STEAM-BOAT COMPANIES.—Since our last, James Yonwin, captain of the Brilliant steamer, appeared before Mr. Broderip for the second time, (the case having been adjourned,) to answer a charge of wilfully damaging and injuring the Planet steamer.

The proceedings excited much interest, in consequence of the well-known rivalry existing between the Star and Diamond companies, to which these vessels belonged. The case had been adjourned for the purpose of giving the defendant time to procure a witness, who he said would be an impartial one, he having seen the whole transaction from a distance, and not being connected with either party. The

witness in question was Edward Vass, a waterman and river pilot ; he said he was bringing up the Herald, an Irish steamer, on the 9th of December, and was half a mile a head when the collision took place between the Planet and the Brilliant. The Planet was going up inside of the Brilliant, when she was passing her ; but whether the latter vessel stopped for passengers or not, he could not say. He saw them come in contact, but whether the Planet smelt the ground or not, or how it was, he could not say, but she ran off. When a vessel was passing another coming up, she ought to go outside ; and he thought the proper course for the Planet to have taken, was to have gone outside the Brilliant. They were two opposition vessels, both trying to get to London first, and he might have gone inside as the Planet had done, but then he should have expected to have got into trouble. He really could not say whose fault it was.

Mr. Broderip said the witness had really made no alteration in the complexion of the case, and was not in a situation to have a correct view of what had occurred at such a distance, or the previous relative situation of the two vessels. He was bound, however, to say, he had given his evidence fairly and honourably.

Mr. Bodkin replied on the whole case.

Mr. Broderip then gave judgment at great length. He had now heard the case on both sides, and it was one of the very greatest importance to the public. He could have wished that this case had gone before one of the courts at Westminster, where it would have had the benefit of the opinion of a learned judge, and a jury of twelve men. The parties had, however, thought proper to appeal to him, whether the thing charged was done or not. He felt bound to convict Yonwin, the master of the Brilliant, and order him to pay £5 for wilfully and maliciously running upon the Planet, and injuring her to that amount. He did hope, for the sake of the public, that this opposition would cease.

Mr. Jackson, a director of the Diamond Company, could assure the magistrate that the captains of their vessels had particular orders not to run any risk, and they were ordered to consult the safety of the public, and refrain from racing at all times. He declared that Yonwin was a careful man.

Mr. Matthews, on the part of the Star Company, said they had altered their times of starting, to prevent any unpleasant occurrences, but the Diamond Company had rendered such regulations nugatory, by constantly altering their time for their boats to start from Gravesend, so that both should start together.

Mr. Broderip had no doubt the directors of both companies gave orders to their captains to be careful, and avoid accidents ; but, from long experience, he knew that masters of steamers paid but little attention to those salutary orders. He hoped the evil would be remedied, or something most dreadful would happen ; and though he had given a decision against the one that he felt bound to come to, he hoped Captain Hollingham would be careful, and not sail quite so near the wind again.

The fine and costs were then paid.

Records of Wrecks.

AGAIN we have commenced our tables of the wrecks of British Shipping, and that in our present number is a tolerable proof that we are in earnest. Allusion we find was made to these returns of wrecks in the minutes of the evidence taken before the *Shipwreck* Committee of last session, and it was correctly stated that we had been in the habit exclusively of publishing these accounts. The fact is that, being impressed with the importance of the subject to the nation at large, we were resolved from the first that the public should not remain in ignorance of it as far as we were concerned. Notwithstanding our endeavours, however, to acquit ourselves of this duty, we have fallen short of the truth, for we find that while our tables give an average of 419 annually for the years 1833—34—35, the report of the Shipwreck Committee states that average to have been 567! A frightful loss indeed of life and property. Our readers will therefore give us credit for not having exaggerated these melancholy details; and acknowledging the superior information of the report we are content to preserve, our records as indisputable. These records, however, we are in hopes will in future come nearer to the truth from the assistance we now derive from the "Shipping Gazette," an evening print, the most important we know of to any one connected with shipping affairs. The mass of shipping intelligence of all kinds which it contains from the outports of this country, as well the principal inner ports, renders it the most valuable publication of the day. It is in fact the only one of its kind, and from the nature of its intelligence, in a national point of view, strictly deserves the highest commendation.

Our present records display some of the effects of the late severe weather, and afford additional proof, if it were required, of the necessity of carrying into effect some of the recommendations of the Shipwreck Committee. We shall revert to these recommendations hereafter, as we are now desirous of alluding to the meritorious conduct of the coast guard when wrecks have occurred. It may appear invidious to select the names of particular individuals, confident as we are that all would use their best exertions in the cause of suffering humanity when those exertions were called for; but it has been the good fortune of some to appear more prominently than the rest, and it is our duty to record their good fortune, and to award "honour to whom honour is due." We therefore extract the following from among the testimonials contained in a few recent numbers of the *Shipping Gazette*. At the loss of the sloop *Industry*, of Killough, we find in a letter from Drogheda, Jan. 2, that "great praise is due to Lieut. Thompson, of the Clogher station, and the fishermen of that place; they carried a boat a mile and a half over the country, in which Lieut. Thompson and three of his men with five fishermen, pulled off to the wreck, and succeeded in rescuing the crew of the *Industry*, with the exception of one man, who perished before they could get out.

On the coast of Scotland we find that the barque *Euterpe*, of Glasgow, was nearly lost on the south side of Holy Island, and but for the prompt assistance of Captain H. D. Beatson, commanding H.M.R. cutter *Swift*, would have been inevitably wrecked. This was the

second valuable vessel that Capt. Beatson had saved within a fortnight. And at Lowestoffe we find the following honourable testimony paid to Lieut. R. Jones, (b.) R. N. printed in the Shipping Gazette.

“Pakefield, Dec. 27.

“Sir—In the name of the crew and myself, of the brig Bonafide, I beg to return you and your crew our most grateful thanks for your very great exertion in saving our lives with the life apparatus, from the perilous situation we were in, when we had but little hope of ever getting on shore again alive.

“I am, Sir, with the greatest thanks,

“Your humble servant,

“RICHARD FORSTER, Master.”

“To Lieut. Jones, R. N., Kessingland.”

“Kessingland, Dec. 28.

“I do hereby certify that the brig Gosforth was driven on shore during a violent gale of wind, on the morning of the 26th instant, under a high cliff at Kessingland; that we were for several hours in the most imminent and perilous danger, two of my men having perished in the rigging; and but for the timely assistance of Lieutenant Jones, with his life apparatus, all our lives must have been sacrificed; and I beg to return Lieut. Jones and his crew our grateful thanks for using their utmost exertions; for, next to God, those exertions were the means of saving our lives.

“Given under our hands, this 28th day of December, 1836,

(Signed), “CAPTAIN W. L. MURES, and crew saved.”

On the coast of Norfolk at Clay, on the 26th of December, Lieut. George Howes, R. N. exerted himself with great zeal to save the crew of a galliot with Capt. Manby's apparatus, and we are informed that much praise is due to the masters and crews of the Clay and Blakeney vessels for the readiness with which they assisted in launching the boat. Notwithstanding the extraordinary inaction of the galliot's crew in not saving themselves by this means, and submitting themselves to be drowned amidst the horrors of a dark winter's night, without an effort to avoid their fate; the same credit is due to Lieut. Howes as if his exertions had been rewarded with success.

At Margate the attentions of the officers and men of the coast-guard stations have called forth the highest eulogiums for their activity in saving the lives and attending to the comforts of the unfortunate ship-wrecked seaman. Lieut. Stephens, R. N. of the coast guard at Brighton, has also gained honour to himself by putting off with four men in a small boat, at the commencement of a stormy night to render assistance to a vessel in distress. Great anxiety was entertained for his safety, which we are happy to find was shortly removed. At the isle of Withorn in the north, the crew of the coast guard station have been awarded salvage for the stores saved by them from the George of Inverness, wrecked near Burrow Head, in November last, and in the South the following honourable testimonial records the meritorious exertions of Lieut. Charles Jenkin, R. N. at the Isle of Wight. It is addressed to the editor of the Shipping Gazette.

“Sir,—Will you have the goodness to insert in your valuable paper

the following paragraph :—I beg leave to offer my grateful acknowledgments to Lieut. Jenkin, R. N. of the coast guard station, Isle of Wight, likewise to his brave crew, for the kind offices rendered to me on the night of the 13th Dec. when the schooner *Lightning* was unfortunately wrecked, and who kindly staid by the wreck until the next morning. Trusting that this will meet the eyes of those who are in duty bound to encourage all those that attend on such an occasion,

I am, sir, your obedient humble servant,

HENRY VEZEY,

Late master of the unfortunate schooner *Lightning*.

No. 2, Pelham Place, Bermondsey,

January 6.

But in recording the services of the officers and men of the coast guard, we must not forget those of the merchant service. We find by the *Dundee Courier*, that the mouth of the Tay has afforded the following instance of bravery and intrepidity. "On the evening of the 26th of December, a brig was descried in the mouth of the river, attempting to cross the bar. After meeting two or three tacks in a tremendous sea, she was thrown on a bank opposite the Tay Lights. The sea broke over her, and from the moment that she took ground, not the slightest hope was entertained by those who observed her from the shore, of the safety of the crew, who clung to the rigging. The captain of the preventive service at Broughty Ferry, observing the perilous situation of the vessel, went out in his boat to the Forfarshire steam ship, then lying in Carolina roads, having been detained since Sunday morning from want of a favourable opportunity to leave the river, and gave information to Captain Kidd of the circumstance. This was at twelve o'clock. The gallant and humane Captain immediately gave orders to get up the steam, and with the least possible delay got under way and bore down the river. The sea was tremendous, but the steam-ship went gallantly through it, and exemplified her power and sailing qualities under the most trying circumstances. Captain Kidd had seen the hull of the brig when his attention was first arrested, but before he arrived at the spot three-quarters of an hour afterwards, the vessel had gone to pieces, and no vestige of her was to be seen. There were, however, signs of the melancholy disaster, and these of an affecting description. The hats, stockings, and other garments of the crew were seen floating about, as were the chests from which they had escaped, and from this it would appear that the unfortunate mariners had brought their "little all," on deck on the first alarm, that if perchance they could be saved they might preserve with their lives, their clothing. The Forfarshire picked up the sign board of the vessel, and found her to have been the brig *Mary* of this port, Mackenzie, from the Baltic. In corroboration of this fact it may be stated that quantities of flax were also seen on the ocean. The generous conduct of Captain Kidd on this occasion will not be forgotten. It adds another laurel to the wreath of honour which Captain Wishart of the *Dundee* steam-ship commenced in saving the *Victoria*, of Leith, when disabled in a late gale, and it will be gratifying indeed if the Captains of the port strive together in so highly elevated a contest as to out-do each other in bravery and humanity. We have not learned

any particulars regarding the unfortunate sufferers on this occasion ; but it is likely that seven or eight persons have lost their lives.

The Shipping Gazette also tells us, that the sloop *New Three Sisters* sunk on the 24th Dec. off Padstow, lying alongside of the *Sir A. Campbell*. The master and four seamen were saved ; and they particularly wish, through the medium of the Shipping Gazette, to return their grateful thanks for the kind and benevolent manner in which Captain *M'Intosh* behaved to them ; and he is now exerting himself in obtaining subscriptions to support the poor fellows, until they can be sent to their homes.

We shall now give, in our Records of Wrecks, the following, from the *Dover Telegraph* :—

Shortly after noon, on Christmas-day, the fall of snow became gradually heavier, and was driven by a violent wind with unexampled severity, which continued, without intermission, throughout the night. About two in the afternoon, the sloop *Prince Frederick*, Stephenson, from Rotterdam, for London, with a general cargo, running to this port for shelter, grazed slightly on the Knoll to the eastward, by which her steerage was lost ; and the vessel being driven against the Pier, by three tremendous seas, was thrown on her beam-ends, and immediately sunk in the entrance of the harbour. The master and crew took to the rigging, and were saved by ropes thrown to them from the pier.

Soon afterwards, a large ship, with her main-mast gone by the board, was observed with several signals of distress flying, standing from the South Foreland into the bay. Apparently altering her course, the vessel passed the pier heads, the people on board making signs for assistance ; but which no human aid could then afford. The crew also, it appears, previously hailed *H.M. packet Crusader*, which was standing for the harbour at the time ; but that vessel was equally unable, from the violence of the hurricane, to render assistance. Having passed the Bulwark Rocks, the ship was run on shore in the West Bay, about half-way between Archcliffe Forte and Shakspeare's Cliff. A boat was speedily dragged along the beach opposite the wreck ; but the difficulty of launching it over the immense waves that continually dashed on the shore, seemed insuperable. The drifting snow prevented the numbers, who had now assembled, from discerning distinctly what was going on on board the ship ; but she appeared to be in a comparatively still position. In about an hour the jolly-boat drove on shore empty ! and in half an hour afterwards, the long boat was seen to leave the wreck with seven of the crew. The boat was cleverly steered, with a single oar, through the tremendous surf. The moment was one of the utmost anxiety to those waiting to receive them on the beach, and who had a difficult task in saving their lives, as they washed out of the sea when the boat broached to. By an unaccountable fatality, these men had neglected to bring a rope from the wreck, by which the boat could have been drawn back to save the lives of their shipmates left behind.

It was now ascertained that the ship was the *Harriet*, Warman, from Quebec for London, with timber. The mainmast had been cut away in the Downs that morning, where four Deal boatmen were taken on board ; and after parting from her anchors, the pilot, Mr. Holmes, of this port, who had the fatal misfortune to be on board this old ship,

resolved on rounding the Foreland, for the purpose of standing her in Dover Bay, as the only means of saving her crew and cargo; the former having been nineteen days at the pumps.

The pilot, it is generally considered, selected the most favourable spot for effecting his purpose; but the high wind and heavy sea prevented the tide ebbing so low as on ordinary occasions, and every endeavour to get boats off proved unsuccessful. The attendance of the boatmen of the port was not so general as is expected on such distressing occasions; but there was no lack of hands, and many manly efforts were made by individuals whom we could name, but decline doing so, lest by omission of others equally deserving, whom we do not know, we might be charged with unfair distinction.

The mariners and boatmen present exerted themselves in a most praiseworthy manner, aided by the experience of several officers and gentlemen; and many young tradesmen devoted themselves to the humane endeavour, until they were fairly exhausted. The honorary rewards of the Humane Society would be well bestowed on these individuals and to such of the boatmen, whose circumstances require it, a pecuniary recompense is justly due.

Night coming on, and the obscurity caused by the bitter drifting snow, prevented the situation of the sufferers from being distinctly seen. And now the most strenuous efforts were made to launch the boats. One which succeeded, after a vain endeavour to communicate with those on the wreck, was driven back in a most violent squall; after which several attempts were made to throw a line over the ship by firing common rockets;* but we regret to add, unsuccessfully.

Tar barrels were ignited on different parts of the beach, and good fires kept, in the hope that some might make their way to the shore. At nine o'clock, as the tide flowed, all hopes of the ship holding together were abandoned. Several persons then finding their efforts unavailing, left the beach, many of them in a state of exhaustion, from repeated efforts and the piercing cold; but numbers remained throughout the dreadful night, to help, if possible, the sufferers on the wreck, who were known to be alive by their appalling cries.

About two o'clock the ship broke up, the main deck parting from the forecastle and the afterpart; the latter soon drove on shore, with the master and part of his crew. Every attention was immediately given to them; and a lad, named Schould, who had just expired, was taken to the Mulberry Tree, beneath the cliff, where Mr. Beal applied the means and apparatus of the Humane Society for two hours, but without effect. He had perished from cold and exhaustion, not by drowning.

Mr. Holmes, who remained on the forecastle until it was too late, together with one of the Deal men, named Jarman, or Gilman; James Twaites, a seaman; and a boy, named John Wanstall, unfortunately perished. The body of Mr. Holmes was picked up in East-ware Bay, and brought home on Tuesday. He was a man beloved

* We understand that the committee of the Dover Humane Society, recently established, have ordered a life-boat, together with Captain Manby's apparatus for throwing rockets, with lines, over wrecks, to be ready, in cases of emergency, near this port.—*Dover Telegraph*.

and esteemed by all who knew him, and has left a widow and eight children to lament their untimely bereavement.

On Monday, in consequence of several planks being washed on shore at St. Margaret's Bay, the coast guard, under the orders of Mr. Hatch, at that station, were ordered to keep a good look out. Towards evening, the attention of the men on duty was arrested by voices hailing from the sea, and shortly afterwards a piece of wreck, to which two men were lashed, was driven on shore. They were immediately released and borne to the station; but one of them, who had become deranged, and attempted to bite his unfortunate companion, died, notwithstanding every means were used for his preservation. The survivor, the only one, as he believed, out of sixteen, of the crew of the ship *Lord Sidmouth*, W. Todd, master, from New Brunswick, with timber for Hull, states that their vessel, which had been driven by the gale of Sunday from Yarmouth roads, struck on the Goodwin sands at two o'clock on Monday morning, and went to pieces at nine. The master, second mate, and three of the crew then fastened themselves to the piece of wreck, on which the two former died, and were let go. The third seaman was washed off, and the two who reached the shore, had been eight hours suffering among the beating waves, when they were released by Mr. Hatch and his boatmen.

Since writing the above, we have learned that the crew did not all perish. On Thursday, at noon, the Deal boatmen, after several attempts to gain the wreck, at the imminent danger of their lives, succeeded in rescuing four men and a boy who had remained in that awful situation for three days and nights. The poor boy died while being landed, and the men were brought on shore in a most exhausted state.

The Deal boatmen, on this, as they do on all occasions where danger is to be encountered in the cause of humanity, showed their dauntless bravery and disregard of the horrors that surrounded them, in their successful endeavours to save the lives of five fellow-creatures. Such noble conduct cannot be too strongly recommended to the notice of the Humane Society, and other national institutions which occasionally step forward to reward intrepidity, exercised for so noble a purpose.

The bark *Dixon*, Slater, for Hull, from St. John's, New Brunswick, drifted from off Sandgate, on Tuesday, on to the main between Romney and Dymchurch, and went to pieces. The crew were saved, except Mr. Slater, who unfortunately lost his life. One account states that he was drowned; another says his head was severed from his body by a crush of the timber.

Mr. Gibbs, master of the schooner *Louisa*, was washed overboard during the gale, off the South Foreland, and unhappily drowned. The vessel was taken charge of by Henry Terost, with a boat and crew from this port, and carried into Folkestone, for which the commissioners of salvage have awarded them eighty pounds.

Other wrecks of serious importance are said to have taken place on different parts of the coast. The main beam of a ship, washed on shore here, on Tuesday, marked tons 476—793,500. We have also heard that a boat, bearing the name *Henry*, of Hull, has been picked up.

WRECKS OF BRITISH SHIPPING—FROM THE SHIPPING GAZETTE, 1836.

[Continued from page 61]

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
A Collier		Honduras	Hastings	Dungeness	15 Dec.	
Acasta		Bahousie	London	Abandoned	29 Nov.	
Active		London	Dundee	Abandoned	4 Dec.	In 40° N. 32° W.
Adonant		London	Stockton	Scarborough	12 Dec.	Crew saved.
35 Adonis		Jamaica	Wilmington	Off Point Eto	21 Oct.	Crew saved.
Adeluc		Sunderland.		Off Scarborough	13 Oct.	Crew saved.
Agnes Wood	Metcalf	Limerick	London	Not heard of	since	Boat found.
Albion (sloop)		Weymouth	Fortrose	Off Tarbert	14 Dec.	
Albion	Of London	Quebec	Sligo	S. Iniskea	18 Dec.	Five saved.
40 Ana	White	Singapore	Quebec	Liverpool	8 Dec.	Abandoned.
Antey	Holdins			Humber	23 Nov.	Foundered.
Benjamin				Nakskow	Nov.	
Borside				Lowestoffe	25 Dec.	
41 Brilliant		Lynn		Dimlington	Dec.	Crew saved.
British Merchant		Off Scarborough		Spain	24 Dec.	Crew saved.
Calix				Rimonski	27 Nov.	By fire.
Camden	McKinley	Caliz	Clyde	L. Man	27 Nov.	Crew saved.
36 Clancman	Russ	Sydney	Sourabaya	L. Malura	11 Aug.	Total.
Clipper	W. Blain	Cronstadt	Newcastle	Hogland	29 Oct.	All lost.
Clery, loaded				Corsica	Sept.	Total.
Daas				Gandee	25 Dec.	All lost.
Dawson	Coulson	Newcastle	Colchester	Suffolk C.	9 Dec.	Crew saved.
42 De la See	Davidson	Of Whitby	Abandoned	At sea	19 Oct.	Wrecked.
De la See		London	London	Wexford	?	
Eden		London	Menel	C. H. Land	?	
Egfrid		London	Quebec	Sherham Sh.	17 Nov.	Abandoned.
Elton	Of Whitehaven	Quebec	Liverpool	Louisberg	13 Oct.	Two drowned.
43 Eliza	Of London	Quebec	London	At sea, abandond.	Dec.	Crew ad. by Austerlitz
Eliza	Of Liverpool	Abandoned	Waterlogged		26 Nov.	Crew saved.
Esperance	Colstem	London	Mirindich	Pr. Ed. Island	Oct.	Crew saved. [Leans.
Excellent		Honduras	London	Gucatan	10 Sept.	
Fame				Tay	11 Nov.	Crew saved.
45 Fame		Troon	Strangford	N. Rock	10 Dec.	Crew saved.
Formosa		Newcastle	London	Dimlington	4 Dec.	Abandoned.
Fr. Harris	Of Newcastle			Dominess R.	6 Nov.	Abandoned.
Friends	Of Harwich	Maningtree		Maplin I.	16 Dec.	
46 Friends (sloop)	Clay	St Petersburg	London	Blackall	16 Dec.	
Gateshead		Ramsgate	Newcastle	Terichilling	15 Dec.	Crew saved.
Genii		Liverpool	Newcastle	Kentish Kn.	12 Nov.	Crew lost.
George				Barrow Head	25 Dec.	
Goatforth		Quebec	London	Dover	25 Dec.	Five lost.
47 Harriot	Warman	London	Batice	Dosger B.	17 Nov.	Abandoned.
Henriette				Barbedos	22 Dec.	
Heres		Liverpool	St. John	Off Bombay	18 Aug.	Two drowned.
Hindoo	Driscoll	St. John	Ballyshannon	Arbil	19 Dec.	Crew saved.
Hope	Moore	Stern picked up	Glasgow	At sea	27 Oct.	
48 Howden	Of Google	Boston	Montrose	Off Humber	29 Nov.	Foundered, crew sd.
Industry	Lenox	Whitehaven	Drogheda	Off Humber	23 Nov.	Foundered, crew sd.
Industry		Yarmouth	London	B. Luce	13 Dec.	Crew saved.
Isabella		Of North Shields		Lowestoffe	16 Dec.	
Jackall		Windan	Leith	Shipwash I.	23 Dec.	Crew saved.
John Hunter		Leith	Quebec	Leibau	29 Nov.	Crew saved.
John	Christopher	Leith	Quebec	Herd Sand	27 Oct.	Crew saved.
John and Margaret		Narva	Quebec	B. Narva	26 Nov.	Crew saved.
Jona		Leith	Quebec	St. Esprit	20 Oct.	All lost.
Julianne	Findley	Batice	Jersey	Off Flambro' Hd.	13 Oct.	One saved.
49 Lara		Wreck sold	for £350	Prierland	7 Nov.	
Lightning, schooner	Run foul of	Stockton	Newcastle	Warren Ledge	11 Dec.	Near Yarmouth.
Lively		Newcastle		Sunderland	28 Dec.	Foundered.
Lord Glenlivet		Of Plymouth		Sunderland	13 Dec.	Crew saved.
Lord Melville		Of Hull	St John's, N.B.	Miguillon	5 Oct.	Three drowned.
50 Lord Sidmouth		Of Yarmouth		Goodwin	26 Dec.	One saved.
Manly		Quebec	Arran	Lowestoffe	25 Dec.	
Margaret		London	Quebec	At sea, abandond.	crew	taken by Albion.
Margaret		Of London		Davis Strait	Sept.	
Mary		St. David's	Dundee	Kirkcaldy	4 Dec.	Crew saved.
100 Mary	Denson	Teignmouth	Newcastle	Boulogne	5 Dec.	Crew saved.
Meaupia (sc.)	Morgan	Liverpool	Waterford	Killough B.	13 Dec.	All lost.
Nancy		Quebec	Ballyshannon	Rosses	12 Nov.	Crew saved.
Neprene		Of Leith	Glasgow	Argyle	14 Dec.	Crew saved.
Neptune		Of Plymouth	Abandoned	B. St. Lawrence	15 Nov.	Run foul of.
51 Obelisk	Dott	Quebec	Liverpool	B. St. Lawrence	28 Nov.	Abandoned.
Portaferry		Of Glasgow		Malta	Nov.	Crew saved.
Prince George		Quebec	London	Malta	Nov.	Wreck sold for £1100
Prince George		Of Alloa	Leith	I. Skye	Dec.	Crew saved.
52 Promise		Quebec	Liverpool	Hoyle B.	22 Dec.	
Queen		Hull	Sunderland	Trinity	23 Nov.	Foundered, crew sd.
Rebecca	Narramore	London	Sabomb	Torquay	Nov.	Crew saved.
Rhine		Stockton	London	Barday S.	25 Dec.	Crew sd.
Ruckers		Abandoned	Crew saved	by Brilliant	13 Dec.	Arr. Limerick.
53 Sandbach		Liverpool	Demerara	Mockbeggar	22 Dec.	
Sanderson		Liverpool	Demerara	Aberfraz	3 Dec.	Crew saved.
Sarah	Pearse	Newcastle	Cocagne		14 Oct.	
Sarah Ann (sch.)		Liverpool	Hay	Portfairy	27 Nov.	Foundered, crew sd.
Shawfield		Liverpool	Lochinland	Copland Islands	Nov.	Abandoned.
54 Sheffield		Quebec	Preston	Wexford	Dec.	Crew saved.
Six Sisters		Quebec	Bridgewater	Off Minchhead	10 Dec.	Foundered.
Staffordham		Swansea	Galat	Off Sulinia	Nov.	Totally lost.
Star	Squires	Glenarm	Glasgow	Stevenson S.	Nov.	Crew saved.
Swift		London	Demerara	Boulogne	3 Dec.	Seven drowned.
55 Thomas and Alfred	Sargent	Yarmouth		Erith	Dec.	Run foul of.
Victory				Portreath	Nov.	
Wellington	Davies		Dublin	B. Luce	13 Dec.	Crew saved. ?
W. Maitland	Irvine	Quebec	Sunderland	Miguillon	26 Oct.	Crew saved.
William	Robson	Whitehaven	Kirkudbright	At sea	Nov.	Foundered, crew sd.
56 Windsor				Gasper Channel	29 Aug.	Crew saved.

PROMOTIONS. (*From the Gazette.*)

Admiralty, Jan. 10th, 1837.

This day, in pursuance of his Majesty's pleasure, the following Flag-officers of his Majesty's Fleet were promoted: viz.—

Admirals of the White.

William Wolseley, Esq.; Sir John Wells, G.C.B.; Sir George Martin, G.C.B.; Sir William Sidney Smith, K.C.B.; Sir Davidge Gould, G.C.B.; Honourable Sir Robert Stopford, G.C.B.; Sir Manley Dixon, K.C.B.; Isaac George Manley, Esq. promoted *Admirals of the Red.*

Admirals of the Blue.

Sir Thomas Williams, G.C.B.; Sir William Hargood, G.C.B. G.C.H.; Sir Charles Hamilton, Bart. K.C.B.; Honourable Henry Curzon; Sir Lawrence William Halsted, K.C.B.; Sir Harry Neale, Bart. G.C.B. G.C.M.G.; Sir Philip Charles Henderson Durham, G.C.B.; The Right Honourable Lord Amelius Beauclerk, G.C.B. G.C.H.; William Taylor, Esq.; Sir Thomas Byam Martin, G.C.B.; John Lawford, Esq.; Frank Sotherton, Esq. and *Vice-Admirals of the Red*; Charles William Pater-son, Esq.; Right Honourable Sir George Cockburn, G.C.B. promoted *Admirals of the White.*

Vice-Admirals of the Red.

James Carpenter, Esq.; Sir Graham Moore, G.C.B. G.C.M.G.; Joseph Hanwell, Esq.; Sir Henry W. Bayntun, K.C.B.; Sir Richard Lee, K.C.B.; Sir Peter Halkett, Knight, G.C.H.; Philip Stephens, Esq.; Honourable Charles Elpinstone Fleeming; Sir William Hotham, K.C.B.; Sir Pulteney Malcolm, G.C.B. G.C.M.G.; Sir John Harvey, K.C.B. and *Vice-Admirals of the White*; Sir Josias Rowley, Bart. K.C.B. G.C.M.G.; Sir Edward Codrington, G.C.B. G.C.M.G.; Sir George Parker, K.C.B. promoted *Admirals of the Blue.*

Vice-Admirals of the White.

John Erskine Douglas, Esq.; Ross Donnelly, Esq.; Sir John Poo Beresford, Bart. K.C.B. G.C.H.; Thomas Le Marchant Gosselin, Esq.; Sir Charles Rowley, Bart. K.C.B. G.C.H.; Robert Rolles, Esq.; Sir David Milne, K.C.B.; Sir Robert Waler Otway, Bart. K.C.B.; Richard Dacres, Esq. G.C.H.; Edward Fellows, Esq. and *Vice-Admirals of the Blue*; Sir Willoughby Thomas Lake, K.C.B.; Sir Charles Ogle, Bart.; Henry Raper, Esq.; Sir George Eyre, K.C.B.; Robert Dudley Oliver, Esq.; Man Dobson, Esq.; Honourable Sir John Talbot, K.C.B.; John Richard Delap Tollemach, Esq.; John Giffard, Esq.; promoted *Vice-Admirals of the Red.*

Vice-Admirals of the Blue.

John West, Esq.; Stephen Poyntz, Esq.; Right Honourable John Lord Colville; John Cocket, Esq.; Sir Henry Digby, K.C.B.; Sir Charles Ekins, K.C.B.; Benjamin William Page, Esq.; Honourable Philip Wodehouse; Thomas Alexander, Esq. and *Rear-Admirals of the Red*; Right Honourable Lord Mark Robert Kerr; Sir Thomas Harvey, K.C.B.; Sir Richard Hussey Hussey, K.C.B.; Henry Richard Glynn, Esq.; Sir Edward Hamilton, Bart. K.C.B.; Sir Thomas Baker, K.C.B.; Sir Robert Laurie, Bart. K.C.B.; Sir William Hall Gage, Knight, G.C.H.; Honourable Sir Charles Paget, Knight, G.C.H.; Richard Worsley, Esq.; Aiskew Paffard Hollis, Esq. promoted *Vice-Admirals of the White.*

Rear-Admirals of the Red.

Sir Henry Heathcote, Knight; Sir Edward W.C.R. Owen, K.C.B. G.C.H.; Sir George Scott, K.C.B.; Sir Thomas Dundas, K.C.B.; Richard Harrison Pearson, Esq. and *Rear-Admirals of the White*; Sir John Tremayne Rodd, K.C.B.; Sir Thomas Masterman Hardy, Bart. G.C.B.; Sir Graham Eden Hammond, Bart. K.C.B.; Robert Honyman, Esq.; Hugh Dowman, Esq.; Honourable Sir Thomas Bladen Capel, K.C.B.; Right Honourable Lord James O'Bryen, G.C.H.; Richard Matson, Esq.; John Mackellar, Esq.; Sir Charles Adam, K.C.B.; William Grainger, Esq.; John Chambers White, Esq.; Adam Drummond, Esq.; Robert Hall, Esq.; Robert Lloyd, Esq. promoted *Vice-Admirals of the Blue.*

Rear-Admirals of the White.

Sir Thomas Livingston, Bart.; Sir Edward Brace, K.C.B. and *Rear-Admirals of the Blue*; Sir Jaleel Brenton, Bart. K.C.B.; Francis William Austen, Esq. C.B.; Sir

Patrick Campbell, K.C.B.; Norborne Thompson, Esq.; Edward Stirling Dickson, Esq.; Thomas James Maling, Esq.; Sir John Acworth Onmanney, K.C.B.; Henry Steward, Esq.; Zachary Mudge, Esq.; Henry Hill, Esq.; Alexander Wilmot Schomberg, Esq.; Sir Edward Durnford King, Knight, G.C.H.; Henry Vansittart, Esq.; George Mundy, Esq. C.B.; Sir Philip Bowes Vere Broke, Bart. K.C.B.; Sir Frederick Lewis Maitland, K.C.B.; Frederick Warren, Esq.; James Carthew, Esq. *promoted Rear-Admirals of the Red.*

Rear-Admirals of the Blue.

Sir Thomas Briggs G.C.M.G.; John Broughton, Esq.; Right Honourable Thomas, Earl of Dundonald; Sir William Parker, K.C.B.; Sir Robert Tristram Ricketts, Bart.; George M'Kinley, Esq.; Sir Charles Dashwood, Knight, *promoted Rear-Admirals of the White.*

And the undermentioned Captains were also appointed Flag-officers of his Majesty's Fleet.

Richard Curry, Esq. C.B.; William Skipsey, Esq.; Honourable Frederick Paul Irby, C.B.; John Wentworth Loring, Esq. C.B.; Sir Robert Howe Bromley, Bart.; Honourable Duncombe Pleydell Bouverie; John Dick, Esq.; Sir Samuel Warren, Knt. C.B., K.C.H.; Anselm John Griffiths, Esq.; Sir Charles Bullen, Knt. C.B., K.C.H.; George Tobin, Esq. C.B.; William Henry Webley Parry, Esq. C.B.; Edward Galwey, Esq.; John Hayes, Esq.; *promoted Rear-Admirals of the White.*

Samuel Campbell Rowley, Esq.; Thomas Browne, Esq.; Samuel Pym, Esq. C.B.; Robert Jackson, Esq.; Sir Robert Barrie, Knt., C.B., K.C.H.; Charles Bayne Hodgson Ross, Esq. C.B.; Sir Charles Malcolm, Knt.; Francis William Fane, Esq.; Honourable George Elliott, C.B.; William D'Urban, Esq.; James Hillyar, Esq. C.B., K.C.H.; Right Honourable Lord William Fitzroy, C.B.; Right Honourable Lord George Stuart, C.B.; Sir Hugh Pigot, Knt. C.B. K.C.H.; John Power, Esq. C.B.; Edward Hawker, Esq.; Charles Richardson, Esq. C.B.; Sir Arthur Farquhar, Knt. C.B. K.C.H.; Sir James Alexander Gordon, K.C.B.; Honourable Frederick William Aylmer, C.B.; Richard Thomas, Esq.; *promoted Rear-Admirals of the Blue.*

Admiralty, Jan. 10.

His Majesty has been graciously pleased to appoint the three officers under-named to be Extra Naval Aides-de-Camp to his Majesty:—Captain Thomas Brown; Captain Sir F. A. Collier, C.B. and K.C.H.; Captain Sir William Howe Mulcaster, C.B. and K.C.H.: vice Captain Honourable George Elliott; Right Honourable Lord George Stuart; and the Honourable F. W. Aylmer; promoted to the rank of Rear-Admirals.

The following Senior Captains, who are not mentioned in the Gazette, will obtain the rank of Retired Rear-Admirals, not having had their pendants flying in active service the period pointed out in the Order of Council for regulating flag promotions:

Charles Fielding, Daniel Woodriff, C.B., John Winne, Richard Poulden, Peter Ribouveau, Matthew Buckle, John Allen (a), James Noble, Francis Holmes Coffin, Jeffery Raigersfield, Christopher J. Williams Nesham, John Wight, Henry Folkes Edgell, Cornelius Quinton, William Butterfield, Richard Byron, C.B., William Young, William Henry Daniell, Jacob Walton, Augustus Brine, Bulkley Mackworth Praed, Samuel Mottley, Edward Walpole Browne, John Rouett Smollett, William Ricketts, Honourable William Le Poer Trench, Edward Sneyd Clay, Charles Carter, Francis Godolphin Bond, William Henry Brown Tremlett, Samuel Butcher, Robert O'Brien, Matthew Godwin, James Master, Sir Salusbury Price Humphreys, Knt. K.C.H. C.B., Francis Temple, Henry Gordon.

Commanders promoted Captains.—William Slaughter (1810); Thomas Gill (1814); John Parsons (1816) *Thunderer*; William Allen Herringham (1818) *Forté*; Robert Gordon (1820); James Brasier (1822) *Caledonia*; Robert Fair (1823) *Champion*; Robert Coutart M'Crea (1824) *Zebra*; John Pole (1824); Michael Quin (1824) *Raleigh*; Richard Owen (1826) *Thunder*; William Hewett (1826) *Fairy*, surveying vessel; John Balfour Maxwell (1827) *Gannet*; John Rivett Carnac (1827); Spencer Lambert Hunter Vassall (1827); Thomas Maitland (1827) *Tweed*; Thomas Dilke (1827) *Wanderer*; William Robertson (1827) *Castor*; William Hargood (1828); Sir Thomas Raikes T. Thompson, Bart. (1828); Hugh Nurse (1828) *Pearl*; Robert Smart, K.H. (1828) *Dublin*; George Rodney Mundy (1828) *Favourite*; Sir William Dickson, Bart. (1829); and William Sydney Smith (1830).

Lieutenants promoted Commanders.—L. Augustus Robinson (1812) *Viper*; Robert Loney (1812); William Henry Quin (1813) *Britomart*; J. Hallows (1814) *Malabar*; Samuel Fielding Harmer (1814) *Sparrowhawk*; John Adams (b) (1815) *Waterwitch*;

John Morgan (1815) late *Seafower*; T. V. Watkins (1815) *Britannia*; Francis Decimus Hastings (1819) *Excellent*; Michael Atwell Slater (1821); C. Anstruther Barlow (1822) *Royalist*; Frederick Patten (1822) late *Rapid*; Thomas Mathias (1823) *Caledonia*; Adam Camperdown Duncan (1823) *Howe*; Henry John Worth (1823) *Endymion*; F. Rawdon Moira Crozier (1826) late *Cove*; J. Neale Nott (1826) *Edinburgh*; George Hathorn (1827) *Canopus*; George Ramsay (1827) *Rodney*; Henry Eyres (1827) *Pantaloon*; J. William Douglas Brisbane (1827); John Clements Wickain (1827) *Beagle*; H. Edmund Edgell (1828) *Rodney*; Sidney H. Ussher (1828) *Skipjack*; and George Byng (1829) *Pincher*.

Mates promoted Lieutenants.—Messrs. Matthew Peppin, William Robinson, George Morritt, Frederick W. Foote, John Hollingworth, William Ellis, John Paterson Bower, John Currie Bynon, Bartholomew Jeffery, C. W. Lindsay, Augustus Cooper, Augustus Henry Ingram, David Edwards, W. E. Triscott, Robert Boyle Miller, John Sibbald, John Henry Norcock, V. A. Massingberd, Peter Benson Stewart, John Fitzgerald Carroll, Graham Gore, D. R. B. Mapleton, J. C. Hoseason, Richard Strode Hewlett, John L. Stokes.

Vice-Admiral Sir Robert Waller Otway, Bart. to be Commander-in-Chief at Sheerness, vice Hon. Charles Elphinstone Fleeming, promoted.

The Hon. Vice-Admiral Sir Charles Paget, to be Commander-in-Chief at Jamaica, vice Sir P. Halket.

Rear-Admiral John Hayes, Superintendent of Plymouth Yard, vice Captain Ross, C.B.

Captain Hyde Parker, to be Superintendent of Chatham Yard, vice Sir James Alexander Gordon, K.C.B.

Captain Sir John Louis, Bart. to be Superintendent of Deptford Yard, vice Rear-Admiral Sir Samuel Warren.

Captain Cumby, to be Superintendent of Milford Yard, vice Sir Charles Bullen.

MONTHLY PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captains.—F. W. Lapidge, R. Barton Sartorius restored.

Commanders.—R. Otway, T. P. Le Hardy, S. Grundy, S. G. Freemantle.

Lieutenants.—W. Fowler, Sir F. A. Nicholson, Bart., J. C. Rynon.

Pursers.—G. Dix, G. Doubt.

Surgeons.—B. Bynoe, A. Baxter, W. T. Ballantyne.

APPOINTMENTS.

[For Names of Vessels see corresponding Numbers.]

Captains.—Sir W. E. Parry, Director of Post-Office Packets; J. Hancock, C.B. 11, and to command Ordinary.

Commanders.—A. Milne, 15; Hon. J. Denman, 8; H. E. Coffin, 9; Lord Clarence Paget, 16.

Lieutenants.—J. Tyssen, 1; F. Blood, 1; H. D. Forster, 1; G. Lavie, 8; E. W. Pitt, vice Simmonds, 2; W. Luce, to command, 14; T. V. Anson, 15; G. Davis, to command, 22; A. Leathart, 5; C. S. Williamson, 5; W. Lovett, Agent for Transports, Hotspur, at Deptford—this officer distinguished himself some time ago in defending the *Marquis of Huntley* from an attack of pirates on the coast of Africa; H. F. Mills, 9; R. Parry, 27, at Babbicombe, Devon; H. T. Laye, 1; G. Morritt, 29.

Masters.—J. Rogers, vice Browne, 9; J. F. Boxer (act.) 8; J. Pascoe, 17; W. Bate-man, 5.

Surgeons.—J. Gordon, 8; J. Kittle, 5.

Chaplain.—Rev. J. E. Lurridge, 1.

Pursers.—J. B. Serjeant, 1; J. Holmes, 9; G. Doubt, 15; G. T. Plumbly, 8; J. Roberts, 6; H. South, 8; — Mosely, 9; M. A. France, 26.

Mates.—C. Powell, 7; T. Tickell (coll.) 7; E. M. Hogge, 10; R. Rouse, 1; H. Vaughan, 5; J. Taylor, 5; F. Bouchier, 6.

Assistant Surgeons.—W. Webbe, 3; J. S. Peddie, 4; T. J. Graham, 1; A. Clarke, 21; A. D. Bain, 5; J. Thompson, M.D. 4; P. Brenan, 11; C. D. Steel, 4; W. Hobbs, 25; W. Orr, 3.

Midshipmen.—W. Need, 5; F. G. Simpkinson, 6; G. M. Jackson, 6; W. W. Walker, (coll.): J. Voules, 10; L. C. H. Tonge, 23; T. Belgrave, 6.

Second Masters.—W. Tozer (act.) 11: W. Willis (act.) 11: W. Martin (act.) 11: R. Allen, 24.

Master's Assistants.—W. Gallon, 6: J. Duncan, 20.

Volunteers, 1st Class.—J. Tottenham (coll.) 1.

Clerks.—H. M. D. Niblett, in charge, 18: G. Wise, 19.

Boatswain.—W. Jones, 8.

Carpenter.—G. C. Hunt, 8.

Gunners.—A. Parker, 13: H. Marks, 8.

[Vessels' Names to whom Officers are Appointed.]

1 Stag.	8 Scylla.	15 Snake.	22 Tartar, Rev. Cutr.
2 Victory.	9 Trinculo.	16 Pearl.	23 Inconstant.
3 Royal Adelaide.	10 Seaflower.	17 Alert.	24 Savage.
4 Britannia.	11 San Josef.	18 Griffon.	25 North Star.
5 Wolverine.	12 Harlequin.	19 Dido.	26 Coast Guard.
6 Samarang.	13 Charybdis.	20 Confiance.	27 Melville.
7 Excellent.	14 Pigeon.	21 Opossum.	

Births.

At Penryn, the lady of Henry Crease, Esq. R.N. of a son.

On the 7th Dec. at Ryde, Isle of Wight, the wife of Commander J. B. Mc. Hardy, Inspecting Commander of the Coast Guard, of a daughter.

On the 10th Jan. at Belle Vue House, Southsea, the lady of Arthur W. Jerningham, Esq. Lieutenant of H. M. S. Excellent, of a daughter.

On Dec. 29th at Teignmouth, the lady of Captain L. C. Rooke, R.N. of a son.

On Dec. 6th in H. M. Dock Yard, the lady of W. Walker, Esq. of a daughter.

Marriages.

At St. Helena, Nov. 16th 1836, Edward Gulliver, Esq. R.N. (late of H. M. S. Thalia) Master Attendant at St. Helena, to Caroline, eldest daughter of Thos. Baker, Esq. of that Island.

On the 15th at St. George Church, Stonehouse, by the Rev. H. A. Greaves, Harry Niblett, Esq. Purser, R.N. to Elizabeth, widow of the late Charles Harry, Esq. Surgeon.

At Henbury, Capt. Charles Bowen, R.N. to Mary Hannah, youngest daughter of the late George Fisher, Esq. of Hill-side, Gloucestershire.

On the 5th Jan. at St. Thomas, by the Rev. C. Henville, F. F. M. Strong, Esq. of H. M. S. Fairy, to Frances Anne, eldest daughter of Lieut. Loney, R.N. Buckland.

Dec. 20th at Everton, Nottinghamshire, the Rev. Fred. William Trevanion, of Caerhay's Castle, Cornwall, to Lavinia Sophia, only daughter of the late Captain Percival, R.N.

At St. Mary's Church, Lancaster, by the Rev. John Dodson, A. M. Vicar of Cokerham, Thomas Gudgeon, second son of John Dodson, Esq. of Lancaster, to Eliza, second daughter of the late Morecroft Kirkes, Esq. R.N. of Holker in the said county.

Deaths.

At Fareham, on the 16th Jan. Capt. C. Patton, R.N. (retired list) aged 96.

At Haslar Hospital, Lieut. R. T. Hodges, R.N. (1806.)

At Blackbrook Cottage, Fareham, Mary Jane, wife of G. T. M. Purvis, Esq. aged 29 years.

Recently, Lieut. G. C. Stovin, R.N. At Hythe, Georgina, fourth daughter of Captain G. W. Willes, R.N.

On the 17th Dec. on board H.M.S. Brune, at Chatham, Richard Shool, Esq. Purser, Esq. aged 51. By his family and friends his loss will be long deplored.

Lately, Lieut. G. I. Mitchell, R.N.

On the 18th Jan. at Lewisham, Lieut. R. L. Parkinson, R.N. aged 38.

At Greenwich Hospital, Dec. 17th, J. Brenton, Esq. R.N. aged 58.

At Ramsgate, aged 54, Com. Woolward, R.N. many years harbour master.

On the 17th Jan. at Fareham, T. E. Forbes, Esq. late of the Navy-pay office, aged 62.

In Dublin, 22nd Dec. after an illness of only two days, Anne Elizabeth Rawnsley, the beloved daughter of Captain Rawnsley. R.N.

At Chatham Hospital, on the 17th Jan. Lieut. W. Coyde, R.N. aged 32, leaving a young widow to deplore the loss of an affectionate husband.

Lately, Capt. W. Fulke Greville, R.N. on the Retired Captains' List, 1783.

On the 21st Dec. at Paris, Lieut. Ludovick Grant, R.N. aged 45 years.

At Edinburgh, 14th Dec. Capt. Spear, R.N.

On the 28th Nov. at the house of his father, Coote Carroll Nelson, late 1st Lieut. of H. M. S. Hastings, youngest son of Lieut. Gen. Nelson, St Aubyn-street, Devonport.

Jan. 1st at Kensington, Captain W. Maxfield, of the Indian Navy, late Deputy Surveyor General of the coast of India, formerly M. P. for Great Grimsby, and

Magistrate for the county of Middlesex, aged 55.

On the evening of Christmas-day, at Bowness, on the banks of Windermere, in the 68th year of her age, Elizabeth Margaret, wife of Captain Stamp, R.N.

A few days since, in the Asylum, at Haslar Hospital, (b) 1815, the well known compiler and editor of the Royal Naval Biography, the concluding volume of which he had completed just previous to his last illness.

Lately, Lieut. John Barclay, R.N.

At Great Yarmouth, Mrs. Anne Street, in her 86th year, grandmother of Lieut. James Lash, R.N. of that town.

At the residence of her father, Quarry-street, Devonport, Charlotte, youngest daughter of Mr. J. Symons, R.N. aged 19 years.

In Britain-street, on the 19th Dec. Mr. William Simpson, R.N. aged 64 yrs.

At the Royal Hospital, Greenwich, on the 12th Jan. at the advanced age of 90, Ann, the wife of the late Mr. S. A. Spear- ing, for many years First Lieut. of that Establishment.

At Stonehouse, Mrs. Servante, aged 71. relict of the late Lt. Servante, R.N.

Betsey, the wife of Commander Joseph Hellard, aged 63.

In London, Kate, wife of Capt. John Filmore, R.N. late of Devonport.

At her residence, 25, Union Street, Stonehouse, Jennifer, relict of the late John Wills, Esq. Purser, R.N. aged 66 years.

At Portsea, on the 19th Jan. William Albert, only son of W. Hood, Esq. Purser of H. M. S. Ætna.

METEOROLOGICAL REGISTER,

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

DECEMBER, 1836.														
Month Day.	Week Day.	BAROMETER. In Inches and Decimals.		FAHRENHEIT'S THERMOMETER, In the Shade.				WIND.				WEATHER.		
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.	
								A.M.	P.M.	A.M.	P.M.			
		In. Dec.	In. Dec.	°	°	°	°							
1	Th.	29.96	30.00	40	44	37	46	S.W.	S.W.	1	2			Bcm.
2	F.	30.05	29.94	48	52	39	52	S.W.	S.W.	5	9			Qp (2)
3	S.	29.77	29.75	47	53	47	54	S.W.	S.W.	5	7			Bc.
4	Su.	29.80	29.82	52	53	51	54	S.W.	S.W.	5	5			Qd (4)
5	M.	29.86	29.85	53	55	51	56	S.W.	S.W.	5	6			Qo.
6	Tu.	30.00	29.96	51	53	46	54	S.W.	S.W.	3	4			Bc.
7	W.	29.53	29.43	50	52	47	53	S.W.	S.W.	6	7			Bc.
8	Th.	29.22	29.16	45	41	40	48	S.W.	S.W.	7	6			Bcp (4)
9	F.	29.07	29.00	39	41	35	48	S.W.	S.W.	5	4			Bc.
10	S.	29.21	29.23	33	40	30	41	S.W.	S.W.	3	4			Bc.
11	Su.	29.60	29.60	35	38	31	39	S.W.	W.	2	2			Bcm.
12	M.	29.56	29.46	37	49	28	50	S.E.	S.W.	2	5			Bcp (2)
13	Tu.	29.26	29.22	46	47	46	50	S.W.	S.W.	5	4			Bcp (1)
14	W.	29.30	29.34	37	45	35	45	S.W.	S.W.	2	6			Bc.
15	Th.	29.97	30.01	37	37	35	44	N.W.	S.W.	5	3			Bcp (4)
16	F.	29.73	29.82	36	42	32	43	S.W.	W.	3	5			Qor (1)
17	S.	30.12	30.10	35	44	33	45	S.W.	S.W.	2	3			Bc.
18	Su.	30.12	30.14	48	48	44	52	W.	S.W.	3	2			Bcm.
19	M.	30.17	30.13	47	49	44	50	S.	S.W.	3	3			O.
20	Tu.	30.22	30.27	44	44	43	45	W.	S.W.	1	1			Fd. (1)
21	W.	30.29	30.29	42	45	38	45	S.W.	N.W.	3	4			Ogd (2)
22	Th.	30.37	30.29	41	45	40	47	W.	S.W.	3	3			Ofg.
23	F.	29.86	29.76	38	34	32	46	N.	N.	4	5			Bc.
24	S.	29.70	29.77	32	32	29	33	N.E.	N.E.	5	5			Beps (1/2)
25	Su.	29.76	29.72	28	30	27	31	N.	N.E.	6	10			Beps (2)
26	M.	29.55	29.51	28	31	27	32	N.E.	N.E.	9	9			Qos. (1) (2)
27	Tu.	29.57	29.62	30	29	30	31	N.E.	N.E.	8	7			Qos. (2)
28	W.	29.86	29.88	32	32	27	33	N.	N.E.	5	5			O. (2)
29	Th.	29.90	29.90	30	33	26	34	N.E.	N.E.	3	2			Os (2)
30	F.	30.06	30.06	28	30	28	32	N.E.	N.	2	2			Os (2)
31	S.	30.25	30.32	27	31	25	31	N.	N.	4	3			Bcm.

DECEMBER—Mean height of the Barometer=29.791 inches; Mean Temperature=40.1 degrees; Depth of Rain fallen=1.65 inches.

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

ORIGINAL PAPERS.

MARCH, 1837.

ICEBERGS AND CURRENTS OF THE NORTH ATLANTIC.

THE circumstance of icebergs and drift-ice being seldom seen in these latitudes to the eastward of the fortieth degree of west longitude, while there is an uninterrupted open ocean from Labrador to Ireland and Great Britain, is worthy of attention.

Between 42° and 43° west, is the farthest easterly position in which we have been able to trace these floating masses of ice, and this is near the meridian of the southern extreme of Greenland.

The wide opening between Cape Farewell, and the eastern extremity of Labrador, through which the Arctic currents run, faces the S.E., which would lead the flowing waters in a direct course towards the coasts of Marocco, and the Sahara, passing to the northward and eastward of the Azores, Madeiras, and Canaries. It may be presumed, however, that only a small portion, comparatively, of the body of water ejected from Arctic inland seas pursues this route, and that the stream is not continuous to the shores of North Africa.

In Davis's Strait we find the current generally setting southerly. Those ships which were beset last year, drifted with the ice to the south, but the strength of this current seems to be very variable, and at times trifling: in October in $62^{\circ} 53' N.$, and $62^{\circ} 52' W.$ it set S. $8^{\circ} W.$, only eight miles in twenty-four hours; a degree further south, it ran sixteen miles in the twenty-four hours.*

The directions assumed by the current from Hudson's and Baffin's seas on escaping into the open ocean appear to be:—1. To the south towards the north coast of Newfoundland, and there being checked by the land, it winds round the east coast in the channel-deep, formed by the island and the northwest part of the Grand Bank, until it meets the flood from the gulf of St. Lawrence:—2. To the South-west through the strait of Belle Isle:—3. An off-set to the S.S.E. passing to the eastward of the Grand Bank; it is by this latter that the icebergs and drift-ice are conveyed into the Atlantic as far to the east as we have traced them; where the set, probably, becomes exhausted, or joins the Florida stream:—4. It is certain that a portion of the flowing waters from Cape Farewell, takes a direction to the E.S.E. This current was experienced by the first polar expedition under Capt. Ross, and its southern limit in $36^{\circ} 21' W.$ was in latitude $57^{\circ} 8' N.$ The direction may be correctly inferred, without farther proof, from the trial-bottles set adrift by the discovery ships, which were found on the coasts of Great Britain and Ireland. And we may reasonably conclude, that whatever ice may be carried into the open ocean by this stream, must be of small dimensions and quickly dissolved; for if this were not the case, those floating dangers would assuredly find their way to our coasts as well as the bottles.

The first ice seen by Capt. Ross was near the meridian of Cape Farewell; and in July, 1812, the Hudson "Bay" ships first met with it in Hudson's Strait.

* One of the ships caught in the ice lately, drifted 600 miles with it.

It may be presumed, also, that seasonal changes have an influence on all these streams ; and consequently, that, during the summer, from the melting of the ice and the snow, their volume and velocity will be augmented ; and, on the contrary, in the winter these will be diminished, and perhaps some of the off-sets be suspended. That any disarrangement in the level of the waters of Baffin's sea takes place in consequence of the melting of ice and snow, or from pluvial discharges, we are not inclined to believe ; considering that any general accumulation is prevented by the vigilance of the evaporating power, as well as by the currents which carry off the superfluous waters with a velocity regulated by the amount of the accessions. The specific gravity of the water of this easterly current in the Atlantic was found to be less than the water to the southward of it ; from which it may be inferred that the fresh water does not entirely mix with that of the ocean for a considerable distance from its point of exit ; this freshness was not only indicated by the less density of the water, but also its coldness, which was greater than that of the air ; this was noticed as far to the eastward as $36^{\circ} 21' W$.

It was long considered that sea water did not freeze, but this has been satisfactorily proved to be erroneous : Captain Sir John Ross found it seven or eight feet thick in the course of a winter ; and it is clear that the increase is downwards as well, the thickness being augmented by the freezing of snow on the surface above. The water from ice taken up at sea has been found to be fresh when not in a spongy state. It has been considered that the accretions from snow upon the surface water when frozen, account for the freshness ; but, although this may be true, yet it has been ascertained that water taken from the ocean and put into a bottle, having become frozen and burst the bottle, it was found to be fresh. From observations made with respect to the operation of cold on the water of a river, it is probable that the saline particles held in solution in sea-water are precipitated by the effect of extreme cold before congelation. It has been ascertained from careful and repeated observation, for several years, that the water of the Avon, which in mild weather is extremely turbid, becomes quite clear, and of a sea-green colour, whenever the temperature approaches near to the freezing point. Whether the increased density of the atmosphere may, by its pressure, have anything to do in the matter, is uncertain, but the fact is invariable.

The inference to be drawn from the fact of ice-drifts being confined to the meridians between the fortieth degree west, and the American continent is, either that no ice proceeds from the northern regions to the east of the fortieth degree west, into the Atlantic, because icebergs which may be generated on the eastern coast of Greenland, cannot reach the open ocean on account of the fixed barrier of ice, or that, if any large masses of ice proceed from the N.E. towards the shores of Iceland, they find their way thence to the coast of Newfoundland, or otherwise are acervated upon the barrier. Something of this sort must occur, or what is to prevent them from being carried to the east or S.E. by the currents? We know of no reported or recorded instance of ice-bergs being seen on our coasts, although we recollect to have read an account of one having approached very near to Antigua. In the former case an iceberg would have to drift about

1,200 miles ; in the latter about 2,100, with the increase of temperature in a double ratio ; crossing the climatal parallels nearly on a meridian line.

Whatever may be the direction of the current between the north of Scotland and the Pole, we may conclude, from there being no land (except an isle or two) in that direction, that icebergs are not common to the south of the southern margin of the icy barrier ; and we suspect the direction of the current is to E.S.E.

From our limited knowledge of the principles which govern the motions of the waters of the ocean, the eccentric movements of currents become very puzzling, and, with all our ingenuity, extremely difficult to be accounted for in a very satisfactory manner. The opinions of practical men drawn from experience and sober thought, although they may not always be in strict accordance with sound philosophy, may yet, if leading to no other good, serve at least to keep the subjects alive, and to draw attention towards them, besides emulating others, perhaps, to the salutary exercise of their mental powers, and spiring up their faculty of observation. At all events, we may rest assured that the scientific theorist, although he should find little or nothing to assist him in drawing just conclusions from these opinions, yet from superior philosophical knowledge, he can never be deceived into an error from the false deductions of others.

It is quite impossible, from detached facts, to determine beyond a doubt, whether the directions of the streams we have been speaking of, are invariably held, or are merely occasional ; or whether they may not even be liable to a change of course diametrically opposite.

A bottle from the Hecla, then to the southward of Greenland, was found at Teneriffe! Here we are perplexed, as it is impossible to say with certainty what course or courses this bottle followed : it may have gone direct with a S.E. drift ; but this is not likely ; a more probable conjecture is, that it passed close to the shore of Newfoundland, and reached the Florida stream when pressed northward ; but it is just as likely to have been banded about from set to set until it finally reached the S.E. current between the Azores and Teneriffe.

In the summer, when southerly winds are occasionally felt between Newfoundland and Ireland, a drift current of about twenty miles in the twenty-four hours has been experienced, setting to the northward : the Jamaica ships in June, 1835, were exposed to its influence for several days. Whether this current may proceed from the fluent waters of the northern edge of the Florida stream being turned by the wind, or may be the S. S. E. Arctic set, altered in direction by the influence of the south wind, we cannot determine ; be that as it may, it would seem at first to throw a doubt upon the generally-received opinion of the Arctic waters flowing to the southward. We conceive, however, that this northerly set can only be considered as an occasional one ; and it seems to us quite within the bounds of probability, to consider that the south-east Arctic branch-current, crossing these parallels, may meet no great impediment to its course from this northerly set, but accommodate itself to the changed circumstances by *dipping* ; or, in other words, by pursuing its original course

beneath the warmer water of the other, at the depth probably, of not more than two or three fathoms.

It is perhaps this occasional current to the northward that has, in the *first* instance, influenced the course of the current-bottles set adrift in these latitudes, and found upon the western coasts of Britain and Ireland, as also the tropical productions, (if these really proceed from the westerly current,) such as the cocoon, the nicket or nicker, the antidote, and the horse-eye, which are said to have been picked up even as high as the western isles of Scotland occasionally. It certainly is not improbable that some of these nuts may have been carried all the way from Cuba or Florida by currents; but it is much more likely that they were thrown overboard with the sweepings of the decks from West Indiamen near our own coasts, and within the influence of the tides, on clearing out the ships in readiness for entering their respective ports of destination. The sailors pick these nuts up from the beach, and take them on board often in quantities, considering them as curious presents for their friends at home. In the rivers and ports frequented by West India ships in this country, hundreds of the husks of the cocoa-nut may be seen floating about, and lying at the high-water mark on the banks. In the Bristol channel they are common enough, together with orange-peel, pieces of sugar-cane, bamboo, &c.; but no person has attributed their presence so far from their native groves to the agency of the Florida stream. The other things being less abundant, and seen only at long intervals, have given rise to the wonder and the opinion. This latter circumstance, by-the-by, being of rare occurrence, if it could truly be traced to the mysterious stream, would shew that the queen of currents is seldom pressed sufficiently to the north to throw her floating treasures into the lap of her herald, to be borne to our shores as a sort of tributary homage to the majesty of the greatest maritime nation the world ever knew.

It appears yet undetermined how far to the eastward the Florida stream ranges—a point that really seems worth a little care to settle. Some perplexity would probably attend an investigation of this matter, from the stream towards its eastern bounds becoming feeble and spreading wide, as also being subject, we may presume, to be diverted from its course by northerly and southerly winds; yet, it would still be an object of interest and importance to the mariner; and the best information from competent authority thus gained, could not fail of becoming highly valuable to him. The waters of that part of the Atlantic from America to Europe, between the fortieth and sixtieth degrees north, we may properly consider as being constantly in motion, acted upon by various causes. The consequence is, that, during the prevalence of the strong winds between south-west and north-west, the waters already in streams, (at least those, the velocity of which is not too powerful, or the volume of which is not very deep,) acquire by the force of these winds, *sets* respectively towards the points to which these winds blow; and this may satisfactorily account for the general tendency of the waters between these parallels to the eastward. But it is a question, whether a space of sea in a quiescent state, would be acted upon by the agency alone of any wind, so as to flow in a stream or current.

There is no doubt that a certain degree of fluency is imparted to

the sea by the action of the wind, when harrowing up the waters during strong gales ; this, however, does not constitute a current, but what may be termed a *drift*.

The plain reason for such a doubt is so well known to seamen, that none will perhaps question its propriety, although it does not appear to have been advanced before by writers : it is, that *all* strong winds do not induce a current, and therefore such cannot be urged as a general principle.

Upon this datum it seems, that as surface currents only occasionally flow during the prevalence of gales, we must conclude that wind, unaided by any other principle in nature, has not the power of setting in motion in a *stream* water which had previously been in a quiescent state ; that either the water itself, or the atmosphere incumbent over it, or both, as being necessary to the end, should be in a peculiar state, hitherto unsuspected, to receive or impart a flowing motion. The wind, when that has been acquired by the water, then becoming a directing power, as well as a propelling one. This, at first, may appear to some persons as a fanciful surmise ; it has not, however, been lightly considered, but the result of much thought and reflection ; and until it can be proved that a current is produced by every strong or stormy wind that blows, perhaps most seamen will consider the doubt as justified. The north-east trade-wind, which is perennial, gives to the waters a *set* amounting only to from nine to eighteen miles in the twenty-four hours. The Florida stream runs stronger with an opposing wind in the strait. And the discovery ships near Melville Island found a strong current running to the west, whilst a gale was blowing from that quarter. The *drift* of ships too during hurricanes has been comparatively trifling, compared to the strength and pressure of the wind.

Very careful observations by competent persons must take place, ere we can expect to have this matter elucidated. The electric fluid which pervades all nature may have great influence in this respect ; when we are told that it gives pulsation to the heart, what cannot we expect of it ? Sudden differences of temperature between the air and the water may be taken into consideration. From analogy, too, we may not unreasonably infer, that, as vallies, from their particular situation with respect to certain winds, act as conductors to the aerial fluid, oceanic *permanent* currents may be guided in their courses by the disposition of the submarine mountain chains.

The following points appear evident :—1. Water already in motion, especially in narrow channels, may have its velocity augmented by a brisk gale blowing in the same direction that the stream flows. 2. A strong wind may turn a weak or superficial current from its original course. 3. Water in a trough, or canal, or aqueduct, may be raised on the leeward side, and proportionally depressed on the windward side, or end, by a strong wind causing pressure ; common sense dictates, however, that what may take place on so small a scale is inapplicable to the open ocean.

An interesting question remains to be clearly and satisfactorily answered, namely, what becomes of the vast influx of water thrown into the Atlantic, from the Arctic region to the westward of the fiftieth degree ? This can only be resolved from yet careful investi-

gation. At present we know little or nothing of the matter. It appears evident, however, on a mere inspection of the chart, that the mighty Florida stream is a boundary to the southward that it cannot pass over. There can be no doubt that much of the supply runs in the line of coast to the south-west, perhaps even as low as the peninsula of Florida, where, having acquired a high degree of temperature, it may serve to augment the great stream itself; it is probable, too, that a portion escapes round the end of the great bank running to north-east, until spread abroad, and, that under-currents dispose of the rest, so as to maintain a proper level, an operation which nature will accomplish to a certainty, in some way or other.

Perhaps these remarks may be appropriately concluded by observing, that if there were not a general circulation of the waters most actively carried on by means of *under-currents*, as well as *those of the surface*, we should find all the level shores overflowed.

It is well known that the general movement of the waters at the portals of the Atlantic is inclined towards it. Independent, however, of under-currents, the disarrangement of its level is prevented by counter-streams, which are a consequence of every great movement of the waters of the ocean, and which, with the under-currents, carry back an equal quantity to that drawn off from other parts by main streams, as well as distributing and spreading abroad the fluid, by which means the level of all oceans and seas are preserved alike. And this most admirable operation, although we may in our limited perceptions but imperfectly understand it, is as certain and perfect, notwithstanding all its various complicated, and to us in some cases inexplicable, movements, for the attainment of the ends designed, as that the blood circulates through the veins and arteries of the human body.

E. F. G.

ON THE DEFECTIVE STATE OF DISCIPLINE IN SHIPS OF THE MERCHANT SERVICE; *shewing the loss occasioned to the Owners thereby. By the Master of a British Merchant Ship.**

To the Editor of the Nautical Magazine.

SIR,—It is not a little extraordinary, that, considering the extent of our trust, in respect to the lives of others—and that next important consideration in this our state of human existence, their purses—that we should consist of a set of men, without either the power or inclination apparently, of combining in one voice of complaint the grievous disadvantages under which we are continually suffering from the conduct of those persons who are erroneously said to be “under our command.” We are trusted, I say, with an almost unlimited power over the safety of lives and property; and yet we are obliged to put up with insults from men, over whom, if we have not entire control, we are unable to answer one moment for the safety of these charges; and yet no one will take up this subject, and endeavour to obtain

* We have reprinted this from No. 44 of our last series, at the request of a correspondent.

some law to ensure a proper state of order on board British merchant ships; nor do the commanders, or masters, or captains, (all misplaced terms at present,) seem to do more than repine at their helpless state, without making one effort for their own relief.

If this matter were looked into, the good people on shore would be truly surprised how any "gentleman" could take charge of a ship, and submit every day to circumstances which no other person of any tolerable education would put up with on shore; indeed, the state of civilized society forbids it; but we are actually placed without the pale of such rules of society, and are unworthy, apparently, of that consideration enjoyed by others who live under the same happy government. We are, Mr. Editor, frequently, nay, continually placed in that helpless state which that of no other description of people could be compared with; a state that, to a man of proper feeling, renders the situation of a man in charge of a ship one of the most mortifying that can possibly be conceived. With the semblance of power, with the property and lives of others under his charge, the master of a British merchant-ship, when he would exert the authority he should possess, finds his arm paralyzed completely by any frivolous assertion of those he is supposed to command. Seamen are allowed to indulge in this opposition, and, being more cunning than formerly, are become well aware of the inefficacy of the law to hurt them, so that the government of a ship is now the mere shadow of a form.

In whatever may consist the value of the diffusion of education generally, it is clear that a British sailor is not made the better for it, and for which assertion I could give some very good reasons, were it necessary, here. I well remember what he was during the hottest of the French war, always an ungovernable animal; now he is worse, he has become a designing one. It is no part of my plan, however, at present, to claim the attention of any one, either for the seaman or the unfortunate being placed at the head of a gang of sailors on board a merchant-ship. I once thought that an attempt to benefit both might be considered worthy the attention of those who had influence enough effectually to take this subject in hand; and let me say, that here is a field for an independent member of parliament to build lasting reputation and honour upon, besides obtaining the gratitude of the commanders, officers, and seamen of his country, for the situation of all want amending; but it is the owners who should consider the subject *for their own interest*. They are little aware how considerable their loss is by the conduct of the seamen employed in their ships, and what loss occurs, more or less, upon every voyage undertaken by every British ship. If this consideration does not induce them to bring about an amendment of the state of this service, nothing will, and it must rest till matters get a little worse, and which "the march of intellect" will assuredly effect ere long; and, instead of the Spaniards, Portuguese, Creoles, &c. employed in the slave-trade, being the only ones nurtured by their human traffic into pirates, we shall have the commanders and passengers of a few British ships murdered, and the glorious days of the old Buccaneers and the spirited fellows cruising on "the Account" renewed. I do verily believe that the great body of British sailors, aye, a very great proportion indeed thereof, would just as soon join in such acts of lawlessness and bloodshed, as they

would go to dinner, if it were not for the fear of their necks ; and it only wants a few more "educated," aspiring, clever fellows amongst them, to place the delights of this kind of life properly before them, and to induce them to forget its risks, to have sufficient volunteers for anything that is bad and desperate.

I know this is an unpopular view of these fine fellows, "the British tars ;" but it is high time to prevent the world being further humbugged (saving the expression) by such nonsense. The real fact must not be disguised, that the life and habits of the common sailor render him the most unfeeling, unprincipled being on earth. How can it be otherwise? what is the life of a sailor—his ordinary routine? Whenever out of a ship, he is more or less in a state of beastly intoxication ; during this time he is in the society of the very lowest and worst description that can be found ; from the day of leaving his last ship, he has probably never been quite sober, till he joins another ; here he arrives, plundered to the last farthing, and, most probably, in debt the advance he gets in his new service ; diseased both in body and mind ; and here he mixes with others from the same sort of dens of iniquity : and this is the picture of his life. Just imagine, Mr. Editor, a man amongst them, "*partially educated*," one that has just learned enough to be able to estimate, when he comes to his senses on board ship, (for *he will have mixed in his messmates' sprees on shore*,) the true nature of his life ; and, if this is a man of little more than ordinary feeling, he soon becomes just in a fit state for being a proper tool in any one's hands for deeds of any desperate character, if not himself to originate them, and lead others. So much for education among sailors, which, however, it was not my intention to have meddled with. What is to be expected from such a routine as a sailor's life consists of? The only mode he has of revenging himself upon human kind (short of turning pirate) for the expulsion he feels is his doom—from all their sympathies, and the common instincts of our nature—is to act the brute, the unwarrantable brute, towards those who are placed over him on board ship, and which the company he has just left on shore has taken care to instruct him he can play off with impunity.

It will be said that there are laws formed for controlling seamen in the merchant service—no doubt—and very prettily they read ; they are like many other things that look very well upon paper, and are perfectly useless in practice ; they just serve the purpose of the numerous "sea lawyers" to be found in every port ; who, under the plea of serving the sailor, put money into their own pockets, in defiance of all justice and propriety, robbing the owners in the most barefaced manner. Perhaps the articles entered into with the seamen may be thought by their conditions to serve as something binding upon them ; who, however, is not aware, that when these articles are brought into a court of law, they are refused to be acknowledged as binding upon the sailor, except for his rate of wages, and for the voyage specified? all other conditions are, without scruple, overruled, because, forsooth, it is imposing upon "honest Jack," who cannot be supposed to be aware of what conditions he has been inveigled into! Thus, in fact, the law is nearly a dead letter in protecting the property of the owner, or enabling the master to maintain the least authority : this

every one knows, who has anything to do with the subject; and I will illustrate this by the detail of some few events which occurred on the voyage I have just completed.

Amongst the crew, was a man of the most ferocious and diabolical disposition that can possibly be conceived; we had no sooner got clear of the channel than his outrageous conduct was such as prevented the possibility of doing otherwise than to separate him from the rest of the crew. He was accordingly ordered on the poop; then, in the evening, he made a most alarming, and altogether unprovoked, attack upon the steward, who was getting water from the dripstone; he was consequently put in irons, and confined in a small cabin that happened to be unoccupied, and where he remained some time, till, falling in with a king's ship, the captain came on board us, to visit a naval officer of rank, who was my passenger, and he was persuaded to take the man; which, however, he could only do, *provided he volunteered*, and which his confinement induced him to do. Now, I will suppose that such an opportunity had not occurred to get quit of this man, what does the law permit us to do with him? Why, keep him on board till my return to England! and which event did not occur for fifteen months after. I assert that there is no consul, or magistrate, or court abroad, that would have relieved me from the necessity of keeping this man till my return; except, perhaps, by instituting an expensive and tedious process in a vice-admiralty court, which the operations and object of the voyage did not admit of; and, though the law would not of course have awarded this man wages, yet it would have inflicted no punishment whatever, except perhaps for assault on the steward: in respect to his breach of duty as a seaman, he had done nothing criminal! Suppose there had been half-a-dozen such men as this on board, a pretty enviable situation that of commander!

Subsequently twelve or thirteen men, influenced principally by one who thought himself peculiarly skilled in the "Law Marine," refused their duty; we were in a harbour where it was not possible to get a sailor; the ship was ready for sea, and they were called up to unmoor, which was refused. I really can hardly have patience to record this event, so incredible would it seem to an Englishman on shore, unacquainted with such events; nor can I recollect what their plea was, so utterly groundless I know it proved: they wanted some grog, or some unreasonable thing of that nature. Recourse was had to the magistrate, who could, as I well knew, grant me no relief; and it ended in his soliciting, *almost begging*, that the people would return to their duty. The effect of this conduct of the people was, to lose the opportunity which then presented of sailing; the wind changed, and I was in consequence detained a full month, with one hundred people to victual, and a large crew to pay; and the object of the voyage was also endangered by the detention, to say nothing of the serious inconvenience of such detention to a number of passengers, which in this case caused a delay in measures which materially affected the interests of a whole colony. The owners, by this affair, could not have directly suffered less than £300 actual loss! besides the detention of a valuable ship, and the ultimate probable consequences thereof. Now, what redress does the law afford for all this, or what punishment will it inflict for such cool, barefaced acts of mischief?

(for I can conscientiously declare the men had no excuse whatever for their conduct;) they might be made to forfeit their wages—good so far: many of them had little due to them, and for that little they did not care one farthing; for, had they got their discharge where they then were, they could have earned eight or ten shillings per day; and this I believe was their object. Now, these men having been persuaded by the magistrate to *resume their duties*, I believe that if a *proper practised* “sea lawyer” had their affairs in hand, that notwithstanding the serious loss I have stated above to have been directly caused by their altogether unjustifiable conduct, that he would recover their wages! and I should be told probably that the owners have their remedy, *in an action against each separately* for damages, in a court of law; any punishment being inflicted for such conduct is out of the question; there is nothing criminal whatever in it, according to the happy law under which they live.

Some short time after, five or six men again refused their duty. The ship was then lying in a situation which I consider about as dangerous a one as can well be; a day or two only was necessary to get out a few goods, and proceed on the voyage, and these men refused to load a craft which had come from the shore, because it was Sunday morning. Now, I do not, except in cases of necessity, ever require men to work on Sundays; but I am the sole judge of such necessity in the ship I command; and here it existed, in the most decided and unquestionable manner, as was ultimately proved; for I was barely able, two days after this Sunday, to get clear of the anchorage, when a gale came on, which, had it caught us there, it is my conscientious belief that it would have been worth fifty per cent. to have insured the safety of the ship through it. These men would not, however, load the boat. I had anticipated such an event, and left orders, should it occur, to have people from the shore at any expense, to expedite business, which, under the circumstances, was really of such a pressing nature. These men were off work two or three days, and I have charged them the hire of those employed in their stead; which, however, I am well persuaded that there are hundreds of lawyers in London that would advise “poor honest abused Jack” not to allow, and who would seize the ship by virtue of process in the Admiralty Court, and who would, twenty chances to one, succeed in making the owners pay the full wages, and saddle them with a considerable sum of costs into the bargain; indeed, such is the dread of this court on the part of owners, (and with great reason,) that there is not one in a hundred that will not compromise any claim rather than defend an action in it. Punishment is here again quite out of the question, though their conduct was next to the wilful destruction of property; they endangered it, as well as the lives of from forty to fifty people then on board the ship: and I think it will be readily admitted, that many offences on shore are punished with transportation which are not one-hundredth part so bad.

I will yet detail one more occurrence that took place during the same voyage, which shews a cool determined villany, and a contempt of all principle, that would almost indicate an absence of all idea of human obligation, and is quite corroborative of the character I have already given of these people. A store-room had been broken into,

and about three dozen of wine stolen; two of the people were observed to be intoxicated for a day or two together, which I apprehended was quite sufficient evidence of their being the thieves; indeed they did not deny it. Of course in this state, their usual allowance of spirits was denied them at noon, and the reason plainly stated, on which they refused to do any more duty; and I saw no more of them till arriving in port, at a British colony. This mode of dictating what is to be allowed to them, let their conduct be ever so bad, only shews what is to be expected from such people. I have turned them on shore; which act, though I knew to be illegal, I thought I might safely do, not judging that under the circumstances, these men would ever have the hardihood to shew themselves voluntarily before the civil power; but, bad as was my opinion of them, I had yet to learn the extent of their utter contempt of all decency. They applied at the police-office, to oblige me to take them on board again! and such is the law, that the magistrate was under the necessity of telling me I must do so, unless the men consented to leave the ship. All this I knew very well was perfectly regular, and I of course bowed to such decision, but said, that if they did come on board again, it was my determination to put them in irons, keep them on bread and water for the passage home, and try them in England for the robbery; in fact, I was obliged to bully them into the belief of what I certainly never should have thought of carrying into effect, their prosecution, (as any body will readily believe,) and they were frightened sufficiently at my threats to withdraw their application to the magistrate, and I saw no more of them. Their wages being about sufficient to pay for the robbery, as respects the two, though one of them had been such a notorious thief during the whole voyage, that it is impossible to estimate the extent of the loss he occasioned. When I stated to the magistrate the extreme hardship of being obliged to take on board such characters, who would not do duty, he, tacitly assenting to the remark, said that I might of course at once prosecute them for the robbery, but, that if I instituted such prosecution, I must remain to carry it on. This, to the commander of a very valuable ship, (just then calling for water,) with a valuable cargo, seventy people on board, and full of passengers, who would probably themselves have prosecuted me for the delay! But the magistrate was correct enough; it was no fault of his, he only stated what I knew very well was perfectly correct! How long, then, is the law to remain in such a state? My experience of such affairs would, unfortunately, enable me to go on detailing cases of this kind, that the Nautical Magazine would not, in one number, be able to contain; but here is sufficient to shew a *direct loss to the owners*, and if they will not interfere, and get the laws amended, which permit such acts with impunity, why, all I can say is, that they richly deserve to be so robbed. But does the loss remain with them? does not the public pay for it, after all?

The tenor of my remarks upon this honest creature, "Blue Jacket," may appear severe and unreasonable, and may by many be considered as impossible to be true. But, Mr. Editor, let such unbeliever embark in a merchant ship, continue by the ship a whole voyage, and, if he be not a convert, then I am content to be considered a fool. It may also be imagined that I am tyrannically disposed, an aristocrat, or, perhaps,

that this is written by one used to the discipline of the navy, &c. &c. No such thing; I have passed my life as much on shore as at sea, and that in society of the first respectability, and I am wholly free from any military notions tending to tyranny; but this I will also add of myself, I am not infected with the mischievous mania of the "march of intellect," the "rights of the lower orders," &c. &c.; but am one who, holding in reverence what he has learnt from the history of the ages that have gone before him, has seen enough of the present to know that all such stuff is cant, and that society cannot be held together, nor the institutions of any country upheld, except by due submission of all grades in that society, to their superiors. The scriptures enjoin us "to render honour to whom honour is due;" and I am of opinion that this precept is about as much required in the present day, to form the text of a good useful sermon, as any to be found in that great authority. The levelling, ridiculous notions which a parcel of "theorists" and "saints" form, when comfortably seated in their arm chairs, (exacting at the same time, probably, the most abject submission from their own domestics,) are too absurd, when looked at by those who can do so, in the application of these people's vagaries in practice. I will, however unpopular it may be, oppose these visionaries still further, and maintain that the poor and uneducated, those in fact whom the Almighty has evidently made to live by their labour, and the sweat of their brow, are bound in reason, and enjoined both by divine and human law, to be subservient to their superiors. Their superiors are those to whom Providence has assigned wealth, rank, and knowledge, in this world; and for the proper use of which they have sufficient responsibility ultimately, without the necessity of the working classes forming a court of inquiry on them; in fact, it is quite unnecessary to go further back into history, (though it all proves the truth of what I maintain,) than the beginning of the French revolution, to be satisfied that the "lower orders" are not fit to be trusted with power, but that, on the contrary, they are clearly designed to be under restraint, to control human passions, and observe proper order in society.

In *very* many situations, as well as on board ship, unconditional obedience is necessary for the due carrying on the affairs of the world: this has in all times been admitted to apply to military affairs, and a modification of military law, I maintain, (to come to the point,) is essential to the maintenance of that due authority which is necessary for conducting with safety a merchant ship. This may be unpopular; to qualify it, however, to those who may entertain such notion, I beg to inform them, that there exists *at present* a degree of *brutal tyranny* in the merchant service, to an extent that few people are aware of; an unjustifiable tyranny, which I wish to see done away with, and discipline, a mild, but proper, gentlemanly discipline, substituted in its stead. To those who can advocate any other system than "positive obedience," as being effective in the conducting of a ship at sea, I would put these questions: Who, but the master, is to be the best judge of what is proper to be done, *away from the possibility of appeal to other's judgment?* and even were it possible, by having at hand the means of advising with others, say the captain with his officers, for instance, are there not hundreds of situations in which there is no time for opinion? added to which, would it not be dangerous in

the extreme, and subversive of all authority, that the people should have any other idea than that "the captain must be right?" This notion may be scouted, as ridiculous and unreasonable; but I will maintain, that to conduct a ship with effect, through perils and difficulties, this feeling must exist in the people, or the end will not be attained. "Unconditional obedience" must be insisted upon; and in this consists nearly all the law I want.

In a number of the United Service Journal, (Jan. 1833,) I took some pains to go into detail on this subject; I have well considered it since, and remain convinced, that, what is here laid down as a practical regulation for the government of seamen in the merchant service, would be effectual; that it presents no obstacle to its being readily carried into effect; that it would accomplish every end that could be desired, would most materially improve the merchant service by inducing respectable men to enter into it; and would also *improve infinitely* the situation of the seamen themselves, by doing away with all motive for the exercise of that sort of tyranny which I have asserted is exercised over them at present, and set at rest the grand cause of complaint, nine times out of ten the origin of the disturbances on board ship, by insisting upon a scale of proper rations being supplied to them. The sum of all I have insisted upon, as law for the government of seamen in the merchant service, is, as I have said—"obedience:" a noncompliance with which should be a positive, unconditional forfeiture of wages to the owners, and imprisonment, when such is proved against them before a magistrate, consul or naval officer; all which authorities to be *obliged* to interfere, and take the man complained of away from the ship, and carry into execution this law; that the master be absolved from all further engagement with him; that an assault on the master or chief mate, or mutinous conduct, be punished by transportation for life; that, upon even personal abuse towards the master, or an assault upon any other officer, transportation for seven years; some minor punishment being inflicted for abuse of any superior whatever; and refusal to defend the ship, or use proper exertions in case of danger, to forfeit the man's life;—that all offences committed at sea should be immediately prosecuted, at the public expense; that evidence should be taken before a proper officer, so as not to detain any of the crew of the ship on shore; which last is a very material addition to any law which is to be rendered effective. This is the principal, the substance, of all that I think can be considered necessary. In respect to corporal punishment, it forms no part of what I would have established as law; but I have (and I repeat it here) expressly said, *that the right exists, and must, as an inherent one, neither requiring law for its support, nor to be by law abolished*, while to effect a complete change in the nature of man, by removing his natural depravity and the existence of human passions and infirmities, remains impossible. In cases of extreme necessity, *any measures whatever* are clearly to be taken, for the safety of all; and when such cases occur at sea as render the services of every man essential, such measures must be pursued as will produce the desired end, and that instantly; and I defy any one to say that coercion does not here become *indispensable*. Control the abuse of this exercise of authority as much as possible, but forbid it, and you legislate against

common sense, and the experience of ages, which has clearly shewn that the vulgar and uneducated are only to be controlled by the dread of punishment, in all its grades, even to the taking away of life. The infliction of punishment, however, in any of its degrees, should no doubt be restrained, and confined as much as possible to the hands of responsible persons; and therefore, *prima facie*, I would admit that exercise of power by the commander of a merchant vessel, in ordering corporal punishment, should be considered unjustifiable; and let him be prepared to show that actual necessity existed, wherever he has recourse to it, (and which will rarely happen.) Let every such case *rest upon its own merits*. To elucidate what I would have understood, and to show how ridiculous it would be to endeavour to tie up a man's arm by any human law, in cases of emergency involving life and death, in the exercise of this undoubted right, let one of the instances be taken which I have related as having occurred to me—that of the two men who broke open the store-room, and stole wine, and refused to do any duty because the indispensable and very natural measure was adopted of stopping their grog. Suppose, from the crew having been weakened by sickness, or from any other cause whatever, the services of these two men had become absolutely necessary for the safety of the ship, I will appeal to common sense, whether any law could be framed, except by insane legislators, that would condemn immediate recourse to the most effectual means, be they what they may, to bring these men to their duty; but as their services were not even missed at the time, punishment should be (as it was intended) postponed, till higher authority was appealed to. But, for God's sake, let some laws be framed that will enable these authorities to aid us, when we have patience to await their interference.

It would be well, before the attempts that are making to do away with corporal punishment in our military and naval service are carried any further, to look at the consequences in this light, and which shows, I think, *its abolition to be a thing absolutely impossible*. Let those (no doubt well meaning) philanthropists who are absurd enough to believe it can be effected, first reform human nature, and make us all reasonable creatures, and effectually do away with the necessity of punishment, and I will answer for it, that no set of persons will more readily coincide with them than those with whom the painful duty of inflicting it rests.

As this is a subject which sooner or later must attract the attention of our rulers, although I very likely may not live to see it, and as, whenever it does, I cannot help thinking that at least some of my suggestions and reasonings may be found not quite useless, I will merely add a remark upon the part I have thought should be adopted in respect to the interference of our naval officers, at sea and abroad, in supporting the due authority of the commander of a merchant ship. I am induced to do so, because I think it not unlikely that the officers may at first sight object to it. I have too great a respect for this service (to which I regret I do not belong) to propose anything that would in the most remote degree detract from the high honour and importance belonging to it; but, when I call upon them to do us service, I consider I am adding to their dignity, and unquestionably to their usefulness; I would in fact have them aid us as a "marine

police." I have, in my observations in the United Service Journal on this subject, said that they should, upon complaint made to them, take out of the ship any man who refuses his duty, and keep him in confinement till they can deliver him over to some other authority. There is surely nothing in this objectionable. We should then look upon them, when we encountered them at sea, or abroad, as our most powerful friends and supporters; the seamen would learn to respect the sight of a pendant, the presence of which would effectually check their misconduct; and they would learn beforehand to honour a service which ultimately they may be called into. At present, what is a king's ship to a merchant vessel? If a naval captain is called upon to render any assistance, he does not know how to act; his hands are tied; he cannot take a man out of the ship, even at the most urgent request of the master, unless the man volunteers; no, not even should he want hands himself; he cannot punish a man belonging to our service; (he has enough to do now to answer for the punishments inflicted upon his own crew;) and, in short, men-of-war, in these "piping times of peace," are of no earthly use to the merchant service, and we have no sort of intercourse with them, and look upon their arrival and departure, where we lay, as though they did not belong to the same nation as ourselves.

As respects the affairs I have detailed, as occurring on a recent voyage, (and which are as nothing to hundreds which I have previously witnessed, in point of brutality and violence,) I can truly say that there was no cause whatever for them; there was neither want of proper and abundant provision, nor irregularity in its issues; the duty was never severe, (far from it;) and I can bear the most unqualified testimony in favour of the behaviour of the officers of the ship towards the people; they having evinced patience and forbearance, which to many on shore would indeed be surprising, could they witness what has to be put up with in these situations.

My own direct interference with them was out of the question at the commencement of these affairs; therefore I need not claim any merit of this kind, which indeed I am free to confess I do not in any eminent degree possess: nor can I endure the encroachments of the vulgar and illiterate; a feeling which, however, may be consistent with the exercise of the utmost degree of consideration for their proper rights, privileges and comforts.

A MASTER OF A BRITISH MERCHANT SHIP.

Now, Mr. Editor, having in the foregoing pointed out the state of things with respect to the discipline of British merchant ships in general, I shall further request the indulgence of your inserting the accompanying correspondence which has appeared in some numbers of the *Shipping Gazette* of January last; and first, Mr. Goodwyn's letter, to which I prefix the remarks made thereon by the editor of the *Shipping Gazette*.

"The following extract of a letter from Mr. William Goodwyn, chief officer of the ship *Florentia*, for which we are indebted to the *Taunton Courier*, will tend to strengthen the remarks we offered, in favour of an amendment of the 5th and 6th of William IV. c. 19, on the provisions of which ship-owners and merchants are solely dependent for the

preservation of the property which may be placed in circumstances of fearful hazard, by the mutinous conduct of some part of the ship's crew. We need add nothing to the arguments which the mere recital of the case itself furnishes :—

“Table Bay, 27th September, 1836.

“On the 24th instant, the crew, without any previous disagreement, refused to weigh anchor; eight of them are now under sentence, and we are obliged, if we can, to get other seamen in their place. A more unjustifiable meeting, if it may be so called, never took place on board a merchant ship, and I hope it will shew what the mistaken lenity of our legislature towards seamen in the late new act of parliament subjects a ship to: here is a ship and cargo of nearly £80,000 value, lying in a dangerous roadstead without her crew to protect her, if driven from her anchors; and we have been (since the crew were taken on shore by the police) obliged to veer to eighty fathoms' cable, and strike topgallant yards, with very strong south-east winds. On Monday last they were brought up before the magistrate, and eight refused before him to go on board the ship, and return to their duty. The ringleader was sentenced to a month's imprisonment; * the other seven, to three weeks' hard labour. So here we are, unable to proceed on the voyage, the ship and valuable cargo endangered, and the ship lying also at a great expense; and these men get a trifling punishment, having but little wages due. This is the protection given by our legislature to merchant-ships, the commanders, and officers. On their defence, they said they could not go to sea in the ship, unless Captain Deloitte acted as they insisted he should, which was to land and discharge two of their number, and to procure two others in their place. By dictating to him, and refusing to obey his orders to weigh anchor, they acted as if they had command of the ship, and directly in contradiction of the first clause of the ship's articles, which declares they shall “conduct themselves in an orderly, faithful, honest, careful, and sober manner, to be at all times diligent in their duties and stations, and obedient to all lawful commands.” They said they had no complaint to make against the ship, captain, or officers; they would go round the world with the captain, or chief officer: one said he could sail with the chief officer till he was grey-headed, but would not give up their point, that two of their number should be discharged; thus dictating a point against which there is a clause in the Act 5 and 6 William IV., which prevents a master from discharging a man, (unless under very peculiar circumstances, and then with the permission of the authorities,) under a severe penalty.”

This is an instance of that glaring defect of the law which I have been endeavouring to shew. It is one among many others which we do not hear of; and we should perhaps never have heard of this, but for the great value of the ship that was endangered by the mutinous conduct of the men. What recompense, let me ask, would the law have afforded to the owners, had this ship been lost? What good to them would have been the imprisonment, for any length of time, of the refractory seamen who had occasioned it? None whatever. Their £80,000 would have been irrecoverable.

* The longest imprisonment a magistrate is enabled now to give for this offence.

But here is another instance ; and I am really glad that some of my brother masters of the merchant service are beginning to speak out. The foregoing happened at the Cape of Good Hope, but this it appears took place in the Downs. It is described in the following letter, addressed to Nathaniel Gould, Esq. :—

“ Portsmouth, 22d January, 1837.

“ Sir,—In addressing this letter, I hope I have not made use of too much freedom, or in any way intruded on your time, for that which I am going to state I consider to be the duty of every ship-master whose case might happen to be similar to mine, so that ship-owners and merchants may be enabled to see, that as the present *law*, as regards seamen, now stands, there is neither protection given to the master of a ship, nor to the merchants' property ; I therefore, sir, take the liberty of stating my case in as straightforward a manner as I possibly can, knowing that you are highly interested in the mercantile and shipping affairs of the country, and that you would use your influence towards the benefit of these interests.

“ I joined the barque *Thetis* at Gravesend, on the 14th of January, bound to Sierra Leone ; on the Monday we came to an anchor in the Downs, the pilot left the ship, and everything went on very well on board until the following day at noon, when seven of the crew, with a ringleader at their head, came aft on the quarter-deck, and made very unreasonable demands for provisions, and other stores. They endeavoured to prevail on me to allow them everything according to their own wishes. Having sailed for many years before the mast, and as master, these wishes I knew to be unreasonable, and against all rules of discipline, and refused to grant them. I attempted to reason with the men, but to no purpose, and eight in number plainly told me that they were determined to proceed no further in the ship. I gave orders for them to heave the anchor up, which orders had no effect ; they informed me that *they had read the act of parliament*, and that all the punishment which could be inflicted on them was thirty days in the house of correction, but that *at Deal* there was *no house of correction* ; therefore I could in no way punish them.

“ You will be aware that I was awkwardly situated, the ship being at this unsettled season of the year in an open roadstead, with a cargo of great value on board, *and no law* at this enlightened period of 1837 to protect me. I went on shore, and applied to Messrs. Goodwin, Carling, and Co., agents for Lloyd's ; they informed me that they had a similar case some time ago, and all that I could do was to go to the expense of taking out warrants against the men, and then employ constables to go on board to take them out of the ship. Had I adopted that course, as the clause in the act now stands, it would have been of no good to me, neither would it have been any security to the ship and cargo, for the law says that, to prosecute, *the master and mate must be on shore!* and then, I ask, what will become of the ship in a place like the Downs ? *It is a most absurd law*, and it seems equally absurd and singular, that ship-owners and merchants do not endeavour to get that clause altered. But it is my opinion, that no more than four ship-owners out of ten have given themselves the trouble to read the late act ; whereas, if they had carefully read it, they would plainly

see that *masters had not got the command of their ships*, but that it entirely rested with the crew to make what rules they please on board of ships.

“In the *Shipping Gazette* of Thursday evening, January 19th, you will see a similar occurrence, which took place at the Cape of Good Hope ; and there will, unless there is an alteration made in the law, be a good many more cases of the same nature take place. I again returned to my crew, because, to prosecute them would be attended with expense, and also detention to the ship ; therefore, when I came on board, and found them in the same mind as they were before, I told them that if they were determined not to proceed further, there was a boat alongside ; into which the eight men got, and went ashore, leaving their clothes on board. The following morning, I thought perhaps their being on Deal beach all night would have made them more reasonable, therefore I went on shore, and took them to Messrs. Goodwin, Curling, and Co.’s office, and endeavoured to arrange with them, so that they might go on board again ; but it was to no purpose, for as soon as one thing was acceded to, they demanded others ; therefore, finding they would come to no terms, and the wind being north-east, I did not stay to prosecute, but employed two boatmen, weighed anchor, and took the ship to Portsmouth.

“The ship and cargo have run a great risk, and she has also lost her passage out of the channel. If it would not be too much trouble, I hope you will represent this case to the committee at Lloyd’s, and the Ship-owners’ Society, so that it might be generally known among persons who are concerned with ships and cargoes.

“I remain, Sir, your most humble and obedient servant,
“W. P. SMITH, Master of the barque *Thetis*.”

The motives which appear to have induced the master of the *Thetis*, Mr. Smith, to address this letter to Mr. Gould, are just those which should actuate all masters in similar situations ; and Mr. Gould has given a tolerable proof that he has not “used too much freedom” in addressing his letter to him, by its appearance in the *Shipping Gazette*. I hope that there are many who will follow the example here given, both by master and owner, presuming that Mr. Gould is in the situation of the latter, as it regards the *Thetis*. The master’s letter, however, appears to have been forwarded by Mr. Gould to the chairman of the General Ship-owners’ Society, and the following reply of Mr. George Frederick Young, who fills that station, has also been published in the *Gazette* :—

“TO NATHANIEL GOULD, ESQ.

“Office of the General Ship-owners’ Society,
72, Cornhill, January 26, 1837.

“My Dear Sir,—Mr. Oviatt has placed in my hands the letter you have addressed to him, together with that of Mr. Smith, master of the *Thetis*, on the subject of the alleged mutinous conduct of eight of the crew of that ship, which has appeared in the *Shipping Gazette*, to both which I have given my best attention.

“I am fully aware of the difficulties in which masters of ships are frequently placed, and the losses to which ship-owners are exposed,

from the want of effectual means for causing the prompt observance of discipline, and think that in some respects the act for the regulation of merchant seamen might be beneficially altered; but having given my most anxious and assiduous attention to every clause of that act during its progress through the legislature, and having also had considerable personal experience in such matters, I must frankly confess, that I find myself unable to concur entirely in the sentiments expressed either by you or Captain Smith, on the defective state of the law, as exemplified in the occurrences stated to have taken place on board the *Thetis*.

“In the case of the *Thetis*, Captain Smith appears evidently to have misunderstood the actual state of the law, which is the more remarkable, as he seems to have given much attention to it. He asserts that the law says, that, in order “to prosecution, the master *and* mate must be on shore,” and thence infers the impossibility of his obtaining practical redress, from the obvious imprudence of both master and mate quitting the ship in an open roadstead like the Downs. Now, if you will turn to the 6th section of the act 5 and 6 Wm. IV., c. 19, (the act for regulation of merchant seamen,) you will find “that in case a seaman shall, after having signed an agreement, refuse to proceed to sea, any justice of the peace near the place where the ship shall happen to be, is required, upon complaint, on oath, by the master, mate, or owner, to cause such seaman to be apprehended and brought before him; and in case such seaman shall not give a reason to the satisfaction of such justice for his refusal, he shall be committed,” &c. Nothing, I confess, can appear to be more just than the provision. Captain Smith alleges that the refractory seamen “made unreasonable demands for provisions and other stores,” the nature of which demands, however, he has not explained. He may be perfectly right in his allegation, but surely he ought not to be the sole judge; and the law, I think, has acted wisely, as well as justly, in referring such a difference to the impartial decision of a justice of the peace, who is invested with power either to compel obedience, or to punish contumacy. It is clear that Captain Smith *could* have taken this course, for he was actually on shore, and the seamen voluntarily accompanied him to his agents, and, there seems no reason to doubt, would equally readily have accompanied him to a magistrate, who would at once have pronounced whether they were right or wrong. I must say therefore that I think Captain Smith has failed in establishing his charge either against the law itself, or the supineness of ship-owners in submitting to its continuance; and, that the case is not one that it would be expedient to cite in proof of the necessity for those amendments which I have already admitted I think necessary.

“I have personally addressed you as chairman of the committee of the General Ship-owners’ Society, as some time must elapse before your letter could be brought under the notice of the committee, and I considered you might wish to receive an early reply to your communication. If, on reconsideration, you should still deem it desirable that the question should undergo this consideration, it will be equally my duty and pleasure to submit it to them at the next meeting; and I beg you will believe, that while I have felt it right candidly to

express my individual sentiments, I shall be perfectly prepared to change the opinion I have formed on any proof that the view I have taken of the matter is an erroneous one, being always,

“My dear Sir, yours very truly,
“GEORGE FREDERICK YOUNG.”

Now, sir, if these are the sentiments of Mr. Young, it is obvious that there is nothing to be expected from the chairman of the Ship-owners' Society! in his place in parliament as member for Tynemouth; for, notwithstanding he admits that “in some respects the act for the regulation of merchant seamen might be beneficially altered,” in cases of this kind he considers it just and perfect. With these sentiments, I repeat, nothing may be expected from him regarding it, for he has already given “his assiduous attention to every clause of that act during its progress through the legislature;” and from “considerable personal experience in such matters,” he thinks the law is a wise and a just one.

Now, sir, I would ask Mr. Young, whether, in the course of his “considerable experience,” he ever found himself in situations similar to those which I have related, or those of the *Florentia* and *Thetis*. In my case, I have stated broadly the facts as they occurred, and the injury sustained by the owners, in consequence of the mutinous conduct of the men. In the case of the *Florentia*, their refractory conduct might have lost the vessel; as it was, it delayed her; and it was the same in the *Thetis*: and the law provides for this, as a recompense to the owners, that the men shall be mulcted in their pay, which at most would amount to some twenty or thirty pounds in the course of the year. Has Mr. Young ever found himself in similar situations? If so, he would have enjoyed the benefit of the remedy supplied by the law to his heart's content.

But, sir, Mr. Young appears to dwell on the erroneous conception of Captain Smith, that it was necessary for the master and mate to be on shore to prosecute. Granting that only one is necessary, the delay is the same. The magistrate is not expected to go on board to visit refractory seamen; they, and their prosecutor, who must be the master or mate, must therefore go on shore, and the delay is still the same; and if the owner is to go from London to Deal, it would perhaps be still more. Mr. Young says that Captain Smith has not explained the nature of the demands made by the seamen; but it unfortunately happens for Mr. Young, that those demands were for “provisions and other stores.” Surely there is no very great degree of wit required, to know whether demands in these articles are just or unjust; and Captain Smith's experience, both before the mast, and in command, would constitute him as good a judge as Mr. Young on these matters, with all his “considerable experience.” And, because Captain Smith went to Lloyd's agent at Deal, instead of a magistrate, which would have obliged him to go to the expense of taking out warrants, and employing constables, not to mention a hundred other expenses besides, in Mr. Young's opinion, “he has failed in establishing his charge against the law itself, or the supineness of ship-owners in submitting to its continuance.” Why, sir, the very fact of his choosing Lloyd's agents as the umpires, and avoiding the delay and

expenses of the law, which would be useless when obtained, is in itself a proof of the inefficiency of that law. What was to be got by it? literally nothing that would compensate either the owners for the loss they must sustain by the delay, or the master for being obliged to put up with the mutinous behaviour of the men. I said that Jack—yes, honest Jack himself—was always an ungovernable animal, but had now become a designing one—cunning enough to do as much mischief as he can, and here is a proof of it. The mutineers of the *Thetis* it appears had been studying the law, studying the act of parliament, and had discovered that “all the punishment which could be inflicted on them was thirty days in the house of correction.” But mark their cunning, sir: they threw this in the teeth of Captain Smith—“At Deal there is no house of correction, therefore you can’t punish us.” Jack, it appears, when he sets to work, can do more than Mr. Young can; he can find out a defect in the law, and who shall say he is wrong: a good *sea lawyer* would prove him right.

However, sir, it was evidently a design among these worthies in the *Thetis* to play the part of mutineers; they watched their opportunity, and they must indeed have been experienced hands at their work, when they find out one day that there is no house of correction at Deal, and choose the next, the day of sailing, to execute their design. What cared they for the decision of Lloyd’s agents, or what would such characters have cared about being mulcted in pay, (which they might have received beforehand,) or being confined even for thirty days? That over, they come out whitewashed, and may go and ship themselves in another craft, and do the same thing again, as such characters might be expected to do; and so ship after ship might sail as the *Thetis* did, run all risks, and lose their passage out of the channel. So much for the glorious state of the law as regards the discipline in merchant ships.

We have complied with the wishes of our correspondent, “The Master of a British Merchant Ship,” in reprinting his former letter, with those which he has forwarded; and, considering the masterly way in which he treats the subject, we apprehend that those of our readers who wish to see the evils complained of remedied, will not object to the course which we have adopted. Having been also favoured by Mr. Gould with a copy of Mr. Young’s letter, it enables us to vouch for its correctness, as it appears in our page. That the law regarding the discipline of our merchant shipping is very defective, we have ample proof before us; and until some more severe penalty than the forfeiture of wages, and a month’s imprisonment, can be inflicted on the offenders, it must and will remain so. This is no doubt all at present which the merchant seaman has to offer in extenuation of his ill behaviour, and therefore until he has something more to forfeit, things will remain as they are. But it is not so with the man-of-war’s man: he has not only over him the disgrace of corporal punishment, but the more lasting, and perhaps more effectual one in many cases, of forfeiting all claims to the pensions afforded by Greenwich Hospital, whether in the asylum or out of it, for long services and good conduct. The merchant seaman has nothing of this kind to bind him to good behaviour. He has nothing to look forward to at the

end of a long servitude, and, although he may fancy himself his own master, and as good as his captain, he has plenty of hard work, and full often an unseaworthy ship to sail in, and the moment she becomes wrecked, if he has the good fortune to escape with his life, his wages cease, and he is left to shift for himself. We say therefore, that, until the merchant seaman has something more than he now has to forfeit, the law affecting discipline in the merchant service is likely to remain as it is. And until a *merchant seaman's asylum* is established, dispensing its benefits to the worn-out seamen of the merchant service in the same manner as Greenwich Hospital does to the seamen of the navy, the character of the discipline in the merchant service will remain the same. How such an asylum may be best established and supported, we leave to ship-owners and Mr. Buckingham to decide; we merely throw out the suggestion; but we consider that all attempts to establish it with the *voluntary* assistance of Jack himself, as was attempted last year, will prove abortive and absurd. Those of last year will prove them to be abortive; and, while their employers have the payment of their wages, it is absurd to *ask* them to refund any part of them for such a purpose. After all, the subject, if it is to be settled at all, must be settled by the legislature. It is one which concerns the public, for the injury done to the owner, underwriter, &c., raises the market prices, as all loss of property, of whatever kind, is in fact a public loss.

STEAM BOAT EXPERIMENTS.—REDUCTION OF POWER.

To the Editor of the Nautical Magazine.

London, 16th Jan. 1837.

SIR,—I cannot allow the opportunity to pass which has occurred by the insertion in your last number of some experiments by professor Barlow, without offering a few remarks.

The fact is, Sir, that in this enlightened age of invention, but *quasi* improvement, we steamers of the old school are daily having presented to our view, some very old friend, dished up *à la fricasee* under a new name, and trumpeted forth in the proper channels as an invention that would produce a new era in steam affairs.

These remarks do not so fully apply to the experiments before us, but the writer of this could mention several, was it not foreign to his intention to excite controversy on such subjects for the present.

Having, as all connected with the scientific world must, the highest respect for the talents and acquirements of the professor, and a knowledge of the great advantage we have all derived from his researches, it is perhaps barely necessary to remark that what I consider the failures in the experiments are not attributable to him, as they hinge on a point requiring great practical experience, and which it cannot be expected, from his various and important avocations, he could be so well acquainted with as those who have devoted their undivided attention thereto.

This also, to the fullest extent, applies to the gentleman present at the experiments, who from the novelty of his situation and his consequent very limited experience, could not be expected to explain to the

professor that the trouble they were that day incurring was needless, that it would merely be a continuation of experiments long grown grey, and the solution of a problem long since decided to the satisfaction of most intelligent engineers. But that the second named gentleman present at the experiments who is something more accustomed to these things, should not have known the now simple fact that, "*the velocity is as the cubes of the powers,*" is indeed strange.

But before I shew such to be nearly the case from the experiments under consideration, it will be as well to point out the fallacy of the whole proceeding.

1. The powers employed are assumed.

2. Those assumptions are wrong, and it has generally been found that neither Massey's nor any other log has given a correct data when compared with a measured mile on land. The former boomed 10 feet off the paddle case, in unbroken water differed essentially, but as these experiments are comparative, this objection is not of much consequence, although a measured distance would have been much more satisfactory.

1. The powers are assumed, and until these gentlemen ascertain and make use of the means by which the *actual* power is discerned, they will continue to grope in the dark. In fact a steam engineer without such means is in the dark and likely to remain so.

2. The pressures are stated at 18 lbs. and 15½ lbs. respectively. The absurdity of which is so great, that I conclude some mistake to have occurred. The atmosphere at 14½ lbs. or a perfect vacuum: whereas by engine barometer it is stated at 27 lbs. to 27½ lbs. a pressure of 13½ and 13½ lbs. which is common-place. The steam in boiler at 3½ lbs. and 1 lb. on the safety-valve. All this is wrong: the pressure on the piston and that in the boiler is far different, arising from the expansion of the valves, and the passage of the steam through steam pipes and contracted openings of cylinder branches, it is again farther reduced by the AVERAGE PRESSURE being required for the power only.

By my memoranda I find that the Lightning's engines were made by Messrs. Maudslays. Two cylinders 40½ inches diameter, 4 feet stroke, which, at 25 per minute, is = 55 hours \times 2 = 110 horse power. Knowing their principle of construction, "*great expansion,*" I question (and I make the assertion from considerable experience) if there was a greater *average pressure* on the piston with the 3½ lbs. steam, than vacuum, 13 lbs. steam 1.5 lbs. = 14.5 lbs. which, with a proper deduction for friction, gives a very low result as to the power actually exerted.

With the "one lb." steam the power or pressure would not be in direct proportion to the weight on safety valves, (as 3½ to 1 for instance,) because the engine being reduced in speed one stroke, and the steam of less density, it had more time to form in cylinder and the vacuum is improved by better condensation. These facts are too well known to most engineers to require any elucidation.

Thus then by making this allowance, and which the proper means would have shewn necessary, the power stated by the professor of the "one," the steam would be slightly increased, and then we shall have the velocity nearly as the cubes of the powers.

Taking the data before us, the difference is only .462 decimal, thus,—

18lbs. pressure at 24 strokes = 273 horse power.

15½ lbs. " 23 " = 229 "

And as 273 : 8.08 = 229 : 7.618 miles, or a difference of 0.462 which agrees with experiments on the same subject, too numerous to mention.

The foregoing remarks are made in the best spirit, and with a sincere desire to promote science, but with an equal wish to see all *pretensions to invention* reduced to their proper level.

The undersigned strongly recommends the professor, on his next trip, to press into his service some scientific friend acquainted with the *practical* means of ascertaining the correct power exerted, and then we shall have a result worthy of perusal.

I am, Sir, your obliged servant,

VULCAN.

EFFECTS OF MAGNETISM ON THE RATES OF CHRONOMETERS.

Royal Naval Asylum, Greenwich, 10th July, 1836.

DEAR SIR,—In a very important communication of Messrs. Arnold and Dent's, given in the Nautical Magazine, No. 15, it is stated as one of the results of their experiments, that the rate of a chronometer, No. 274, was sensibly affected by terrestrial magnetism. This effect they conceive was apparent from a change in its daily rate, in consequence of its being moved in azimuth; that is, it gained 2''·9 daily when the figures XII. on the dial-plate were placed towards the magnetic south, and 1''·5 daily when they were towards the north; making a difference of no less than 1''·4 in the daily rate.

If such an effect should be found to be produced generally, or even occasionally, in chronometers, arising from this cause, of a tangible and appreciable amount, it becomes a subject of the highest moment to every one interested in the use and construction of these valuable instruments, upon the correct performance of which our progress in geographical information, as well as the preservation of life, so much depend; and I consider such a fact one of the most important contributions ever made to nautical astronomy.

Upon the first consideration of this experiment, I was induced to consider it probable that such an effect might have been produced by the balance of the chronometer having acquired some polarity from the experiments which had been previously made with it.

To satisfy myself upon this point, I availed myself of an opportunity that occurred to me of repeating this experiment with two chronometers of the usual construction, the balance-springs of which, together with the inner-rims and arms of the balances, being of steel.

They were placed for this purpose upon a strong table, in a room at the Royal Naval Asylum at Greenwich, upon square spaces marked out for them—the sides of which were in the directions of magnetic north, south, east, and west. The arms of the balances, when at rest, were very nearly in the direction of figures XII. and VI. on the dial-plates.

The rates of the chronometers were repeatedly determined with the

figures XII. alternately placed towards the north and south, and also with the same figures towards the east and west. This was at first effected by observing their respective errors from mean time by means of the ball, which is let fall daily at the Royal Observatory; and as the ball could be seen from the room in which the chronometers were kept, it was done without moving them from their places. By dividing the differences of the errors by the number of days they were in each position, the quotients were taken as the mean rates of the chronometers due to those positions.

I have already forwarded to you some of the experiments made with these chronometers, and at the same time expressed my conviction that the results afforded strong evidence of the effect of terrestrial magnetism upon them. One of the chronometers has since been taken to sea; but as I have had opportunity of continuing the experiments with the other one, I have recapitulated the former ones, and sent you the whole of them made with this chronometer, which form together such an uniform series of results, as to render, I conceive, any further experiments with it unnecessary.

Table I. contains the mean-rates during the time the chronometer was in each position. The letters N. and S. attached to the observations, imply that the figures XII. on the dial-plate were placed towards the magnetic north and south: in the same way in Table II. the letters E. and W. indicate that the same figures were towards the east and west.

In Table I. it will be seen that there was a difference of $0''\cdot4$ in the daily rate of this chronometer, according as the figures XII. were towards the north or south, the arm of the balance being in the magnetic meridian; which, though the reverse of what happened in the experiments of Messrs. Arnold and Dent, yet completely corroborates their statement with regard to the deranging effects of terrestrial magnetism upon chronometers.

Similar experiments to the foregoing were made with the same chronometer, when the steel arm of the balance was at right-angles to the magnetic meridian, or, with figures XII. towards the east and west: they were not so numerous as in the other positions, but sufficient to shew that the magnetism developed in this chronometer was not altogether of a permanent character. These results are given in Table II., from which it will be seen, that the chronometer in December and January lost more when the figures XII. were towards the magnetic east, than when they were towards the west; but in April and May following the reverse happened.

The differences are certainly very small. Every means were therefore employed to ensure accuracy in detecting them. On the 15th of March, a daily comparison at the same hour of the day was began, between the chronometer and a mean solar *clock* fitted up in the same room, for the purpose of experiments with this, as well as other chronometers.

The rates of the clock were now determined, by observing with it several transits of the same fixed stars, the same day on which the chronometers were moved in azimuth. These rates generally nearly coincided with those obtained by means of the ball at the Royal Observatory.

I have given the daily rates of the chronometer in Table III. as often as it was compared with the clock, that you may be able to form a judgment of the going of the chronometer, and therefore of the value of the results obtained with it.

I hope, in my next communication to you, to be able to give the results of the trials I am now making with other chronometers. As far as I have yet proceeded with them, several indicate effects from change of position in azimuth to a very serious amount.

I am, &c.

G. FISHER.

TABLE I.

MEAN RATES OF CHRONOMETER. [Arm of Balance in Meridian.]

Date.	Rate of No. 767.	Therm.	Position.	REMARKS.	
1836. Jan. 20 } 24 } 24 } 31 }	" — 0.56 — 1.00 — 0.64	° 45.5 45 44	N. S. N.	<p>EXPERIMENT 1ST.</p> <p>Means.</p> <p>Position, N. Rate — 0.68 " S. " — 1.10</p> <p>Difference <u>+ 0.42</u></p>	
Feb. 31 } 7 } 7 } 11 }	— 0.64 — 1.12 — 1.02	44 47.5 47	N. S. N.		
16 } 16 } 22 }	— 1.48 — 0.75	43 42	S. N.		
26 } March 2 } 2 } 10 }	— 0.80 — 0.45	42.5 47	S. N.		
15 } 22 }	— 0.64	52	S.		<p>EXPERIMENT 2ND.</p> <p>Means.</p> <p>Position, N. Rate — 0.34 " S. " — 0.69</p> <p>Difference <u>+ 0.35</u></p>
22 } 29 }	— 0.46	50	N.		
April 29 } 5 }	— 0.74	47.5	S.		
5 } 12 }	— 0.23	49	N.		
May 25 } June 1 }	— 0.02	58	S.			EXPERIMENT 3RD. Means. Position, N. .... Rate + 0.45 " S. .... " + 0.10 Difference .... + 0.35
1 } 8 }	+ 0.46	61	N.		
8 } 22 }	+ 0.22	65	S.		
July 22 } 2 }	+ 0.44	67.5	N.		

TABLE II.

MEAN RATES OF CHRONOMETER, No. 2. [Arm of Balance at right angles to Meridian.]

DATE.	Rate of 767.	Therm.	Position.	REMARKS.
1835. Decem. 3	— 0 ^{''} .78	55	W.	EXPERIMENT 1ST. Means. Position, W. Rate — 0 ^{''} .90 " E. " — 1 ^{''} .18 Difference + 0 ^{''} .28
11				
14	— 1 ^{''} .58	45	E.	
14				
14	— 1 ^{''} .50	44	W.	
19				
19	— 2 ^{''} .03	42	E.	
28				
28	— 1 ^{''} .25	40	W.	
1836. Jan. 5				
5	— 1 ^{''} .50	42	E.	
11				
EXPERIMENT 2ND.				
April 12	— 0 ^{''} .27	53	E.	Means. Position, W. Rate — 0 ^{''} .30 " E. " — 0 ^{''} .08 Difference — 0 ^{''} .22
19				
19	— 0 ^{''} .30	53	W.	
26				
26	+ 0 ^{''} .11	51	E.	
May 3				
3	— 0 ^{''} .29	54	W.	
10				

TABLE III.—DAILY RATE OF CHRONOMETER.

1835.	MARCH.		APRIL.		MAY.		JUNE.	
	Rate.	Ther.	Rate.	Ther.	Rate.	Ther.	Rate.	Ther.
1	s	o	s	o	s	o	s	o
2			— 0 ^{''} .7 S.	47	+ 1 ^{''} .7 E.	50 ₁	+ 1 ^{''} .0 N.	61
3			0 ^{''} .9	47	1 ^{''} .9	50	0 ^{''} .8	61
4			0 ^{''} .6	47	0 ^{''} .4 W.	52	0 ^{''} .5	61
5			0 ^{''} .6	47	0 ^{''} .9	52	0 ^{''} .6	62
6			0 ^{''} .4 N.	48	0 ^{''} .0	53	0 ^{''} .4	60
7			0 ^{''} .3	48	— 0 ^{''} .4	55	0 ^{''} .5	60
8			+ 0 ^{''} .1	48	0 ^{''} .0	55	0 ^{''} .2	61
9			— 0 ^{''} .3	49	+ 0 ^{''} .7	55	0 ^{''} .7 S.	62
10			0 ^{''} .5	49	0 ^{''} .2	55	0 ^{''} .4	62
11			0 ^{''} .4	51			0 ^{''} .4	63
12			0 ^{''} .0	51			0 ^{''} .3	63
13			0 ^{''} .0 E.	52			0 ^{''} .3	62
14			0 ^{''} .1	52			0 ^{''} .1	64
15			0 ^{''} .2	53			0 ^{''} .1	65
16	0 ^{''} .0 S.	49	0 ^{''} .6	52			— 0 ^{''} .2	70
17	— 0 ^{''} .4	49	0 ^{''} .7	53			0 ^{''} .1	67
18	+ 0 ^{''} .2	50	+ 0 ^{''} .1	53			0 ^{''} .0	69
19	— 0 ^{''} .9	53	— 0 ^{''} .3	53			0 ^{''} .0	67
20	0 ^{''} .9	54	0 ^{''} .3 W.	53			0 ^{''} .3	68
21	1 ^{''} .1	55	+ 0 ^{''} .2	53			0 ^{''} .3	67
22	1 ^{''} .0	55	— 0 ^{''} .3	53			+ 0 ^{''} .2	66
23	0 ^{''} .5 N.	54	0 ^{''} .3	54			0 ^{''} .1 N.	66
24	0 ^{''} .3	51	0 ^{''} .3	53			0 ^{''} .7	66
25	1 ^{''} .1	51	0 ^{''} .4	53			0 ^{''} .5	64
26	0 ^{''} .4	49	0 ^{''} .6	53	— 0 ^{''} .4 S.	58	0 ^{''} .5	64
27	0 ^{''} .5	48	+ 0 ^{''} .1 E.	53	0 ^{''} .3	58	0 ^{''} .1	65
28	0 ^{''} .4	48	0 ^{''} .3	53	0 ^{''} .4	58		
29	0 ^{''} .0	48	0 ^{''} .3	42	0 ^{''} .1	58		
30	0 ^{''} .5 S.	48	0 ^{''} .8	49	+ 0 ^{''} .4	58		
31	0 ^{''} .7	49	0 ^{''} .8	50	0 ^{''} .4	58		
	0 ^{''} .9	47			0 ^{''} .3	61		

With the foregoing important communication from Mr. Fisher, proving that a change of rate may be produced in any chronometer of the usual construction, by merely changing its position with respect to the magnetic meridian, we now lay before our readers another contribution from Mr. Northcote, late master of H.M. ship *Jupiter*, on the equally important subject of the influence of a ship's magnetism on the rates of chronometers. This gentleman observed, that during his recent voyage in that ship to and from the East Indies, under the command of Captain the Hon. F. W. Grey, that alterations in the ship's course produced corresponding variations in the daily comparisons of the chronometers. We have inserted his communication as it was received; at the same time we may suggest, that the effect therein stated to have been produced, would probably have been better exhibited (without any determination of the absolute rates) by a table, containing a column of differences between the respective daily comparisons of the chronometers, together with the corresponding positions of the ship's head.

"The chronometers Nos. 555, by Murray, 553, by Arnold, and 419, were removed from the lower to the main deck, in the early part of the voyage, and placed in a line parallel to the keel, on three tiers of horse-hair, near the ship's larboard side, and perfectly clear of all bulkheads, so that no concussion of the ship could affect them. The twelve and six hour mark on the dial-plate of each were at right-angles to the line of the keel, the twelve hour being nearest to the ship's side; and No. 555 was the aftermost, No. 553 the middle, and No. 419 the foremost chronometer.

"From the 3d of October to the 16th November, 1835, the direction of the ship's head was about S.S.W., (true,) during which period No. 555 changed its rate from 0^h 36 losing to 1^h 28 losing, and No. 553 had from 0^h 21 gaining to 1^h 25 losing. No. 419, a private watch, had varied but very little. During this period, the watches would stand with their XII. on the dial-plate towards the E.S.E.

"From the 20th November to the 19th of December, when we arrived at the Cape of Good Hope, the mean direction of the ship's head was E. by S. During this time No. 555 had changed from 0^h 13 losing, to 1^h 0 losing, and No. 553 had changed its losing rate of 1^h 25 for a gaining rate of 1^h 50, and No. 419 had doubled its rate of 4^h 25, making it 8^h 75. This change of rates appears to have taken place immediately after leaving Rio Janeiro.

"From the 19th December to the 13th January, the ship's head was in an easterly direction; from thence to the 29th February it was about N.N.E., but at intervals in all directions. On our arrival at Calcutta No. 555 had a losing rate of 3^h 0 per diem, No. 553 a gaining rate of 2^h 0, and No. 419 losing 8^h 50: the change here, by the daily comparisons, appears to have taken place about the 16th January, and shortly after we hauled to the northward.

"From the 7th March, 1836, to the 1st June, at Colombo, No. 555 had increased from 3^h 0 to 4^h 0 losing, No. 553 remained steady at 2^h 0, No. 419 had, instead of 8^h 50, a rate of 10^h 0 losing. During this interval the ship's head had been in all directions, but chiefly to the southward.

"From the 1st June to 30th July, on our passage from Ceylon round the Cape of Good Hope to St. Helena, No. 555 had changed from 3^h 0

to 1^h50 losing, No. 553, instead of 2^h0 gaining, had a rate of 5^h50 gaining, and No. 419 remained steady at 10^h50. The change here in the rates of 555 and 553 took place at the same time, as in no instance in their daily comparison had they varied more than a second and a half.

S. G. NORTHCOTE, Late Master of H. M. S. Jupiter.

ON THE EXPEDIENCY OF A SETTLEMENT ON THE WESTERN SHORE OF DAVIS STRAITS. *By Captain James Ross, R.N.*

Westbourne Green, Harrow Road, 18th Feb. 1837.

DEAR SIR,—In compliance with your wish, I lose no time in giving you my opinions as to the expediency of a settlement on the western shore of Davis Straits, which might not only serve as a depôt for oil, but as a port of refuge for whale-ships. I feel quite assured that much good would result from such an establishment, if judiciously planned, and prudently conducted; but I think that Ponds Bay, or Coutts Inlet, both of which situations have been suggested, would be found much too far to the northward, because it not unfrequently happens in unfavourable seasons, that no passage to the west land can be effected to the northward of Cape Walsingham, which forms the narrowest part of the straits, while to the southward of that cape the passage, at every period of the season, is much less difficult. There is no doubt that a good harbour, and an eligible situation for a settlement, might be easily selected on the deeply-indented northern shore of Cumberland Strait, or in about 64° N., or between that and Cape Walsingham.

There are many other reasons why a southerly position would be desirable, of which I may mention—1st. The natives to the southward are far more numerous than to the north; the *merchantable* products would be therefore proportionably greater, and at the same time the benefit to the inhabitants, arising from the introduction of European clothing, and other comforts of civilized life, more extended.

2nd. The rise and fall of tide to the south is sufficiently great for facilitating the repair of any of the whale-ships that might sustain injury amongst the ice; but to the northward it is too inconsiderable for that purpose.

3rd. The greater facility of communication with the settlements already established upon the coast of Labrador and Hudsons Bay, even when the approach of ships might be prevented by the annual accumulation of ice, similar to that which has occurred there the last two summers.

4th. Perhaps the most important reason for placing the first and principal settlement to the southward, is the greater probability of its being useful to whale-ships which may be beset and frozen in the *pack* in unusually severe autumns. If the settlement were at Ponds Bay or Coutts Inlet, it would probably occasion the abandonment of many ships that might otherwise be extricated; for, as it generally happens that they are at first beset in about the latitude of those places, the crew would immediately leave their vessel, and make for the settlement, well knowing that if they are once driven to the *southward* of

it, any attempt to reach it in the vessel would be useless ; whereas, if it were well to the southward of Cape Walsingham, the people would continue their exertions to get the ship out until after they had drifted with the pack to the southward of that cape, where, from the shores on both sides greatly receding, the ice in general becomes more open, and the greatest chance of escape occurs. If, however, the ice should still remain too closely packed for the vessel to get to the east-water, and that she begins then to drift still more rapidly to the southward, the danger of shipwreck becomes so great from the number of icebergs, from the strength of the tides, from the heavy pressure at times of the rapidly-moving pack, and from the heavy sea which keeps the whole mass in motion for many miles within its margin, that the increasing chances of destruction will fully justify the crew in their abandoning their ship, and just at that period when she has reached nearest to the spot where the settlement ought to be placed. Thus, then, they would be encouraged in their efforts to save their vessel, by the assurance of a place of refuge, in case their endeavours should eventually fail, and they would be prevented from abandoning her till all other means of escape had vanished.

The importance of settlements on the west side of Davis Straits, in a *commercial point of view*, has not escaped the notice of the Danes in the colonies of Greenland ; for, while I was at Holsteinberg during my late voyage in the Cove, a gentleman of the name of Kahl, who had been many years a governor of one of the Danish colonies, arrived there in a sloop, for the express purpose of visiting the west-land, with the view of forming a small settlement upon some part of it, and wholly for mercantile purpose.

It is not easy to conceive the vast quantities of eider down, furs of land and sea animals, oil, and ivory, that are annually collected by, and purchased for a mere trifle, from the Esquimaux of Greenland ; and there can be no doubt that these articles might be obtained in much larger quantities on the west side of the straits, than at Greenland, owing to its proximity to the continent of America ; indeed many furs of considerable value might be obtained there, which are but rarely found in Greenland.

There are several other reasons which could be advanced for the establishment of a settlement between Cumberland Strait and Cape Walsingham, in preference to any other part of the western coast of Davis Straits, and much more might be said to prove, that, if well conducted, it would very shortly not only repay its first expense, but even produce immediate profit, besides being, in all probability, the means of saving many valuable lives. Reserving these considerations, however, for another occasion, I would here express my belief, that it is essential to the complete success of this project, that Government should commence it ; for the landing a number of sailors, without a sufficient authority to control them, would assuredly be productive of much mischief, and inevitably lead to serious misunderstandings with the native inhabitants.

If a vessel of two or three hundred tons were to sail from England by the 1st of July next, she would get to the straits at the best period of the year for crossing to the west-land, just to the southward of Cape Walsingham. As soon as a suitable and convenient situation for the

purpose was found, the party, consisting in all of ten or twelve persons, together with the stores and provisions, might be landed, and the ship return to England; but I think it would be more advisable for her to remain there during the first winter, so that the disposition of the natives might be ascertained, and their friendship secured. Early the following season she would return to England, bringing home the fine oil, and other merchandize which had been procured, and which would at once repay much of the expense. As the whale-ships at the fall of the year generally fish in about the latitude of Cape Walsingham, some of them would every year communicate with the settlement; and such as had been unsuccessful in the fishery might be employed for the above purpose, or, if necessary, a vessel might be sent out from time to time for that express purpose.

I will not enter further into detail just now; but, if either the Government, or a company of merchants, should undertake to form such an establishment, there are many points connected with the subject which ought to be very fully discussed. For my own part, I consider it to be a subject of quite sufficient importance to the country to engage the consideration of the Government; for the whale fishery, in these regions, on an average of twenty years, has yielded annually between seven and eight hundred thousand pounds, and has given employment to between six and seven thousand of our best and most enterprising seamen, although it has greatly declined of late years, owing to the increasing difficulties and dangers which attend its prosecution. Unless, therefore, some measure calculated to give new encouragement to the pursuit, and to afford protection to the lives and property of those engaged in it, as well as to prevent the recurrence of the dreadful misery and suffering which have now repeatedly taken place, be speedily adopted, this best nursery for our seamen, and this important source of national wealth, will inevitably be lost to this country.

I am, &c.

JAMES ROSS.

To Captain F. Beaufort, R. N. Hydrographer to the Admiralty.

ON THE HURRICANES OF THE NORTH ATLANTIC.

[Concluded from page 19.]

To effect an equilibrium generally, or perhaps it would be more properly expressed, to prevent a general disarrangement, is *one* of the provinces of the Trade-winds; and, that hurricanes are *partial*, affords us, in the most intelligible language of nature, the assurance that an equipoise under all the various complicated changes is most admirably preserved by the working of the system of interchange of airs from and to the torrid zone and northern and southern regions.

That that potent principle in nature, electricity, that all-powerful and pervading subtle fluid, which reaches even to the very heart of man, is an agent in the "working up" of these mighty tempests, one would be almost a sceptic in philosophy to doubt.

With respect to the slow progression, or the retardation of the storm, we have a very recent instance. On the 12th of August, 1835,

a severe hurricane was experienced at Antigua, Nevis, and Saint Christopher, and many plantations.*

In its progress westward it came in contact with St. Thomas. This island is 140 miles to the westward of Nevis, and the storm was not felt there until the day after it had been experienced to the eastward.

As there are some confused ideas respecting the velocity of a hurricane, we will endeavour to set the matter right.

According to the scale of Mr. Rouse, a *hurricane* that tears up trees, "travels" at a velocity of 100 miles an hour; at which rate, if the storm felt at Nevis on the 12th, had moved directly onward, (with our preconceived notions,) we should expect it to have reached St. Thomas in an hour and twenty-five minutes. The storm is stated to have reached (or commenced at) Antigua at 5, P. M., of the 12th, and the height of it had passed before midnight, consequently it could not have reached St. Thomas until *about* or *after* the *seventh* hour of its duration at Antigua, distant 190 miles. Even, therefore, if we admit that the storm progressed the whole seven hours, the rate of its velocity would amount to $27\frac{1}{2}$ miles in the hour; which is equal only to that of a "brisk gale."

The plain matter of fact seems to be that, in these instances, there is no appreciating the velocity of the wind, which, although it may equal the amount given in the table, from 80 to 100 miles an hour in its *course round* the circle, cannot be taken into consideration when speaking of the hurricane's progressive velocity, as that in comparison with the other is very slow, and cannot be estimated with correctness for any given time, as it seems to be dependent principally, if not solely, upon a cause, the influence of which we have no means of determining with precision; although perhaps, from careful observations an approximation may be arrived at. See point 12. (p. 14.)

Our attention is naturally excited when contemplating this singular property of the hurricane, a feature that arrests our attention at once, and claims from us a careful examination. What cause or causes can operate in delaying the progress of so mighty an agent?

The most feasible reason we can give, after very careful reflection, is, that *rarefaction* is the acting cause, and that in a double capacity: it first attracts, and then detains. The highly attenuated atmosphere over any island (where calms and light airs have been prevalent) will have the effect of arresting the progress of the storm as it passes over it; and until the *disarrangement* be corrected by the supply of fresh air brought by this *gigantic bubble*, and a perfect equilibrium be restored, the progression will be feeble, but when that grand process is fully completed, away goes the "*bubble*," to the next attractive point.

It occasionally happens that some islands, not remotely situated from each other, suffer in an unequal degree; whilst others do not experience the slightest effect from the raging element which is pouring out its wrath upon the neighbouring lands.

From these facts may we not infer, 1st, that the *verge* of the storm may cover one island, and the *centre* the other; the utmost violence of the wind being near the *latter*, and the least near the *former*. 2dly,

* It appears also that Barbados was *subsequently* visited by a hurricane, whilst Grenada was exempt; we have no further account of its progress, and conclude that it was merely a *local* disruption.

that the disarrangement of the atmosphere may vary in intensity over the different islands; the causes of which would require local knowledge and close observation to determine:—the geological and sylvan features of a country must be enlisted in the investigation of such cause or causes. 3dly, that the lateral movements pursued by the storm in its progress westward, may occasion its striking one island and passing clear of another, even at a short distance, *provided* that in either case the lands are in such a state as to be *attractive* or *non-attractive*, a contingency (if the word be admitted) that may vary so perfectly as to reverse the “*negative*” and “*positive*” poles of action of the phenomenon in different years. To make this intelligible, we state our belief to be, that the oscillatory movement of the storm is governed by the amount of rarefied air that may happen to be on either side of its path, sufficiently near to draw it aside. From causes which are constantly operating, it is possible for one island to have its atmosphere greatly disarranged one year, and not so the next.

In the hurricane experienced by H.M.S. *Dædalus*, the Lark sloop of war (and a very fine ship she was, with a worthy and excellent captain) foundered. The Hebe frigate and Moselle war-brig encountered the *brush*; and the Musette brig lost some of her spars prior to the 3d of August, (the day of the hurricane at Porto Rico,) as she was supplied by the first ship in the Mona Passage at 2, P.M., on the 2d, with a spar: she had probably come from the eastward.

The storm began with the *Dædalus* at 8h. 30m. P.M., of Wednesday, the 2d of August, 1809, and at midnight following, the hurricane was raging with violence. It appears that the Lark was at anchor at Palanqua bay to the westward of the city of San Domingo on the 2d, and the storm is stated to have reached her at about 5, A.M., of the 3d, when she cut her cable and scudded* under her fore-sail and fore-storm *stay-sail* (she was hemmed in a *bight* and obliged to haul up to clear the land) to get an offing. At nine following, in the *height* of the hurricane, in attempting to lay-to, the fore sheet gave way, the ship broached-to, upset, and finally went down stern-foremost!†

This account is given by an officer of the Hebe, which ship spoke the Moselle, who had picked up three men belonging to the unfortunate Lark.

Thus it appears that, from the time the storm first struck the *Dædalus* until it reached the Lark, (24 miles to the S.W. of the city of St. Domingo,) then about 170 miles to the westward of the former ship's position, eight hours and a half elapsed, which gives for the progressive velocity of the hurricane nearly twenty miles an hour.

With the *Dædalus*, at five in the morning of the 3d, it was at its maximum height; wind E. by S., (her nearest approach to the centre,)

* Name of the wind not given, but there is no doubt of its being N.E. or E.N.E.

† We heard at the time of the Lark's catastrophe that she was lying in Ocoa bay, when the prognostics of the coming storm induced Captain Nicholas to slip, and get clear of the land; likewise that the ship was lying to very well until the foresheet gave way when the *crisis* arrived, (no canvas intersecting the wind can stand against its tremendous downward pressure,) and that only *two* men were saved: one, a black, got on board the Moselle *whilst she was scudding, without aid, by the bobstays!* (this is a fact!) the other a fore-castle man, named Evans; the former an excellent swimmer, the latter unable to swim, yet, strange to say, he did not sink. The self-possession of these men is truly a matter for wonder.

when the bowsprit, foremast, main, and mizen topmast went over the side, and the mainmast, which was badly sprung and tottering, was only saved by prompt measures. With the Lark, the *crisis* (fatal to her) was at nine the same day; hence four hours elapsed; the distance of the two ships apart being much the same as at the commencement; so that the progressive movement of the tempest seems to have acquired increased speed as it drew near the great island of Hayti, the rate being at this time thirty-seven miles and a half* an hour; the mean of the greatest and least velocity being twenty-eight miles and three-quarters per hour.

We may, I presume to think, infer from these data, imperfect as they are, and admitting our former premise (see point 12) to be just; that the *attracting* medium (the rarefied air) the nearest to any given space of disruption, and the line of the progression, is greater than the one in contrast, (in drawing comparisons,) when the *progression* of the storm is *greatest*; and that such is not to be taken as an evidence of the violence of the hurricane being severe.

The Hebe felt the storm first, at half-past one on the morning of the 3d; and at half past eight, following, the maximum of downward pressure was experienced, and at noon it moderated. Her position (she must have been close under the northern verge) is not given, but as she was cruising off the city of St. Domingo and was in sight of it on the 6th, she could not have been far from that port at the onset, to the W.N.W. of Dædalus.

The wind with Dædalus veered *apparently* from left to right. At noon, on the 2d, it was N.E. fresh. At eight, P.M., it was east, blowing a strong gale; at midnight, E. by S., hurricane in full career; the gusts were tremendous, heavy rain and a very high sea, their curling tops whitened into foam; ship lying to on larboard tack. Between five and five, 30, A.M., 3d, was the *crisis*; ship dismasted; tremendously heavy squalls, with torrents of rain. At seven vivid lightning in the S.E. quarter, wind veered round to S.E.b.S. Noon, ship scudding under a mainsail, the only one available, wind still S.E. by S. course W. by N.; we had by this time got into the first quadrant, and by going on with the storm kept the wind in the same quarter until midnight, when it lessened (the posterior verge having past) and backed round to east. At ten, A.M., 4th, wind N.E. moderate. All this is in accordance with Mr. Redfield's theory of the circulation from right to left.

13. The number of hurricanes experienced in 1818 is remarkable; the antecedent dates of those happening to the westward, would seem to give colour to the opinion of retrogradation; but we are inclined to believe that some of those storms were mere local disruptions. In these instances, if a retrograde movement could be proved, it would be not a little perplexing. (See the list of hurricanes, year 1818.)

The circumstance of the lightning during hurricanes being generally, if not invariably, at least on the ocean, unattended with thunder, is remarkable, but not singular; such a phenomenon occurring frequently in the evening at a certain season of the year, in various parts of the

* Allowing the Dædalus to have been twenty miles easterly of the centre, at the crisis, such would reduce the distance to be allowed for in the interval to one hundred and fifty miles.

world. It is thus philosophically accounted for : moisture assists the passage of the electric fluid through the air, (in hurricanes the atmosphere appears surcharged with moisture,) and rain accompanying the wind, facilitates the escape of the fluid, and prevents explosion. (The instances of sheet-lightning, (which has no effect on the electrometer,) common enough in England, without thunder happen, to the extent of my observations in the West Indies, Mediterranean, and England, invariably in dry clear weather.

It is not unworthy of notice that in the different parts of the world, near to and within the tropics, where hurricanes prevail, volcanic lands are present. Without pointing to any connection between this physical feature and the phenomenon, the coincidence will strike the reader as deserving of inquiry. The shocks of earthquakes which have been felt previously to, during the time of, and after hurricanes, in the islands generally, would lead us to conjecture that, be the causes what they may, the earth is disturbed as well as the air, and which at least may not unreasonably be considered as auxiliary, either in augmenting or prolonging the commotion. How far the electric state of the atmosphere may be concerned in the production of earthquake, we must leave to others more philosophical than ourselves to determine.

Since the "great storm" of the year 1780, hurricanes in the West Indies appear to have become more frequent, but this may be erroneous, and the greater number of later years, may appear to exceed those which happened earlier, because a better account has been kept of their time of occurrence. The disproportion of the number would lead to this conclusion, from 1712 to 1780, or a period of sixty-eight years, only six storms are registered as having happened ; whereas from 1780 to this time, a period of fifty-five years, no less than twenty-eight are recorded.

We may note here, too, that the parallels in the *variables*, and the Caribbean sea, where hurricanes are common, lie under meridians where cold penetrates furthest to the south between the 50th and 80th degrees. Within the tropics, after the hurricane has passed any given spot, the wind will be resumed from the eastern quarter ; but in the *variable* latitudes, it appears by the Centaur's case, that, although the wind may have been easterly before the commencement of the storm, it continues in the S. W. quarter after it has passed.

We think it extremely likely, whenever comparison shall be made hereafter, it will be found that the hurricane moves faster over the open ocean, than when going over the land ; (for then it will be detained to fulfil its purpose) and quickest when approaching near to land which is greatly heated,

Vessels that enter the hurricane at the anterior verge (the western) will be liable to be thrown into the centre, where the greatest danger is to be apprehended. Those which enter the posterior verge, can only do so from a lateral point ; that is, from the southward or from the northward, and will not long be detained under its influence.

The worst point to enter is necessarily at the W. N. W. verge, which, as being the advanced point on the circle, will lead a vessel lying to, directly towards the centre, (her drift to the southward being slow, in comparison with the storm's advance, she would scarcely clear the centre.) The wind under that verge will be N. N. E., and to avoid the

dilemma of being swamped, she ought to scud to the southward, as then she would get into the third quadrant, and pass to the southward of the centre; the crisis probably happening when she got the wind from the west, due.

The inquietude of birds and other animals has been remarked before a storm and dwelt upon in such a way as would seem to imply forethought or instinctive reason. The heat and drought are generally very great before the arrival of the mighty renovator; calms prevail, and everything seems almost deprived of moisture or of motion, hence the appalling stillness at night, and the hollow murmur of the surf. It is not to be wondered at that all animated nature should suffer under such an unusual state of things, and show symptoms of uneasiness. The effect upon the constitution of birds and quadrupeds would be that of restlessness, unconnected, we conceive, with any instinctive apprehension of approaching danger, as some persons have thought. In conclusion, Mr. Editor, I may just remark that a great deal of useful information may be gathered from military officers, those of the navy, who may happen to be present, intelligent residents, and masters of ships, respecting these storms. We throw out this hint to them, and trust they will respond to it.

STORMY JACK.

[We have reserved a statement of some of the principal West Indian hurricanes of the last century, with some general precepts, for the guidance of seamen, relating to such dangers, for our next number.—Ed. N.M.]

REEF IN THE CHAGOS ARCHIPELAGO.—*Indian Ocean.*

To the Editor of the Nautical Magazine.

SIR,—On a voyage from London to Bombay, in the barque *Blenheim*, at 9, A.M., on the 5th May, 1836, from the masthead I discovered breakers on our lee-bow, bearing N.E. b. N. and hauled to the wind immediately. At noon, the reef, with tremendous breakers on it, bore N.N.W. distant four miles. The wind falling with a current setting to the N.W., lowered the cutter and pulled to the reef, and found it bear from the coral reef from Solomon Islands, N.E. b. E. six leagues. I found it to extend north and south about five or six miles, and one mile east and west. On the edge of the reef our first soundings were five fathoms coral rock; a ship's length further, two fathoms; and immediately after, four feet. I observed several rocks with about three feet water over them, and four large rocks above water, bearing west, three miles to leeward of this most dangerous coral reef. We pulled to leeward of the reef through a part which had smooth water, our first soundings were three fathoms coral, next cast 9 feet, and 6, which continued across the reef; to leeward of the reef we found deep water, the rocks bearing from the cutter N.W.b.W., the latitude, by good observation, 7° 11' S., and with Baker's and two good watches, made the longitude from Greenwich 72° 36' 30' east. On the previous day, at noon, having Solomon's group bearing N.E. b. E., a small island bearing E. $\frac{1}{2}$ S., with breakers at the S.E. end. The island is laid down in latitude 7° 15' S. longitude 72° 37' E. I found it to be in 5° 45' S. and long. 71° 26' east.

I am, Sir, &c.

JAMES TEMPLE BROWN,
Commander of the barque *Blenheim*.

Jan. 30th, 1837.

[The foregoing account of the commander of the *Blenheim* will serve as a caution to navigators passing through the Chagos Archipelago. The reef in question does not appear on Blair's chart, published by the Admiralty, and there may yet be other dangers undiscovered among them, nor is the island seen on the previous day, laid down.—Ed. N. M.]

THE BRENTON ROCK.—*Newfoundland.*

THE following account of a dangerous rock on the eastern coast of Newfoundland, between Funck island and the Wadham islands has just been transmitted to the Admiralty. The rock does not appear in Lieut. Bullock's chart, although breakers are stated by him to have been seen in its neighbourhood. As the position assigned to it by Mr. Stark is by no means exact, it must be considered as yet uncertain, and navigators must therefore be the more cautious how they use the channel between the islands above mentioned. The position of it, by Mr. Stark's bearings, is about latitude 49° 41' N. and longitude 53° 15' W.

“ Harbour Brae, Newfoundland, 2d. Jan. 1837.

“ Whilst employed on the duties of the last autumnal circuit on board the brig *Saint John*, Captain Evan Percy, we met a heavy gale of wind off the “Funks” on our way to Twillingate, and the gale being accompanied with a very heavy equinoctial sea exhibited to us broken water between the “Funks and Wadhams” where the like danger had previously remained hidden and unknown.

“ On Wednesday, the 28th September last, the Hon. Judge Edward Brabazon Brenton, Nicholas Slabb, Esq., Deputy sheriff, Captain Evan Percy and myself, distinctly and clearly saw heavy breakers upon a rock bearing by compass W. $\frac{1}{4}$ S. a little southerly from the Funk islands distant about seven miles. This bearing was taken in a fine clear evening, and it was the opinion of all on board that the rock, though not appearing above the water, would take up any vessel, and not finding the same noticed in Mr. Bullock's last charts I have felt it a duty I owe to the public to make this communication in order that the same may be brought under the hydrographers' notice.

“ I have the honour, &c.

“ JOHN STARK, Chief Clerk, Magistrate, &c.”

[It has been named the Brenton rock, after the Hon. Judge Brenton at the request of Mr. Stark.]

CLARK BANK.—TORRES STRAITS.—*Dries at low-water.*

THE following is an extract of a letter from Captain Clark, of the brig *Adelaide* of Dundee, dated Sourabaya, August 18, 1836:—

“ I arrived here on the 15th current, after a voyage of five weeks, from Sydney. I came through Torres Straits, one of the most dangerous passages in the world. From the north coast of New Holland to the south coast of New Guinea, a coral reef extends the whole way, and is called Bass Reefs, through which there are only

a few small openings, one of which you have to seek. That through which I passed was not much wider than the dock gates at Dundee; after which I had to steer a winding course among innumerable rocks, banks, and coral reefs, for upwards of 120 miles, being obliged each night to come to an anchor. We got safe through, and proceeded along the coast of New Holland, when we grounded on a sand bank at about 7 o'clock, P.M. The sea was so smooth at the time, that, although I was then walking on deck, I was not sensible of the ship having touched the ground; and it was not until the man at the helm remarked, "surely we are aground," and I looked over the ship and saw the bank, that I was made aware of the fact. Shortly afterwards, we discovered that the water was leaving us, and at day-light we found ourselves high and dry on the top of a sand bank, about four miles in circumference, and no land in sight. I then went down upon the bank to examine whether the bottom of the vessel had received any damage, and was glad to find the bank so soft, that not even a single sheet of copper was ruffled. We got out our anchors, and shortly afterwards the tide made, and we were enabled to heave her off without the slightest damage (having previously thrown out about thirty tons of ballast to lighten her,) and continued her voyage: the only difficulty which we experienced in getting off being the softness of the mud, which prevented the anchors from holding. The bank is not laid down in any of my charts, and I believe was till now unknown. It lies in latitude $10^{\circ} 20'$ south, and longitude $141^{\circ} 27'$ west."

The foregoing appeared in the *Dundee Chronicle* of Jan. 21st, and evidently refers to a bank which is laid down in Captain Flinder's chart of the gulf of Carpentaria* in east longitude, and not "west," as stated, which would place it near the Marquesas Islands in the Pacific. The bank on the chart agrees precisely in latitude, and differs only $7'$ in longitude from that alluded to by Captain Clark, an approximation sufficient to identify it. It appears, however, in the chart without a name, and we have therefore assigned to it that of the commander of the *Adelaide*.

ELIJAH GALLOWAY'S PATENT PADDLES.

THERE are few departments of mechanical science which have been so much the subject of investigation or experiment as the paddle wheels of steam vessels. The object of these experiments has been principally to obviate the loss of power which is entailed by the action of the common float board of a paddle wheel in propelling. To make the cause of such loss evident it may be briefly stated, that the most efficient application of force to give motion or overcome resistance is in the line of such motion. Hence as a steam vessel moves horizontally and in a direct line, whilst the paddle in propelling moves in a curve, there must be a considerable loss of propelling effect by the obliquity of the moving force at every point of its passage through the water, except when in a vertical position, or in other words, at the lowest point of the revolution of the wheel. It is not here necessary to show the exact amount of power lost in this way: suffice it to say, that it is capable of clear demonstration, and that its amount can be accurately ascertained. In smooth water, however, and in a well con-

* Published by the Admiralty.

structed steamer, the immersed segment is small, and the loss of power is consequently not so great as might at first be imagined.

But when a paddle wheel is considerably immersed, either by cargo, or (more commonly or unavoidably) by the vessel's rolling in tempestuous weather, the loss of power by oblique action is immense : so much so that when one half of the wheel is immersed (and this is an ordinary occurrence in a sea-way) a fraction only of the power of the engines remains for propelling the vessel : by far the greater effort of the machinery being expended in forcing the paddles in succession flatwise into the water, and thus straining and grinding the whole fabric of ship and machinery, not only wasting the power of the engines, but consuming it in the unpleasant and destructive vibration which is well known to every one who has been in a steamer in a gale of wind.

To obviate evils of such magnitude, it is needless to say that innumerable attempts have been made. The paddles have been constructed of almost every conceivable form, or placed apparently in every possible position. By some the wheels have been totally immersed, by others they have been enclosed in air-tight cases, and thus worked through the vessel's bottom. Others again have modified their propellers into the diversified forms of a screw, a smoke-jack, a duck's foot, a scoop, a squirt, an Indian paddle, the wing of a bird, and a fish's fin. Experiments of this class, however, have tended to confirm the opinion, deduced from scientific analysis, that the wheel, as now fixed to the vessel's side is nearer to the maximum of efficient action than any of the modifications here alluded to. They have all, in consequence, been abandoned, either from their obvious inefficiency or from their inherent frailty and complexity of construction.

These results, combined with an increasing knowledge derived from experience of the laws involved in the operation of propulsion, have latterly induced most projectors to resolve on returning the wheels in their present position at the vessel's side, and to direct their efforts so to modify them as to reduce or remove the defects we have named.

The majority of arrangements which have been attempted with a view to the attainment of this object, have been on the principle of what are called "moveable paddles," that is to say, paddles which have a two-fold motion, one round the axis or shaft of the wheel, possessed by all in common ; and the other on spindles or axes of their own by which their position can be changed from the direct radial one of the common float to any other ; such change being effected by a variety of machinery, generally of a complicated nature, consisting of cranks, eccentrics, cams, grooves and rollers, wheel-work, &c., &c.

The earliest and (to the inaccurate observer) the most feasible project of this class, consisted of a modification of an eccentric by which each paddle was made to retain a vertical position during the whole revolution of the wheel : but this was found to act in retardation of the vessel's progress when the wheel was immersed a little beyond its ordinary dip. Of the inventions which come under the head "moveable paddles," "*Morgan's Wheel*" has been the most celebrated. These wheels were originally patented by the inventor of the paddle-wheel now under notice : they have since undergone several improvements in their mechanical proportions, and in the arrangements of their several

parts, and have certainly been proved to possess many decided advantages over the common paddle. These paddles are regulated in their motion on their respective axes by a fixed crank or eccentric, round which a number of bars revolve connected with a guiding stem. They are thus made to enter and leave the water at an angle more favourable to propulsion than can be obtained by the common fixed flat board: to effect this they are so arranged as to enter the water when their upper and lower edge touch an imaginary cycloidal curve, generated by a point in the wheel, whose velocity corresponds with that of the vessel through the water. They thus produce a feathering action, entering and quitting the water edgewise, and causing very little power by oblique action.

These advantages, however, have been obtained by extensive apparatus which is subject to considerable wear and tear, and is not so entirely under the control and supervision of the engineer as so essential a part of the machinery ought to be: and without wishing to detract from the merits of what has been proved to be an invention of undoubted value, it may be fairly stated, that the cost of the construction of these paddles, and the necessity of constant attention and repair have hitherto almost wholly prevented their adoption in merchant steamers.

By the invention at present under notice, and of which we have given an engraving, it has been proved that the inefficiency arising from oblique action is almost entirely avoided, and the advantages of moveable paddles are obtained whilst every part is as firmly fixed as the common flat boards. The whole is therefore as simple in construction and easy of repair as the ordinary paddle-wheel. Without instituting a comparison between their effect and that of "Morgan's wheel," which we have no means of doing, there can be no doubt but that their very superior performance over the common paddles, as well as their extreme simplicity, must ensure their ultimate general adoption. We have before us the certificates of their results, in vessels of various tonnage and power, which leave no doubt of their excellence; but before laying these before our readers we shall, by reference to the engraving, explain the principle of their construction.

Reference to the Engraving.

Each paddle consists of a series of iron bars or plates, their faces radiating from the axis. They are so arranged relatively as to touch the cycloidal curve, *c, d*. Hence each series of bars constituting one paddle, enter the water (when in action) at the same point of its surface, and the loss of power by oblique action at the entrance of the paddle, is reduced in the proportion that the area of the lowest bar bears to the sum of their surfaces; there would be in this instance, therefore, only one-fifth of the concussion and inefficient resistance which is caused by a common float board. As the paddles progress through the water and approach the point of deepest immersion, they gradually expose their whole surfaces, which were previously behind each other, in their path through the water. When in the vertical position their resistance is at its maximum, and this is found in practice to be greater than that of the common paddle, owing probably to the effort being exerted upon fluid less disturbed and broken by the pad-

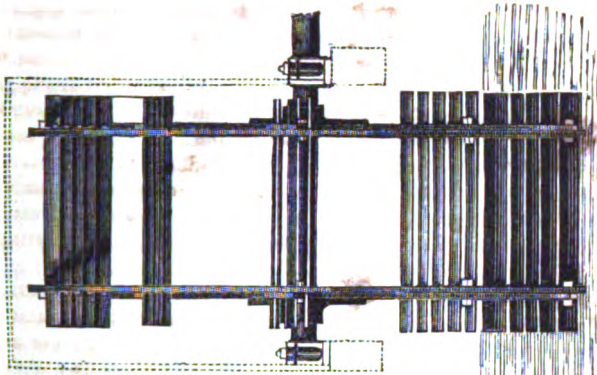


Fig. 2.

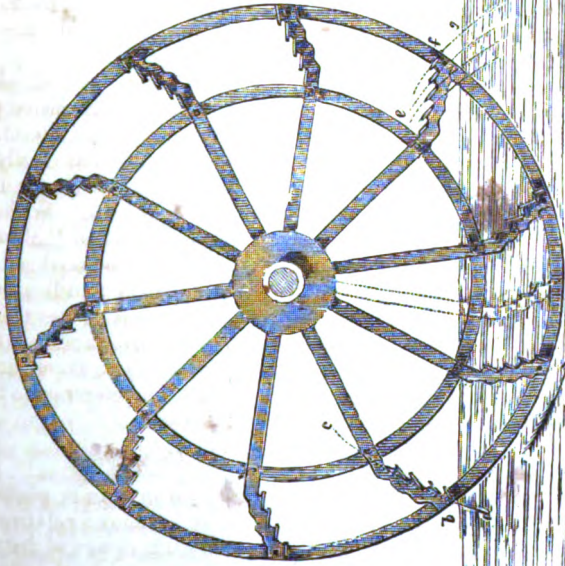


Fig. 1.

GALLOWAY'S WHEEL.
(Cycloidal.)

dles' entrance. On leaving the water also, there is scarcely any back water lifted, the spaces between the bars offering a passage through which it easily falls, as in the direction of the curved lines, *e, f, g*.

NOTES ON THE HARBOUR OF OMOA, in *Spanish America*.—The Fort is in *lat. 15° 35' 40" N. and long. 87° 43' 12" W.*

ON making this harbour from the eastward, the fort will appear like a brown cliff through a gap in the mangrove trees. Steer in for this gap, then edge away gradually for the west point of the bay, giving it a berth of a cable and a half's length, when you will be in fourteen fathoms. Haul in till you open the fort, you may then keep close to the west point, as it is bold to.

The best anchorage is with the N. E. end of the Fort bearing east. This will shelter you from a north wind, and should a north-west wind take you while in harbour, it is easy to run into the inner harbour, where there are from four to nine fathoms all over, and the ground good, particularly on the west side. The fort is large and commands the entrance of the harbour. It has about twenty guns mounted, but has no breastwork, and may indeed be considered as a platform. It is about sixty feet above the level of the sea, but is entirely commanded by a hill abreast of the village, and a little at the back of the fort. It was from this position that the English bombarded it, and succeeded in dislodging the Spaniards. From the easy access which might be had to this hill, and the present motley group which form the military of the place, it is not difficult to believe that a similar attack would be successful if equally well conducted. The troops are, in their externals, miserable, and as the ship's arrival was considered suspicious, the alarm was beat, and a fine opportunity afforded of witnessing their forces collected.

Fish and fresh water are to be had in abundance here: the former by hauling the Seine, and the latter from a river that is on the star-board shore going in. At this place you may land your casks and pitch tents on a fine grass plat, and fill at leisure. It is advisable to adopt rafting here, as there is no surf, and the beach is excellent. The Ontario launched her gig over into the river, and pulled up a considerable distance. Here we found limes, citrons, &c., growing wild in the greatest abundance. The water of the river is good, but does not keep long. Stock is plentiful here, but the price is high. There is a good amusement for the sportsman as well as anglers here, and the whole bay may be said to abound with natural attractions. The scenery of the near as well as more distant grounds is of that tropical kind which does not admit of a particular description. The luxuriance of nature here finds no check from the hands of the agriculturist, and the trees and herbs indigenous to the climate, are, with few exceptions, permitted to remain in their primitive states. The celebrated sensitive plant is common here, and there are many marine productions on the outer shore. Amphibious creatures are occasionally met with, and sharks are numerous, which prevents bathing. The village is poor and straggling: the people are obliging and respectful, but have not the means of satisfying many of the wants of a ship. J. H. C.

CURRENTS OF THE OCEAN.

WE are indebted for the following letter to our experienced navigator, Captain Sir John Ross, R. N. —

To the Editor of the Nautical Magazine.

Athenum, 9th February, 1837.

SIR,—Having observed, from time to time, that accounts have been given in your valuable Magazine of bottles thrown overboard from ships at sea, containing papers denoting the latitude and longitude, &c., at the time, said to be, “for the purpose of ascertaining the direction of the currents in the ocean, for the benefit of all sea-going men,”—which bottles having been picked up, and the papers found in them sent to the Foreign Office for publication;—I take leave to acquaint you, for the information of the public, that from experiments which I made on my first voyage of discovery, I found that the method of throwing bottles overboard, for the purpose above mentioned, was very fallacious, and calculated to lead those concerned into erroneous conclusions. In order to ascertain this fact, I constructed a copper vessel nearly the size of a bottle and having loaded it so that it would but just swim, I threw it and a bottle overboard at the same time, and having remained with my ship at a convenient distance, I observed that the bottle separated from the immersed copper vessel, in the direction of the wind, at the rate of one, two, and on one occasion, three miles in twenty-four hours; the direction being always that of the wind: and I observed that when it blew hard and the waves ran high, the bottle would roll along several fathoms, whenever it happened by the action of the sea to be thrown on its side.

Adverting to the instance recorded in your number for February, of a bottle being thrown overboard by the troop-ship *Kent* in lat. $50^{\circ} 20' N.$, and long. $19^{\circ} W$: “the ship having been for several days past found considerably southward of her reckoning:—which bottle was found near Cape Blanc-nez, in lat. $50^{\circ} 53' N.$, and long. $1^{\circ} 35' E.$, and had been 124 days at sea, out of which the wind had been one hundred days westerly and only fourteen easterly, during this time the bottle made an $E. \frac{1}{4} N.$ course distance 793 miles,* and the wind having also been, during that time, rather more from the southward than the northward, gives six per day, nearly, or about one-fourth of a mile an hour.

* [We gave the absolute distance between the points of departure and arrival of this bottle as about 840 miles, and left the probable course and distance which it had travelled, for future speculation. At the same time we take the opportunity of correcting a typographical error* in our own conclusion respecting this bottle, in which we have been made to say that it travelled “sixty-six” instead of 6·8 miles per day. In recording Sir John Ross’s opinion on this subject, with all the respect we entertain for him, and to which his long experience entitles him, we hope that those of our readers who have already turned their attention to it, will not be deterred from pursuing it, and sending many another bottle on its pilgrimage. For we cannot see any “injury” their several results can do to sea-going men: and at all events they cannot fail to indicate the average result of the drift or surface-current whether produced by wind or tide to which they may have each been exposed. But we by no means differ from him in admitting the justness of the principle which he points out. Doubtless a body beneath the surface cannot be so much influenced by the wind as the one exposed above it, although we apprehend from the small degree of immersion the difference will not be very great

* Page 104. No. 2, for February.

Throwing bottles overboard may indeed be useful for other purposes, but for ascertaining the currents in the ocean that practice is not only utterly useless but instead of benefiting sea-going men is calculated to do them an injury.

I am, Sir, your obedient servant,
JOHN ROSS.

THE HAVANA PIRATES.

[Concluded from page 9.]

It was evident, from the confession of Perez, that the captain of the *Panda* was still at Nazareth, with ample means, in the shape of dollars, to obtain another vessel, if he met with one at his disposal. Therefore, Capt. Trotter having been so far, unexpectedly, successful in obtaining possession of these pirates, left Fernando Po on the 29th of August for the African coast; but was convinced that a show of force only would induce the African chief to deliver him up, with any of his crew that might still be with him.

Our cruisers were scattered about the coast, and could not be concentrated in sufficient force to accompany the *Curlew*. Disappointed in his hopes, Captain Trotter returned to Fernando Po, and an opportunity was offered him of effecting by stratagem what he had no other means of doing.

The *Princess Elizabeth*, a British barque of about 200 tons was lying there, and her master, Lewis Fatio, offered the gratuitous use of his vessel to Captain Trotter to effect his purpose. After a consultation, it was resolved that the vessel should go to the river Nazareth as on a trading voyage, and that Mr. Matson, mate of the *Curlew*, with twelve of her men, in addition to the crew of the *Princess Elizabeth* should go in her. On the arrival of the vessel the first thing to be done was to entice the king and his principal men on board for the purpose of trading, and then seize them, retaining them as prisoners until the arrival of the *Curlew* with Captain Trotter. While we record our admiration of that spirit which planned and carried this scheme into execution, we must not omit to award our meed of applause to the disinterested conduct of Captain Fatio who so nobly placed his vessel at the disposal of Captain Trotter in so worthy a cause as the capture of the leader of a band of pirates. The whole plan of proceedings being settled, the plot was ripe for execution, and Mr. Matson sailed from Fernando Po to discharge the singular but important duty intrusted to him. It was one of no ordinary kind: the dangerous character of the lawless natives, the suspicious cunning of the pirates, who are always acutely alive to stratagem and deceit,

in respect to bottles; but as we cannot have them always so, we are content to have them any way. The account of the former bottle to which we alluded as picked up near Boulogne, will be found in page 130 of our volume for 1834,* and the rate of the actual drift which it gave was about what Sir John Ross states it should be, 14·3 miles per day for the English Channel. It will be seen, however, that that bottle was thrown over by the *Favorite* inside the mouth of the Channel, being absolutely to the eastward of Scilly, while the *Kent* was nearly 500 miles further to the westward, where it was subject to be drifted in various directions before it came within the great influence of the direct Channel drift. We consider the comparison of the results of these two bottles to be so far interesting as to reward amply the trouble and attention of the persons who threw them over, and had a proper attention been paid to this Channel drift, the fate of the *Clarendon*, recorded in page 805 of our last volume, might no doubt have been averted.—ED. N. M.]

* In this page "easterly" is printed for "westerly" winds.

demanding on such a service cool and deliberate measures, and yet firmness and promptitude of decision, and above all presence of mind, at any extremity.

Mr. Matson departed in the Princess Elizabeth from Fernando Po with the orders which he had received from Captain Trotter, it having been previously arranged that the Curlew was to follow her, and that their rendezvous should be Cape Lopez, about thirty miles west from the river Nazareth. The Curlew was also to be disguised by painting her differently, besides other means by which it was intended the natives should mistake her for a slaving vessel. Having arrived at Cape Lopez, Mr. Matson soon determined on his future plan. He was now in the character of the commander of a merchant vessel, and had to trade with King Passall, and if he had not a difficult, at least he had a dangerous, part to perform. He therefore communicated his intentions in the following letter, which although assuredly never intended to meet the public eye, displays a spirit of determined bravery and devotion to his duty, so honourable to the writer, that we cannot prevail on ourselves to withhold it.

Cape Lopez, Sept. 24th, 1833.

SIR,—As I am about to proceed on what may possibly prove a dangerous expedition, I have left a few lines to explain what our movements have been; we arrived at our rendezvous on the 20th; I left on the 21st; I arrived here on the 22d; the natives are evidently very suspicious of us; several canoes have reconnoitred us, but none would approach the vessel; therefore, I conceive, the only way to lull their suspicions, is to go on shore and ask if they have any trade to make and gain what information I can respecting Don Pedro; if I see him I shall offer to exchange cloth, &c. for dollars, to induce him to come on board: I shall of course be guided by circumstances, and act to the best of my judgment. If I am detained I think it would be better to trust to chance for an escape and not sacrifice any more lives in carrying on what would prove an unequal warfare. I hope you will excuse my attempting to give advice, I only request that no lives may be lost on my account; if they think proper to make me suffer the fate of a spy, write to my friends to say I have done my duty. With kind regards to all shipmates, I remain your sincere friend and well-wisher,

To Captain Trotter, H.M. Sloop Curlew.

H. T. MATSON.

This being concluded and left for delivery to Capt. Trotter, on his arrival in the Curlew, Mr. Matson proceeded to the Nazareth, and having landed alone in disguise, the first person who came to meet him, was Don Pedro himself, the captain of the Pirate. He saluted Mr. Matson, who, not knowing him, merely returned his salute and passed on towards the king's residence. But the suspicious, scrutinizing eye of the pirate discovered some deficiency in the general behaviour of the newly arrived trader which awoke suspicions in his guilty mind, that all was not right, and he determined on telling the king that his visitor had more the appearance of a man of war's officer than the mate of a merchant ship. But won by the prospects of plenty of trade the king disregarded the assertion of the pirate. The joyous dreams of plenty of rum, muskets and powder, were uppermost in his thoughts, and excluded from him those deep suspicions and all the horrors in their train which were passing in the restless imagination of the piratical captain, on finding that the supposed trader had succeeded so far as to induce the king to let his son and some of his principal men return with him to the Princess Elizabeth. There they were regaled with liquor to their hearts' content, and it was not long before yielding to its powerful influence they were all snoring loudly.

The Curlew, on her way to Cape Lopez to join the Princess Elizabeth, had occasion to touch at I. St. Thomas, and one of the Panda's

crew was there accidentally seen and recognized by the Portuguese prisoner on board the Curlew as one of his shipmates. Mr. Holmes, an American gentleman, also stated confidentially, that four more of the pirates were on the island, and that a Portuguese vessel, the *Esparanza*, then lying in the harbour, had brought them from Cape Lopez. The governor declared the thing impossible; that no vessel could land on the island without his permission, and moreover, that the *Esparanza* had not come from Cape Lopez. The same assertion was made on board the *Esparanza* when she was examined by the Curlew's boats. Captain Trotter, however, had information on which he could depend, knowing that one of the Spaniards was on the island, and believing that there were more, he induced the governor to promise him that a strict search should be made for them, and in the mean time he departed in the Curlew to keep the appointment with Mr. Matson at Cape Lopez.

It was getting near midnight, when the Curlew tacked under the stern of the *Princess Elizabeth*, and Mr. Matson had the satisfaction of going on board to Captain Trotter, and communicating the success of his proceedings so far, that the young prince and some of his friends were in his power. Captain Trotter stood out to sea again in the Curlew, having agreed with Mr. Matson that both vessels should enter the river on the following day. Mr. Matson returned on board to his visitors, who were unconscious of what was going forward.

Accordingly, the next afternoon both vessels ran into the river under easy sail, with Portuguese colours flying, and came to an anchor. The Curlew having been disguised, was taken for a slaving vessel by the natives, and several of King Passall's relatives, eager for the market, flocked on board. There they discovered their mistake when too late, and they were made prisoners while the plot was still carried on in the *Princess Elizabeth* by Mr. Matson.

The king, who had been leading the way for the vessels in his canoe, was now seen making for the shore by the young prince and his companions, with Mr. Matson, and observing an attempt made to overtake him without success, they now first discovered their real situation. Matters were now come to their worst—all was consternation among the captives, who concluded that their death was certain; the alarm spread to the shore, and terror and confusion took place of the rejoicing which the arrival of the vessels had occasioned.

Having secured sufficient hostages in the king's son and principal men, Captain Trotter then proceeded openly to demand the surrender of Don Pedro Gibert, the commander of the *Panda*, and those of his crew who were with him, promising to give up his hostages on their being delivered to him. Much evasion and delay was resorted to by the chief, occasioned no doubt by the threats of the pirates. But, happily, after some negotiation, the feelings of nature preponderated, and the king determined on delivering them up, to rescue his son. Terms were agreed on, and the next morning Captain Trotter landed in his gig, and received the piratical captain from the hands of the very people he had gone to enslave, and conveyed him on board the Curlew, where he was closely guarded as a prisoner. Soon after, three other Spaniards, part of the *Panda's* crew,* were sent on board the Curlew,

* Jose Velasquez, Antonio Ferrer, and Nicolas Costa.

in canoes, on which the hostages were released, and landed, to the great joy of the natives. Thus, by a well-planned design, followed up by prompt measures, was accomplished the object of the Curlew's visit; and Captain Trotter having re-established himself on amicable terms with the king and his people, sailed with his prisoners for St. Thomas's, to look after the rest. He had learnt at the Nazareth the fact, that the *Esperanza* had really conveyed away the mate, carpenter, and others of the *Panda's* crew, with the sum of two thousand dollars, to purchase a new vessel at that island, notwithstanding the Governor's assertion to the contrary.

On the Curlew's arrival at the island, the Governor asserted that search had been made for the Spaniards, whom he was certain were not there; but what was the surprize of Captain Trotter, when he learnt from Mr. Holmes, an American gentleman resident, that they had actually purchased a vessel of the Governor himself, and were fitting her for sea, until the arrival of the Curlew, when they desisted, for fear of discovery. With such deceitful conduct as this in so high an authority as the Governor himself of a Portuguese island, there was no dealing, as Captain Trotter was not at liberty to give up his informant. Mr. Holmes was a respectable merchant, and would have been ruined, had such a disclosure been made respecting him. His activity, however, in obtaining information was not unobserved by the pirates, who robbed the house of his countryman and friend, and nearly burnt him alive in it.

Thus disappointed in his object by the duplicity of the Portuguese Governor, a fortnight elapsed while the Curlew lay at St. Thomas's, Captain Trotter being unable to get possession of the pirates, when, early one morning he received intelligence from Mr. Holmes that the *Esperanza*, which had sailed during the Curlew's absence, had arrived the previous evening at another part of the island—that she was hovering off the shore to receive them, and that they were already on their way to the nearest point of embarkation. Such intelligence was most welcome to Captain Trotter, and the boats of the Curlew were speedily prepared and dispatched to interrupt her. They had some distance to go, and shortly after sunset she was in their possession; but great was their disappointment on finding that the pirates had not embarked. Like the *Panda*, she was found stowed with water-casks for a slave voyage. She was brought to the anchorage near the Curlew.

It might appear incredible that pirates would be protected thus, but be it true or not that the authorities of the island were privy to all that Mr. Holmes accused them of, the possibility of their being so will not be doubted by any one who has visited the Havana, where both slave and piratical vessels are fitted out in open day, before the windows of the Governor-General's palace! When such enormities are tolerated in the most valuable colony of Spain, it can be no matter of surprize that an insignificant island of the sister-kingdom should be a resort for pirates, particularly when it is considered that these are the only two nations which now continue the inhuman traffic in slaves.

It would almost appear that the Governor's patience was at length worn out by the tenacious perseverance of Captain Trotter in his endeavour to get possession of these pirates, or that their future concealment, now they had lost their chance of escape, would be at least inconve-

nient, and perhaps impossible. Be this as it may, the *day following the seizure of the Esperanza*, Captain Trotter was formally told by the Governor that accounts had reached him of some Spaniards being on a distant part of the island, and that he had given directions that they should be taken into custody. The opportunity for the Governor was perhaps good to get rid of them. However, the next day they were examined, and identified as the mate, the carpenter, and three seamen of the *Panda*. The unhappy men were immediately sent as prisoners on board the *Curlew*, where they found their accomplices in guilt and crime—their captain, Don Pedro Gibert, and his companions, who had been taken at the Nazareth. Such a meeting, and under such circumstances, had not been anticipated by them, but might have been, had they reflected on their lawless pursuits. But this frame of mind was remote from them—they had gone on in their career of guilt till, by the exertions of Captain Trotter, through a chain of circumstances, in which difficulties and dangers of every kind had been surmounted, they were overtaken, and had now to await the decree of the laws which they had so recklessly violated.

It was now satisfactorily proved to the Governor, that the *Esperanza* had been employed in the service of the pirates, but her captain and mate being unfortunately on shore when she was seized by the *Curlew's* boats, he was unable to deliver them up to Captain Trotter. It must be said, however, that of his own accord he put them in close confinement, with the intention of sending them to Lisbon by the first opportunity. He directed their property to be sold, depositing the proceeds in the royal treasury; and the vessel which the pirates had bought, and were fitting, was also disposed of in the same manner.

Eleven months elapsed from the time of the seizure of the *Panda* to that of the arrival of her crew in England in June, 1834, on board the *Curlew*,* accompanied by the *Esperanza*. The latter vessel, after a communication between the Portuguese and British Governments, was navigated to Lisbon by an officer and ship's crew of the *Victory*, (the flag-ship at Portsmouth,) and there made over to the Portuguese authorities, while the pirates were kept closely confined until the *Savage*, under the command of Lieut. Loney, then fitting out, was ready for sea. By this vessel they were conveyed to Salem,† and arrived at the same time that the *Mexican*, with the same captain, mate, and cook, on board, was going to sea on a foreign voyage. It was just two years since they had plundered this same vessel, and left her with her crew to be destroyed by fire. The *providential* circumstance of the *Mexican* and her officers being thus at hand, expedited the course of justice—her voyage was delayed, and the pirates were eventually conveyed to Boston, to be confronted with their intended victims. Here they were brought before the circuit court of the United States, and, after a long trial, which produced considerable interest in the public mind, and terminated in November, 1834, six were condemned to death. The mate was, however, strongly recommended to mercy, having in 1831, when in command of the *Leon*, gallantly saved the lives of seventy Americans from the *Minerva*, a ship of New York he fell in with when foundering at sea, and for which service he had

* See vol. iv. page 442.

† And page 696, for remarks on this.

received the thanks of the President of the United States. His conduct on this occasion was most noble and praiseworthy, and the recommendation of the jury was not without its good effect. In the course of the trial, the temperate and masterly manner in which the prosecution for the Government was conducted by Mr. Dunlap, excited general admiration. The words in which he alluded to his opponent, Mr. Child, who conducted the defence, are in our mind far more applicable to himself: "His address was decked with all the graces of a brilliant imagination, and with all the attraction of the most persuasive eloquence;" while the latter gentleman was more than once led to the expressions of feelings unworthy of him, and for which he thought it well afterwards to apologize to the court.

Through the exertions of their consul, a reprieve of three months was obtained for the condemned pirates, and the zeal of a philanthropic, though ill-judging lady,* induced her to travel from Washington to Boston, to intercede with the President in their behalf. Far worthier were the motives which influenced the wife of Bernardo de Soto on this melancholy occasion. She was at Coruna when she heard of the trial and condemnation of her husband, and instantly crossed the Atlantic to the Havana, where, being in need of pecuniary assistance to proceed with, a Spanish merchant presented her with five hundred dollars. Had he intended this to have assisted her husband to elude the course of justice, it is a singular contrast that his brother-in-law had been most active in bringing him to trial. By this means she was enabled to reach the United States, and, throwing herself at the President's feet, had the happiness of contributing her efforts towards the reprieve of her wretched husband. He was spared, and the rest of the unhappy delinquents† have forfeited their lives as the penalty of their crimes.

In concluding this narrative, we must not fail to record its results in another point of view. The principal persons through whose activity the pirates were thus brought to justice, received that encouragement from their country which their exertions merited. Mr. Matson, on his return in the *Curlew*, was promoted to the rank of lieutenant, and the following communications were made to Captain Trotter; which, unknown to this officer, and without his permission, we take upon ourselves to record:—

"Admiralty, 7th Sept., 1835.

"Sir,—I am commanded by my Lords Commissioners of the Admiralty to transmit to you herewith, a copy of a letter from Mr. Vail to Lord Palmerston, and I am to express their Lordship's approbation

* Mrs. Child, the wife of the prisoners' counsel. She went on her knees to the President; but her prayer was not granted.

† Their names were, Pedro Gibert, *captain*, born in Catalonia, married, age 38.

Francisco Ruiz, *carpenter*, born in Santander, unmarried, age 32. This man attempted to blow up the *Panda*. It was supposed he was insane after condemnation, and he was not executed for some weeks after the rest.

Manual Boyga, *seaman*, born in San Lucar, unmarried, age 40.

Manuel Castillo, *ordinary seaman*, born in Lima, unmarried, age 33.

Angel Garcia, *seaman*, born in Carthage, unmarried, age 29.

Juan Montenegro, *alias* Jose Basilio de Castro, *ordinary seaman*, born in Ferrol, unmarried, age 23.

of your conduct, and the satisfaction with which they have received this testimonial of the manner in which your services in this matter have been appreciated by the American Government.

“ I am, Sir, your most humble servant,
(Signed) “ JOHN BARROW.

“ Commander Trotter, 17, Orchard Street ”

“ Upon the receipt of the two notes which the Right Honourable Lord Viscount Palmerston, &c. did the undersigned, &c. the honour of addressing to him on the 13th June and 6th July of last year, the undersigned hastened to communicate to his Government the information they contained respecting the apprehension by his Majesty's ship *Curlew*, on the coast of Africa, of several individuals, formerly of the Spanish schooner *Panda*, on suspicion of having been concerned in an act of piracy against an American vessel. That information having been laid before the President, together with the report of the trial which led to the conviction of the individuals referred to, by the circuit court of the United States sitting at Boston, the President has perceived with a lively satisfaction the motives by which Captain Henry Dundas Trotter, of his Majesty's service, then in command of the *Curlew*, was led to effect the seizure of the *Panda*, and the gallantry and persevering zeal which characterized his agency and personal exertions, in the pursuit and ultimate capture of the pirates. Impelled by a high sense of approbation of the conduct of that officer, and in justice to him individually, as well as to the service to which he belongs, the President has caused the undersigned to be instructed to express to his Majesty's Government the satisfaction he has derived from the gallant and praiseworthy services rendered by Captain Trotter on the occasion alluded to, and from the manifestation afforded by his conduct of the readiness of the officers of his Majesty's naval service to lend to general commerce on the high seas that protection in which the United States have so deep an interest, in common with all other maritime nations. In performing this pleasing duty, the undersigned, in further compliance with his instructions, has the honour to request that Lord Palmerston will have the goodness to communicate the sentiments thus expressed on behalf of the President to the Lords Commissioners of the Admiralty, and that they may likewise be made known to Captain Trotter himself.

“ The undersigned prays Lord Palmerston to accept the renewed assurances, &c.

(Signed) “ A. VAIL.

“ The Right Hon. Lord Viscount Palmerston,
“ 49, York Terrace, 3rd Sept., 1835.”

“ Admiralty, 16th Sept., 1835.

“ Sir,—My Lords Commissioners of the Admiralty having had under their consideration your exertions while in command of the *Curlew*, in the capture of the piratical schooner *Panda*, and her crew, and the perseverance displayed by you in circumstances of extreme difficulty, and involving you in great personal responsibility, for which, and the protection thereby afforded to American commerce,

you have received through his Majesty's Secretary of State for Foreign Affairs the thanks of the President of the United States, are pleased, as a mark of the sense which my Lords entertain of your conduct, to promote you to the rank of Captain in the Royal Navy.

"I am, Sir, your most obedient servant,
(Signed) "C. Wood.

"Commander H. D. Trotter."

[Great credit is due to Colonel Nichols, for his indefatigable zeal in the whole of this transaction; and the value of his discrimination of character was well exemplified in his having selected Perez for king's evidence. It appeared afterwards he was the only one amongst them of sufficient honesty to keep the truth at all hazards, and without his testimony the piracy might not have been proved.]

Naval Chronicle.

THE ROYAL NAVY IN COMMISSION. FEB. 15, 1837.

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

The Right Hon. Gilbert Earl of Minto, G.C.B.

Sir Charles Adam, K.C.B., Vice-Admiral of the White; Sir Wm. Parker, K.C.B., Rear-Admiral of the White; the Hon. George Elliot, C.B., Rear-Admiral of the Blue; Sir E. T. Troubridge, Bart., Captain, R.N.; the Right Honourable Archibald Lord Dalmeny.

First Secretary, Charles Wood, Esq., M.P.; *Second Secretary*, Sir John Barrow, Bart., L.L.D., F.R.S.; *Private Secretary to the First Lord*, H. Tuffnell, Esq.

Hydrographer, Francis Beaufort, Esq., Captain, R.N., F.R.S., &c.

PORTSMOUTH.—Admiral Sir Philip Charles Henderson Durham, G.C.B.—Flag-ship, *Britannia*, 120.

PLYMOUTH.—Admiral the Right Hon. Lord Amelius Beauclerk, G.C.B., G.C.H.—Flag-ship, *Royal Adelaide*, 104.

NORE.—Vice-Admiral Sir Robert Waller Otway, Bart., K.C.B.—Flag-ship, *Howe*, 120.

ASTREA—Capt. J. Clavell, Superintendent of Packets, Falmouth.

BRITANNIA, 120—Capt. T. W. D. Dundas, Portsmouth.

BRUNE, 22—Com. R. Scallon, Chatham.

CARYSFORT, 26—Capt. H. B. Martin, Sheerness, fitting.

CORNWALLIS, 74—Capt. Sir R. Grant, Devonport, fitting for flag of Vice-Admiral Sir Charles Paget.

DIDO, 28—Capt. L. Davies, C.B., fitted at Sheerness; 4th Feb. arr. at Spithead.

EXCELLENT—Capt. T. Hastings, Portsmouth, for gun practice.

HOWE, 120—Capt. A. Ellice, Sheerness.

NORTH STAR—Chatham, fitting, said for north coast of Spain.

PELORUS, 16—Com. F. Harding, Portsmouth, fitting.

- ROYAL GEORGE, *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, Portsmouth.
- ROYAL SOVEREIGN, *Yct.*—Capt. Sir Charles Bullen, K.C.H., Pembroke.
- ROYAL ADELAIDE, 104—Capt. J. Sykes, Plymouth.
- SAN JOSEF, 110—Capt. R. Thomas, Plymouth.
- SAVAGE, 10—Lieut. Com. Hon. E. R. Curzon, Plymouth: com. 19th Dec.; 2d Jan. sailed for north coast of Spain.
- SCYLLA, 16—Com. H. J. Denman, commissioned at Devonport 31st Dec.
- SEAFLOWER, 4—Lieut. Com. J. Roche, Portsmouth.
- SNAKE, 16—Com. A. Milne, Sheerness.
- SPEEDY, *Cutter*—Lieut. Com. J. Douglas, Sheerness.
- STAG, 46—Capt. T. B. Sullivan, C.B., Plymouth: 28th Nov. comisd.
- TALAVERA, 74—Capt. W. B. Mends, Devonport.
- TEMBRAIRE, 104—Capt. T. F. Kennedy, Sheerness.
- TRINCULO—Com. H. E. Coffin, Devonport.
- TYRIAN, 10—Lieut. Com. E. Jennings.
- VICTORY, 104—Capt. T. Searle, C.B.
- WILLIAM AND MARY, *Yacht*—Woolwich.

LISBON STATION.

Vice-Admiral W. H. Gage, G.C.H.—Flag-ship, *Hastings*, 74.

- CAMELEON, 10—Lieut. Com. J. Bradley, 10th Dec. in the Tagus.
- COMET, St. V.—Lieut. Com. R. Otway, (act.)
- HASTINGS, 74—Capt. H. Shiffner, Tagus, 29th Jan.
- HERCULES, 74—Capt. M. F. F. Berkeley, 19th Jan. arrived at Plymouth from Cadiz; 31st Jan. at Sheerness.
- INCONSTANT, 36—Capt. D. Pring, 26th Dec. sailed for north coast of Spain.
- MAGICIENNE, 24—Capt. G. W. St. John Mildmay, 31st Dec. arrived at Lisbon.
- MALABAR, 74—Capt. Sir W. A. Montagu, C.B., 26th Jan. in the Tagus.
- MINDEN, 74—Capt. A. R. Sharpe, 3d Jan. in the Tagus.
- PARTRIDGE, 10—Lieut. Bisson, Plymouth.
- PEARL, 20—Com. H. Nurse, Jan. arrived at Lisbon from the Azores; 26th Jan. in the Tagus.
- PEMBROKE, 74—Capt. Sir T. Fellowes, 26th Jan. in the Tagus.
- PHENIX, 4, St. V.—Commodore Right Hon. Lord J. Hay.
- PIQUE, 36—Capt. Hon. H. J. Rous, 27th Jan. at Cadiz.
- PLUTO, St. V.—Lieut. Com. J. Duffill.
- RINGDOVE, 16—Com. W. F. Lapidge, 26th Jan. at Bilbao.
- ROYALIST, 10—Lieut. Com. C. A. Barlow, 26th Jan. at St. Sebastian.
- RUSSELL, 74—Capt. Sir W. H. Dillon, K.C.H., 26th Jan. Tagus.
- SALAMANDER, 4—Com. S. C. Dacres, 26th Jan. at Santander.
- SAMABANG, 28—Capt. W. Broughton, 14th Jan. sailed for north coast of Spain; 26th Jan. at Santander.
- SARACEN, 10—Com. T. P. Le Hardy, 26th Jan. at Bilbao.
- SPEEDY, 8—Lieut. Com. J. Millett, 26th Dec. sailed for north coast of Spain; 26th Jan. at Passages.
- TWEED, 20—Com. T. Maitland, 26th Jan. at Passages.
- VIPER, 6—Lieut. Com. W. Winniatt, 11th Nov. at Passages.
- WATERWITCH, 10—Lieut. Com. J. Adams, (b.)

MEDITERRANEAN STATION.

- Admiral Sir Josias Rowley, Bart., G.C.B., Flag-ship, *Caledonia*, 120.
- ASIA, 84—Capt. W. Fisher, 20th Jan. at Malta.
- BARHAM, 50—Capt. A. L. Corry, 20th Jan. at Malta; 8th arrived from Tripoli.
- BELLEROPHON, 80—Capt. S. Jackson, C.B., 20th Jan. at Malta.
- BLAZER, St. V.—Lieut. J. M. Waugh.
- CALEDONIA, 120—Capt. G. B. Martin, C.B., 20th Jan. at Malta.
- CANOPUS, 84—Capt. Hon. J. Percy, 1st Feb. arrived at Plymouth from Malta.
- CHILDERS, 16—Com. Hon. H. Keppel, left Gibraltar for Cadiz 20th Jan.
- CLIO, 16—Com. W. Richardson (a), 22d Jan. arrived at Valencia from Tarragona.
- CONFIANCE, 2, St. V.—Lieut. Com. W. Arlett, 11th Jan. left Falmouth for Malta; 25th Jan. left Gibraltar.
- FIREFLY, St. V.—Lieut. Com. J. Pearse, Malta, 20th Jan.
- HARLEQUIN, 16—Com. J. E. Erskine, 3d Jan. arrived at Malta from Barcelona; sailed for Corfu.
- JASEUR, 16—Com. J. Hackett, 19th Jan. arrived at Gibraltar from Malaga; 25th Jan. sailed for Malta.
- MEDEA, 4, St. V.—Com. W. Austin, at Malta, 20th Jan.
- NAUTILUS, 10—Lieut. Com. W. Croke, arr. at Malta 14th Jan.
- ORESTES, 18—Com. J. J. F. Newell, 6th Jan. at Malta; 17th at Malaga, rigging jurmasts.
- PORTLAND, 52—Capt. D. Price, Jan. at Venice.
- RAPID, 10—Hon. G. H. St. V. De Ros Kinnaird, 27th Oct. sailed from Portsmouth; 20th Jan. at Malta; 5th arr. from Tripoli.
- REVENGE, 78—Capt. W. Elliott, K.C.H., at Malta 20th Jan.; 8th arrived from Tripoli.
- RODNEY, 92—Capt. H. Parker, 19th Nov. at Malta.
- SAPPHIRE, 28—Capt. R. F. Rowley, 1st Oct. at Corfu.
- TARTARUS, St. V.—Lieut. Com. H. James, Malta.
- TRIBUNE, 24—Capt. J. Tomkinson, Oct. at Smyrna.
- TYNE, 28—Capt. Viscount Ingestrie, C.B., 11th Nov. at Gibraltar; 17th Jan. at Malaga.
- VANGUARD, 80—Capt. Hon. D. P. Bouverie, 31st Oct. Dardanelles; 4th Jan. at Malta; sailed for Tunis.
- VERNON, 50—Capt. J. M'Kerlie, 21st Jan. at Malta.
- VOLAGE, 28—Capt. P. Richards, 31st Oct. arr. at Constantinople.
- WOLVERINE, 16—Com. E. Howard, 17th Jan. arr. at Gibraltar from Plymouth.

CAPE STATION.

- Rear-Admiral Patrick Campbell, C.B.—Flag-ship, *Thalia*, 46.
- BONETTA, 3—Lieut. Com. H. P. Deschamps.
- BUZZARD, 3—Lieut. Com. P. Campbell, 11th Nov. off Cameroons; 17th Dec. arr. at Sierra Leone, with prizes Olympia Spanish slaver, 287 slaves; and Lizza, 22 slaves.
- CHARYBDIS, 3—Lieut. Com. S. Mercer, 6th Oct. at Sierra Leone.
- COLUMBINE, 18—Com. T. Henderson.

- CURLEW, 10—Lieut. Com. E. Norcott.
 DOLPHIN, 3—Lieut. Com. T. L. Roberts, 15th Nov. arr. at Sierra Leone from Plymouth; 17th sailed for Prince's Island.
 FAIR ROSAMOND, 3—Lieut. Com. G. Rose, 10th Feb. arr. at Portsmouth.
 FORRESTER, 3—Lieut. Com. G. G. Miall, 20th Oct. captured slave schooner *Victoria*, with 380 slaves.
 LEVERET, 10—Lieut. Com. J. C. Bosanquet, 22d Oct. arr. at Cape from Mazambique; 8th Nov. left Cape for Mauritius.
 LYNX, 3—Lieut. Com. H. V. Huntley, 11th Oct. left Ascension.
 PELICAN, 16—Com. B. Popham, 14th Oct. left Mauritius for Cape; 30th Oct. arrived; 24th Nov. at Cape.
 PYLADES, 18—Com. W. L. Castle, in company with Forrester, captured Portuguese slave schooner *Esperanza*, 479 slaves.
 ROLLA, 10—Lieut. Com. F. H. H. Glasse.
 SCOUT, 18—Com. R. Craigie, Nov. Bight of Benin.
 THALIA, 46—Capt. R. Wauchope, 18th Nov. at Cape of Good Hope, from Ascension.

EAST INDIA STATION.

Vice-Admiral Hon. Sir T. B. Capel—Flag-ship, *Winchester*, 52.

- ALGERINE, 10—Lieut. Com. W. S. Thomas, 27th Aug. left Trincomalee for Madras.
 ANDROMACHE, 28—Capt. H. D. Chads, 1st Oct. arr. at Singapore; 7th sailed.
 CONWAY, 28—Capt. C. R. Drinkwater, 1st Dec. off Plymouth, on her way to East Indies.
 RALEIGH, 16—Com. M. Quin, 11th June left Madras for Canton; 28th Oct. arrived at Singapore from Malacca.
 RATTLESNAKE, 28—Capt. W. Hobson.
 ROSE, 18—Com. W. Barrow, 30th July left Trincomalee for Madras; 3d Aug. arrived.
 VICTOR, 16—Com. E. Crozier, 12th June left Madras for Australia.
 WINCHESTER, 52—Capt. E. Sparshott, K.H., 4th Aug. at Trincomalee; 11th Oct. arr. at Madras from Trincomalee.
 WOLF, 18—Com. E. Stanley, 21st Oct. arr. at Singapore from Malacca.
 ZEBRA, 16—Com. R. M'Crea, 24th July arrived at Sydney.

SOUTH AMERICAN STATION.

Vice-Admiral Sir G. E. Hamond, K.C.B.—Flag-ship, *Dublin*, 50.

- ACTÆON, 26—Capt. Rt. Hon. Lord Edward Russell, 26th July arrived at Valparaiso.
 BASILISK, 6—*Ketch*, Lieut. Com. G. G. Mc. Donald, 1st Oct. arrived at Valparaiso.
 BLONDE, 46—Capt. F. Mason, C.B. 20th Aug. at Valparaiso.
 CLEOPATRA, 26—Capt. Hon. G. Grey, 25th Sept. at Buenos Ayres, 29 Oct. sailed for Falkland Islands.
 COCKATRICE, 6—Lieut. Com. J. Douglas.
 DELIGHT, 10—Lieut. Com. J. Moore.
 DUBLIN, 50—Captain R. Tait, 11th Dec. at Rio.
 KEY, 18—Com. R. Elliott, 7th Dec. arr. at Rio.

- HARRIET, 18—Com. W. H. H. Carew, 15th Sept. at Pernambuco, Dec. at Rio.
 HORNET, 6—Lieut. F. R. Coghlan.
 IMOGENE, 28—Capt. W. H. Bruce, 30th Sept. arr. at Buenos Ayres.
 ROVER, 18—Com. C. Eden, 19th Oct. arr. at Valparaiso from Lima.
 SPIDER, 6—Lieut. Com. O'Reilly, (a) 11 Nov. arr. at Buenos Ayres.
 TALBOT, 28—Capt. F. W. Pennell.

WEST INDIES, HALIFAX, AND NEWFOUNDLAND.

- Admiral Sir Peter Halkett, G. C. H.—Flag-ship, *Melville*.
 ALBAN, St. V.—Lieut. Com. E. Tinling, 24 Nov. at Jamaica.
 BELVIDERA, 42—Capt. C. B. Strong, 2d Sept. Left New York, having landed Marquis of Sligo, 24th Nov. at Barbadoes, 12th Dec. Sailed for Tobago.
 CARRON, St. V.—Lieut. Com. E. E. Owen, 16 Dec. at Jamaica.
 CHAMPION, 18—Com. R. Fair, 8th Dec. at Belize, with a prize slaver of 208 slaves.
 CRUIZER, 16—Com. W. A. Willis, 4th Sept. at Jamaica. 16th. Jan. at Bermuda.
 DEE, 4, St. V.—Com. W. Ramsay, 12th Nov. at Port Royal, 16th Dec. sailed, 26th Dec. arr. at St. Thomas I.
 ECHO, St. V.—Lieut. Com. W. James.
 FORTE, 44—Capt. W. O. Pell, 24th Nov. Port Royal, 30th sailed for Vera Cruz.
 GANNET, 16—Com. J. B. Maxwell, 5th Nov. at Barbados, 6th Dec. sailed for Bermuda.
 GRIFFON,—Lieut. Com. J. Durban, 28th Jan. left Portsmouth for West Indies.
 HARPY, 10—Lieut. Com. Hon G. R. A. Clements, 17th Nov. arr. at Barbadoes, 12th Dec. arr. at Jamaica, 15th sailed for Chagres.
 MADAGASCAR, 46—Capt. Sir J. S. Peyton, K.C.H. 28th Oct. off Land's End. 9th Dec. arr. at Jamaica with Galatea.
 MAGNIFICENT, 4—Lieut. Com. J. Paget, Jamaica.
 MELVILLE, 74—Capt. P. J. Douglas, 4th Nov. at Halifax; 16th Jan. had sailed for Barbados.
 METEOR, St. V.—Lieut. Com. G. W. Smith, 28th Dec. arr. at Jamaica.
 NIMROD, 20—Com. J. Frazer, 15th Oct. at Chagres.
 PICKLE, 5—Lieut. A. G. Bulman, 30th Dec. left Jamaica for Carthage.
 PINCHER, 5—Lieut. Com. G. Byng, 19th Oct. sailed for Port Royal.
 RACEHORSE, 18—Capt. Sir J. E. Home, Bart. 7th Nov. arr. at Maranham from Para.
 RACER, 16—Com. J. Hope, 4th Sept. off Havana.
 RAINBOW, 28—Capt. S. Bennett, 4th Nov. at Halifax, 16th Jan. at Bermuda.
 SATELLITE,—Com. J. Robb, 15th Nov. left Plymouth for West Indies, commissioned 24th Oct.; 24th Dec. arr. at Jamaica, 27th sailed for Vera Cruz.
 SERPENT, 16—Com. R. L. Warren, 21st Dec. sailed for West Indies.
 SKIPJACK,—Lieut. Com. J. Robinson, 15th Nov. at Port Royal, 18th Dec. returned to Jamaica from Chagres.

- VESTAL, 28—Capt. W. Jones (c.) 5th Nov. sailed from Port Royal 30th Dec. at St. Jago Cuba.
 WANDERER, 16—Com. T. Dilke, 4th Nov. at Halifax, 20th Dec. left Jamaica for Cuba, 10th Jan. at Bermuda.
 WASP, 16—Com. J. S. Foreman, 18th Nov. arr. at Port Royal from Havannah 23d Nov. sailed for Carthagena.

TROOP SHIPS.

- ATHOLL, 28—Master Com. A. Karley, 27th Dec. sailed for Ascension.
 BUFFALO,—Capt. S. Hindmarsh, left Rio on way to Australia.

SURVEYING VESSELS.

- ÆTNA, 6—Capt. A. T. E. Vidal, 15th Oct. left Gibraltar 19th Nov. at Sierra Leone.
 BEACON, 8—Lieut. Com. T. Graves, 11th Oct. arr. at Gibraltar.
 FAIRY, 10—Capt. W. Hewett, Woolwich.
 LARK, 4—Lieut. Com. E. Barnett, coast of Honduras.
 MAGPIE, 4—Lieut. Com. T. S. Brock, Archipelago.
 MASTIFF, 6—Master Com. G. Thomas, Woolwich.
 RAVEN, 4—Lieut. Com. G. A. Bedford, Gold coast, Africa.
 STARLING—Lieut. Com. H. Kellett, Pacific Ocean.
 SULPHUR, 8—Com. E. Belcher, Pacific Ocean.
 TERROR, 10—Capt. G. Back, 1st. Aug. in Hudson's Strait.
 THUNDER, 6—Capt. R. Owen, Bahamas.

PAID OFF.

- 8th Feb., at Chatham, CASTOR.
 1st Feb., at Portsmouth, THUNDERER.
 31st Jan., at Plymouth, SCORPION.
 2nd Feb., at Plymouth, SPARROWHAWK.
 4th Feb., at Portsmouth, EDINBURGH.
 14th Feb., at Plymouth, CORNWALLIS.
 14th Feb., at Plymouth, FAVORITE.

FALMOUTH STATION.

January 13th—Sailed H.M.P. Partridge, Lieut. Bisson, for Plymouth : she arrived here from Plymouth last evening.

Same day arrived H.M.P. Star, Lieut. Smith, from Halifax ; she sailed on the 22nd Dec. Passengers by the Star, Lieut. Heathcote and M. Tobin, Esq.

14th—Arrived H.M.P. Goldfinch, Lieut. Collier, from Mexico, she sailed from Tampico 21st Nov., Vera Cruz 30th, and Havannah 13th Dec. Passengers—G. Maclean, Esq., and C. Bredenkamp. On freight 32,000 dollars.

16th H.M.P. Espoir, Lieut. Riley, for Lisbon.

18th—Sailed H.M.P. Pandora, Lieut. Innes, for the Leeward Islands.

19th—Sailed H.M.P. Delight, Lieut. Moore, for Mexico.

21st—Arrived H.M.P. Lyra, Lieut. Griffin (act.) from Lisbon ; sailed on the 8th inst. in company with H.M.S. Hercules for England.

Same date arrived H.M.P. Alert, Lieut. Norrington, from Lisbon ; sailed on the 15th instant. F. J. Van Zeller, Esq., Portuguese Consul General, passenger.

24th—Sailed H.M.P. Ranger, Lieut. Turner, for Brazils.

Same date arrived H.M.P. Tyrian, Lieut. Jennings, from the Leeward Islands ; sailed from Barbados 12th Dec., and St. Thomas, on the 26th December. Passengers, Captain Webb, Messrs. J. Bidingfield, and J. Thomas.

25th—Arrived H.M.St., Rhadamanthus, Lieut. Duffil, from Woolwich, and sailed for St. Sebastian.

27th—Arrived his Majesty's steamer Volcano, Lieut. Mc. Ilwaine, from Woolwich, to take the Mediterranean mails of the 3rd proximo, instead of the Hermes.

Same date sailed H.M.P. Nightingale, Lt. Fortescue, for Plymouth.

28th—Arrived H.M.B. Partridge, Lieut. Bisson, from Plymouth.

30th—Sailed H.M.B. Partridge, Lieut. Bisson, with the Lisbon mails.

31st—Arrived the Manchester steamer, Lieut. Mc. Leod, R.N., from Malaga.

1st Feb.—Arrived H.M.P. Opossum, Lieut. Peter, from Halifax ; sailed 17th Jan. Passengers, Messrs. Minuitas, Curran, Cochram, Frost, Billing, Nodbeck, and Chairman.

3d Feb.—Arrived H.M.P. Nightingale, Lieut. Fortescue, from Plymouth ; also H.M.P. Linnet, Lieut. Donney, from Lisbon ; sailed on the 25th ult.

Same date arrived H.M.St. Tartarus, Lieut. James, with the Mediterranean mails, also bringing two from India ; sailed from Malta 15th Jan., Algiers 20th, Gibraltar 25th, and Cadiz 27th.

Sailed same day, H.M.P. Express, Lieut. Croke, for the Leeward Islands.

4th—Arrived H.M.P. Camden, Lieut. Roberts, from Lisbon ; sailed on the 29th ult. The Ranger Packet arrived from Falmouth, on the night of the 28th ult.

Same day sailed H.M.P. Skylark, Lieut. Ladd, for Halifax.

5th—Sailed H.M.S. Volcano, Lieut. Mc. Illwaine, for the Mediterranean, with the mails.

6th—Sailed H.M.P. Nightingale, Lieut. Fortescue, for Lisbon.

7th—Arrived H.M.P. Briseis, Lieut. Downey, from the Leeward Islands ; sailed from Barbadoes 31st Dec., St. Thomas's 12th Jan. The Jamaica mail brought by the Briseis was brought to St. Thomas's by the Alban steamer, Lieut. Tinling. Mr. Edmund and Mr. Clay, (Wesleyan Missionary,) came passengers by the Briseis.

THE PACKET STATION AT FALMOUTH.—A new arrangement has lately been made at this port for the early delivery of letters, &c. from ships which may be detained at sea by adverse winds. The plan is as follows :—A steamer is placed on the station, and takes a cruise ; if in that cruise she discovers a vessel wind-bound, the letters are transferred to the care of the steamer, which brings them into port, when they are forwarded to London.—*Hants Advertiser*. [Some packets have been detained by easterly winds as far as 10° and 12° west longitude.—Ed. N.M.]

FALMOUTH STATION.		Last Packets sailed.	Next Packets due.
Lisbon	} Every Saturday	H.M.B. Linnet Feb. 14	H.M.B. Ranger, [Feb. 21.
Madeira			
Spain			
Gibraltar	} First Day of every month	H.M.St. Volcano Feb.5	H.M.St. Blazer, [Feb. 28
{ Malta, Greece,			
{ Corfu, Egypt, and India			
Madeira	} First Tuesday in each month	H.M.B. Star Feb. 14.	H.M.B. Seagull Mar 25
Brazil and B. Ayres			
America	} First Wednes. do.	H.M.B. Skylark Feb 4.	H.M.B. Sheldrake [Mar. 12.
{ Jamaica, Leewrd.			
{ Islands, & Hayti	} First Day in every month	H.M.B. Express Feb. 3	Lord Melville Mar. 2.
La Guayra			
Mexico & Havannah	} 15th ditto	H.M.B. Pigeon Feb. 14	H.M.B. Lapwing [Mar. 2.
{ Jamaica, Leewrd.			
{ Islands, & Hayti	} 15th ditto	H.M.B. Goldfinch Feb 17	H.M.B. Reindeer [Mar. 11
Carthagena			

STEAM COMMUNICATION WITH INDIA ROUND THE CAPE.—The Honourable East India Company have lately built two first-class armed steam-vessels, for the service of the Bombay marine. These vessels have been completely equipped in this country, and are to make the voyage out under steam. The directors might have sent them to their destination at much less expense under canvass, but from the laudable desire to ascertain how much the voyage may be shortened by steam, they have provided coal at five intermediate stations, and made the best arrangements to prevent delay in taking them in.

The *Atalanta*, commanded by Captain Campbell, sailed from Falmouth on the 29th of December, and will touch at Madeira, Cape de Verdes, Fernando Po, the Cape, Mauritius, Maldivia Islands, thence to Bombay. She took out the following passengers : Moulvee Mahomed Ismael Khan, ambassador from the king of Oude ; E. Sterling, Esq., B.C.S. ; Lieut. Campbell, H.M.S. ; and Mr. Kemball, cadet, for Bombay. Mr. Durham, assistant-surgeon ; Mr. J. Williams, assistant-surgeon ; for Madras. Mr. Saunders, Captain Miller, H.M.S., with Messrs. Hamilton, Ward, and Wright, for the Cape.

The *Atalanta* is 630 tons burthen, built at Blackwall, by Messrs. Wigram and Green ; her engines are of 210-horse power, by Messrs. Maudslay and Field.

The *Berenice* is of 680 tons, built in the Clyde by Messrs. Wood ; her engines are of 230-horse power, by Mr. Robert Napier, of Glasgow. The *Berenice* is now in the East India export dock, taking in stores, &c. for the voyage, and will sail for India in about a month.

By the following extract from the *Shipping Gazette* of the 13th February, it will be seen, that as the distance from Falmouth to Teneriffe is about 1500 miles, the *Atalanta* has averaged nearly 8 miles per hour, corresponding pretty nearly with our observation at p. 111 :

“ *Atalanta Steamer*.—By a letter from one of the passengers, we learn that the *Atalanta* steamer, Campbell, from Falmouth, 29th December, to Bombay, arrived at Teneriffe 6th January, under the most unfavourable combination of winds and high seas ; the starboard paddle-box was partially injured. The vessel stood her work capitally,

and carried herself throughout the stress of weather to which she was exposed with great firmness. It was supposed she would not average less than eight miles an hour. She sailed again on the 10th of January."

STEAM NAVIGATION TO AMERICA.—The time is fast approaching when the famous prophecy of the Rev. Dr. Dionysius Lardner, delivered in Dublin, and re-delivered in Bristol, "that it was as easy to go to the moon, as to go direct from a port in England to New York," will be tested; and as the time approaches for the trial, it may not be amiss to remind our readers of the preparations that are making for it.

There are two vessels at present building to run direct from Bristol and London to New York. The Great Western Ship Company's vessel is building at Bristol, and is of the following dimensions and power :

Length between Perpendiculars	216 feet.
Beam	35 do.
Depth in Hold	22 do.

The engines are 400-horse power, having cylinders 73 inches diameter, and seven feet stroke.

This noble vessel is expected to be ready in the course of the approaching summer, and will most probably make her first voyage in August next. She is intended to carry twenty-five days' fuel—a quantity quite sufficient to ensure the regular performance of the voyage in all weathers.

The British and American Steam-Navigation Company, whose head-quarters are in London, have contracted with Messrs. Curling, Young, and Co. of Limehouse, for a vessel of 1,795 tons, builders' measurement, and of the following dimensions and power :—

Length between Perpendiculars	235 feet.
Beam	40 do.
Depth	27 do.

to have engines of 460-horse power, having cylinders 76 inches in diameter, and seven feet stroke. The engines are fitted to work either with or without Hall's condenser, at the option of the engineer. This magnificent vessel, the largest steam-vessel ever yet propelled, will have capacity for twenty-five days' fuel, 800 tons of measurement goods, and 500 passengers.

We sincerely wish both the Bristol vessel and the London one all manner of success; and when we reflect on the immense intercourse between this country, the United States, and Canada—sixty thousand people having landed at New York from the 1st January to 1st Sept., and 27,000 in Quebec last year—the increase that will naturally take place when the passage is shortened to fifteen days, instead of thirty-seven, the present outward average passage of the New York packet ships, we do not think that any, out of the numerous plans before the public, hold out stronger inducements to the capitalist than such undertakings.

It is difficult to calculate the national benefit that will accrue to both countries by the establishment of steam-communication between them—the one with an overflowing population, the other with inex-

haustible reserves of fertile lands—the one the greatest manufacturing, the other the most extensive producing country, in the world—both talking the same language, and allied by blood, religion, and feeling, with one another. Thus much, we may affirm, that it will greatly improve both countries, and render perpetual the peace that now so happily exists between them.

WYRE HARBOUR.—At a meeting of the Council of the Borough of Preston, in the county of Lancaster, held in the Council Chamber of the Town-Hall, on Wednesday the 9th Nov., 1836, it was resolved unanimously that the thanks of the Corporation be given to Captain Edward Belcher, of the Royal Navy, for the liberal manner in which he assisted the surveyor and engineer employed by the corporation, and also for his judicious remarks on the various plans for improving the navigation of the river Ribble, and also for his own valuable suggestions for that purpose. And it was ordered that a copy of the foregoing resolution, engrossed on vellum, signed by the mayor, and sealed with the common seal, should be forthwith transmitted to Capt. Belcher, in order that he might receive the same before his departure from England, on the important service to which he had been appointed by the Lords of the Admiralty.

MOUNTS BAY BREAKWATER.—We have already expressed our opinion of this undertaking, and we have pleasure in recording the following letters which the Directors have received on the subject. They have been honoured with a most gracious communication from his Majesty, in acknowledgment of a plan of the Breakwater, which they had respectfully and gratefully presented for his Majesty's acceptance.

This gratifying proof of the interest which their royal patron takes in their success, cannot fail to give the highest satisfaction, whilst the recollection of his Majesty's being an excellent *professional* judge of the merits of this truly national work, better enables us to appreciate the opinion so condescendingly expressed of its great importance and utility.

(Copy.)

Whitehall, Jan. 18, 1837.

Sir,—I am directed by Lord John Russell to transmit to you the enclosed copy of a letter, addressed to his Lordship by Sir Herbert Taylor, acknowledging, by his Majesty's command, the receipt of the plan of the Mount's-bay breakwater, which you transmitted to Lord John Russell, to be submitted to the king, as patron of that undertaking.

I have the honour to be, Sir, your obedient servant,

C. J. W. Ellis, Esq., &c., &c.,

F. MAULE.

(Copy.)

Brighton, January 11, 1837.

My Dear Lord,—I have had the honour to receive and to submit to the king, your Lordship's letter of the 8th instant, and that enclosed from Mr. Carteret Ellis, and the plan which the directors of the Mount's-bay Breakwater Company have desired to offer to his Majesty, as patron of that important and useful undertaking.

The king requests your Lordship will express, through Mr. Carteret Ellis, to the directors, his sense of their attention, and assure them, that he has received with great satisfaction the plan, which appears to him admirably executed.

I have, &c.

(Signed)

H. TAYLOR.

The Lord John Russell, &c.

In page 558 of our last volume, will be found the gracious approval of the Duchess of Kent, and we now insert that of H.R.H. the Duke of Sussex.

(Copy.)

Newstead Abbey, Jan. 12.

Sir,—I am commanded by his Royal Highness the Duke of Sussex to acknowledge the receipt of, and thank you and the Board of Directors of the Truro, Redruth, and Penzance Railway, &c., for your plan of that national work which they propose to execute, and which has his Royal Highness's best wishes for its success.

I have the honour to be, Sir, your most obedient servant,

H. JOHN SPENCER CHURCHILL.

To C. J. W. Ellis, Esq., Chairman, &c. &c. &c.

ST. GEORGE'S HARBOUR,—*North Wales*.—We find that a meeting has recently been held at Chester for the purpose of carrying into effect the construction of the harbour which has been proposed at Ormes Head, to be called St. George's Harbour. The proceedings of this meeting appear to have been principally occupied in the consideration of the line of railroad with which we have nothing to do. Our purpose lies with ships and seamen, and, with their safety and welfare at heart, we rejoice to see by the following resolutions that the harbour is in a fair way of being established. After various resolutions in which the railway subject was disposed of it was proposed by Rev. Prebendary Barlow, seconded by Mr. P. S. Humberston, and carried unanimously—

“That the want of a harbour of refuge on the North Welsh Coast has long been severely felt by the shipping and commercial interest of the country; and, as it appears by the report of the committee on shipwrecks, appointed by the House of Commons during the last session, there is such a deficiency of a refuge harbour in St. George's Channel, and that in the year 1833, 4, and 5, no less than 405 lives were lost by shipwrecks on that coast, and 207 vessels, the cargoes of which were calculated to amount to £1,035,000; and in the year 1836, no less than thirty-nine vessels were seen on shore at one time, twenty of which, with their cargoes, were totally lost. The report of the before-named committee, as well as the committee of the Commons on Refuge Harbours, strongly recommend the Great Ormshead Bay as suitable to that object. It was also

“Proposed by Mr. W. Seller, seconded by R. Eyton, Esq., Flint, and carried with only one dissentient voice—

“Therefore this meeting pledge themselves to give this project the most ardent advocacy, and to forward its interests in Parliament by presenting petitions in favour of it to both Houses of Parliament.”

BRIXHAM HARBOUR.—Among the numerous projects for the construction of pier harbours which are now going forward, we find one just proposed at Brixham, in Devonshire. We have before us the plan proposed by Mr. Rendel, the engineer, and wishing most cordially as we do, on public grounds, that such designs may succeed, we would strongly recommend the Lords of the Manor at Brixham, while they are about it, not to exclude the space they have shut out of their harbour between the back of the proposed eastern pier and Shoalstone Point. It is from this point in our opinion the pier should run in about a magnetic N.N.W. direction, by which arrangement they will not have to regret hereafter the loss of space amounting to a square quarter of a mile, which would have nearly doubled the area of their harbour; and while this advantage would be gained, we doubt whether there would be sufficient additional expense to deserve a moment's consideration, whereas if the present plan be pursued, an advantage will be lost which can never be regained.

PADSTOW BREAKWATER.—We congratulate the inhabitants of Padstow, on the following (to them) important information:—We understand that Mr. George Ross, who visited Padstow about a month ago to survey the harbour, and Sir Samuel B. Whalley, have sent instructions to Mr. Tredwen, of that place, to bore the Dunbar sand in a line for the proposed breakwater, for the purpose of ascertaining the depth of the sand, and the natural soil of the river; and that the work was commenced, with proper men and instruments, on the 9th instant. The first hole which was made about 2,450 feet in a line from Trebetherick with the third capstan, showed the sand to be 24 feet deep, without any impediment; the second in the centre between the two shores, 20 feet; and the third, 200 feet from the rocks on the eastern shore, 10 feet,—the sand of each of these places resting on blue clay and pebbles. From the shifting of the sand at different times it has been discovered that the bed of the river, for five miles from the entrance, is from three to four fathoms deep at low water, without containing a stone worthy of the name of a rock.

THE ICE-BOUND WHALERS.—The following answer has been sent to the Tay and Dundee company on the subject of the premiums offered by Government in reference to some points in the letter which appeared in our last.

“Treasury Chambers, January, 1837.

“Sir,—Having laid before the lords commissioners of his Majesty's treasury the minutes of the meeting of the general committee of the Tay and Dundee whale-fishing company, held on the 18th instant, enclosed in your letter of that date, I am commanded by their lordships to acquaint you for the information of the committee, that, with regard to the first point mentioned in these minutes,—viz., the time fixed for the departure of the ships, it was the wish of my lords, by the offer of the reward, and by fixing that time, to ensure the sailing of the ships at the earliest possible period; that my lords had reason to believe that parties were prepared to sail previous to the 5th February, the time fixed by this board; but that in case it should happen

that five ships should not sail before the 5th February, this board will not be unwilling to consider the cases of the first five that shall sail, and the difficulties and reasons which may have prevented them from adhering strictly to the limits laid down by the board. But my lords can give no pledge to any parties except those entitled under their letter; and my lords cannot agree to extend the limits to the 20th February.

“With respect to the second point, whether the contingent bounties are confined to the ships sailing previously to the 5th February, my lords desire to be understood that they are not limited to ships sailing before the 5th February, but will be given without reference to the time of sailing.

“Lastly, with respect to the question as to the amount of the allowance for demurrage, which my lords will be prepared to grant in case it may prove necessary for any ship relieving any of the missing whalers to accompany them home in consequence of their distressed condition, my lords will be prepared to pay twice the amount of the wages and victualling of the crew of such ship for the length of her voyage home and return to Cape Farewell.

“I am, Sir, your obedient servant,
“F. BARING.”

EXTRACTS.—The *Sappho*, 16, new brig, constructed according to the Surveyor's principles, was launched from Plymouth dockyard on Friday se'nnight. She is a beautiful vessel, and went off in gallant style, amidst the cheers of a number of spectators. Length on gun deck, 100 ft. 6 in., extreme breadth 32ft. 4 in., depth in hold 15 ft. 2 in., and burthen 428 tons. It is expected she will be shortly commissioned.

Vice-Admiral Sir Thomas Hardy, G.C.B., &c., and Governor of Greenwich Hospital, has just been elected one of the elder brethren of Trinity House. A sumptuous dinner (Marquess Camden president) was given on the occasion.

The thanks of the Cortes, on Vellum, and inclosed in a silver case, have been conveyed to Lord John Hay, for the assistance he has afforded the Queen's cause; and Captain Maitland, of the *Tweed*, has been dispatched to Madrid to acknowledge its receipt.

Admiral Sampson Edwards has contributed £50 to the building fund of the Royal Naval School, Commander Richard Edwards has also given £20, and Lieutenant Sampson Edwards £10.

We have letters from Ascension, dated 15th Dec., by which it appears that the *Dolphin*, a new vessel of Sir Wm. Symond's construction, Lieut. Com. Roberts, had, on several occasions, beaten the *Waterwitch* in the most decided manner, weathering upon her in an extraordinary degree. The *Columbine* also had beaten her upon a trial; and the latter vessel had captured one of the fastest slavers on the coast, after an interesting chase.

WRECKS OF BRITISH SHIPPING. We observe by the following, that this subject is attracting attention in another quarter. Our

present number contains a list of nearly a hundred, the foregoing, thirty, and we have a tolerable quantity for our next. This is something for the company of merchants to work on.

“At a general meeting of the company of merchants, held at Edinburgh, this thirtieth day of January, 1837, Archibald Thompson, Esq., master of the company, in the chair,

“The following resolutions, on the motion of Mr. Alexander Jamieson, seconded by Mr. Wm. Oliphant, were unanimously agreed to :—

“1. That this company view with deep regret the numerous shipwrecks which occur annually among the mercantile navy of Great Britain, and the consequent loss of human life and destruction of property arising therefrom.

“2. That this company observe that this important subject formed matter of enquiry before a special committee of the House of Commons during the last session of parliament, with a view to trace its cause, and to consider of a remedy ; and it is with extreme pain that this company notice, from the report of that committee, that the loss of human life, arising from shipwrecks in the mercantile marine, is estimated at not less than one thousand persons annually, while the value of property lost from the same cause amounts to nearly three millions sterling per annum.

“3. That the evidence adduced before the committee of parliament shows, that this company believe it to be entirely to full credit, that the numerous shipwrecks above mentioned are occasioned, in a great degree, by the dangerous and defective construction of merchant ships, the inadequacy of their equipments, and the very unsafe state in which they are often sent to sea ; and to a certain extent, too, by the operation of marine insurance.

“4. That in the opinion of this company the system followed in regulating marine insurances, by which the premiums of insurance, in many cases, bear no adequate proportion to the construction and safety of the vessel insured, leads to the building of ships on a cheap and defective model, whereby they are quite unfit to withstand the violence of heavy gales, or to encounter for any time, however short, the trying effects of injury from shoals or sunken rocks.

“5. That, without meaning to question the utility of sea insurance, when charged in the proportion to the risk and strength of the vessel, this company have much cause to fear that the facility with which marine insurances can be effected, without reference to the actual strength and build of the vessel, leads in practice to the construction of many ships of a description which, under other circumstances, would be considered quite unfit for service.

“6. That this company, therefore, shall cordially unite with the other public bodies in bringing this important matter again under the consideration of parliament, with a view to obtain the introduction of such legislative enactments as may be best calculated to elevate and improve the general character of the British mercantile marine, and to place it in such a state of safety and efficiency as to make its ships more perfect in structure, and to ensure their being placed under the guidance of properly qualified officers.

“Extracted from the Minutes of the Company by
(Signed) “WALTER JOLLIE, Conjt. Clerk.”

WRECKS OF BRITISH SHIPPING—FROM THE SHIPPING GAZETTE, 1857.

[Continued from page 131.]

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
Abeona		London	Quebec	Miramichi	8 Nov.	
Albion	Thompson	Quebec	Gloucester	Seen waterlogd	25 Dec.	
Americus	Heron	London	Blyth	Off Hantcliff	6 Jan.	4 of crew saved.
Ark, of North Shields					28 Dec.	Crew saved, run foul of.
126 Aurora		Supposed	foundered	China Sea	23 July	
Barton	Anwyl	Bombado		St. Helena Brkrs.	23 Dec.	
Bleasling, schooner	Earl	Swansea	Salscombe	Off Mumbles	13 Jan.	
Brig, English built,	waterlogged, and	abandoned,	by Florian, S ^E N.	36°W.		
Brothers	Stevenson	London	Constantnopl.	Off C. St. Vincent	2 Jan.	Abandoned.
140 Caleb	Goodwin			Vera Cruz	Dec.	
Calcutta	Mauger	Of Jersey		Licata	25 Dec.	Five drowned.
Cambrian	Williams	Liverpool		Run down by the	Antioch	27th Dec.
Canton	Bellamy	Boston	Almwh	Lenurey	8 Dec.	
Charles	Randle	Liverpool	Newcastle	Dublin B.	24 Dec.	Upsat and sunk.
145 Charlotte	Of Sunderland			Lowestoffe	28 Dec.	
Christopher, ship	Kay	Quebec	London	Abandoned	Dec.	Crew saved. 48 N. 35 W.
Concordia		Bremen	Gloucester	C. La Hogue	30 Dec.	
Cornelia	James	Cardiff		Boulogne		Crew saved.
Countess of Roden		Whitehaven	Newry	Newry	26 Dec.	
Crown, of Dundee,	Schooner	Rotterdam		Goodwin	23 Dec.	Crew saved.
Dixon	Slater	St. John's, N.B.		near Dymchurch	27 Dec.	Master lost.
Dorothy Cook	Gray	Hamburg	London	Cork Sand	Dec.	Crew saved.
Dover	Curtis	Abandoned	at sea.			
Duncan	Gibb	Quebec	Dublin	48 N. 30 W.	15 saved	by Niagara, 3 lost.
145 Eagle	Morris	Stockton	Dundee	Off Berwick	13 Jan.	
Edward Charlton	Morton	Llanely	London	Bartholm. Ledge	25 Dec.	Crew saved.
Elizabeth, schooner	Foundered			Off Dover	13 Jan.	Crew saved.
Elizabeth	Alexander	Ile of Man	Maryport	Belcarray B.	12 Jan.	Master lost.
Elizabeth	Jewell	Taragona	Liverpool	Galbrat	1 Feb.	Crew saved.
160 Faro	Shepherd	New Orleans	Liverpool	Pico	24 Nov.	Crew saved.
George Ridley	Nelson	Off Faversham		C. France	30 Dec.	
George				Shoebury-ness	31 Dec.	Crew lost.
George and Eleanor	Of Sunderland		London	Lowestoffe	28 Dec.	
Grahams, sloop	Of Perth	Holy Island		Entre, Ta	13 Jan.	Foundered.
165 Harmony		Liverpool	Belfast	Clogher Head	24 Dec.	Crew saved.
Hazard	Of Kinsale	Abandoned,	crew saved by	St. Brioux	30 Dec.	Crew saved.
Hibernia, of Jersey		Riga	Cuba	Lemon & Oser	2 Jan.	Crew saved.
H. and M., of London	Coates	Portland	London	Aband. 39N. 69W	10 Dec.	
170 Hope	Waite	Danish		Bornholm	26 Dec.	Crew saved.
Imperial	Spencer	Of Dagharty	C. Ireland	C. Ireland	12 Jan.	Crew saved.
Industry, sloop	Ferguson	Leith	Odesa	Sluclar Bay	12 Jan.	Crew saved.
Innes		Liverpool	Dundalk	Clogher Head	24 Dec.	One drowned.
Isabella, sloop	Beattie	Campeachy	Liverpool	Baliteague B.	9 Dec.	Crew saved.
James Hadden	Gasking	Miramichi	Liverpool	Aband. waterlogd.	17 Dec.	In 49 N. 28 W.
175 James Grant	Williams	Rotterdam	London	Gores	24 Dec.	Crew saved.
Jane Ayre		Cardiff	London	Off Lisard	28 Jan.	Run foul of, crew sd
Jane, of Sunderland		London	London	Off Lisard	28 Jan.	Run down, crew svd.
Jane Wood		London	Adrossan	Off Adrossan	10 Jan.	All lost.
Jean and Peggy	Brown	Girvan	Liverpool	Abandoned	28 Nov.	Crew sd. by W ^W itch
180 Jessie*	W. Taylor	Quebec	Runcorn	Formby	8 Jan.	All lost.
John	M'Cann	Of Sunderland	on shore on	Texel	21 Jan.	
John and Jane		Stern drifted		Aband. waterlogd.	25 Dec.	Crew saved.
Kirkella	Brown	St. John's	in 44 N. 12 W.		18 Jan.	by Greyhound.
185 Lady Ann	Seen abandoned	Jordan		Schooner	14 Dec.	Crew saved.
Lady Ann	Greig	Liverpool	Sligo	Cooley Point	14 Dec.	had been abandoned.
Lady Nynidd	Sterry	Rotterdam	London	Not heard of	since	23d Dec.
Lady Nelson	Henderson	Charente	London	Aband. waterlogd.	27 Dec.	
Lavinia	Seen abandoned	and waterlog-	ged in	47 N. 8 W.	30 Dec.	
190 Liberty, sloop	Watson	Wisbeach	Goole	Sunk S.	10 Jan.	Run foul of.
Lion, brig	London	Worlington	Drogheda	South Bull	24 Dec.	Crew saved.
Liverpool, brig		Miramichi	abandoned,	Dingle Bay	28 Dec.	Crew saved.
Louisa, of Plymouth	Timber ship	passed,		46 N. 20 W.	24 Nov.	
196 Margaret	Scott	Of Dumfries	London	Abandoned at sea	8 Dec.	
Mara	Deemlin	North Shields	Gunfleet	at sea	27 Jan.	Crew saved.
Marshal Blucher		Boston			25 Dec.	
Mary Hall	Weddell	Swansea	Plymouth	Near Selly	28 Dec.	Foundered.
Mary-Ann, brig	Foundered		Cork	Off Dover	29 Dec.	Crew saved.
Mary-Ann	Honduras	Lichau	Dundee	Dundee	26 Dec.	All lost.
200 Mary	M'Kenzie	Hamburgh	Goole	Sandhole	27 Dec.	Crew saved.
Mary		Newcastle	Guernsey	Swan Island	25 Dec.	One saved.
Matilda	Gibbon	St. John's	Belfast	Malbay	25 Dec.	Crew saved.
Mercator	Hurst	Olesca	Newcastle	Cross Sands	15 Jan.	Crew saved.
205 Meta	Hodson	Liverpool	Havana	At sea, foundr.	16 Jan.	Crew arr. at St. John's
Milo	Of London			Cross Sand	24 Dec.	Crew saved.
Mitre				Off Portland	24 Dec.	Five saved.
New Three Sisters	Abandoned	passed 30 Dec.	in 45 N. 48 W.	by Prince Leopold.		
Othello, of Liverpool	Cullen (schoonr.)	Liverpool	Wexford	Morriscaste	31 Dec.	Crew lost.
210 Perseverance	Burgess	Rio Janeiro	Leghorn	Monte Video	2 Nov.	Crew saved.
Queen of the Isles	Joy	London	Spurn	Off Cadiz		Crew saved.
Ranger, of Whitby	Abandoned	sinking off the			7 Jan.	
Rapid, of Whitehaven	and waterlogd.	Scalmar	abandoned		16 Dec.	in 46 N. 36 W.
Royal Adelaide	Liddell	St. John's, N.	Portsmouth	Newcombe	27 Jan.	Crew saved.
215 Sarah	Sharp	Crew saved by	Mountaineer	Abandoned	26 Dec.	Landed at Falmouth.
Seneca	Bigarease	Quebec	Sligo	I. Ennis Quay	18 Dec.	Crew saved.
Sligo	Cook	found near	Penryn		27 Dec.	
Spartan	Part of wreck	Rotterdam	Newcastle	Supposed lost	papers	found.
220 Spencer	Frezer	Not heard of	since leaving	Sydney for Sin-	capore	15th May.
Stirling Castle	Lindgard	Harlingen	Newcastle	Black Middins	28 Jan.	Crew saved.
St. Thomas	Seen abandoned	by the London	Off Saltfleet			
Success, of Lynn						

* Towed into Plymouth by H. M. ship Favourite.

THE LATE CAPTAIN HORSBURGH.—We perceive that a meeting has been lately held of the friends of the late Captain Horsburgh, at which it was resolved to erect a column to his memory. Admitting, as every one must do, the value of Capt. Horsburgh's hydrographical labours, and entertaining the same respect for his memory as his warmest admirers, it is our opinion that he has left behind him a far more honourable and lasting monument in his well-known Indian charts, and Directory, than any other which his friends can provide. Would not the funds raised for the above purpose be more *usefully* employed in enabling these works to be published at one-half their price, than in raising a useless piece of stone only to be gazed at. We think so, and so would he, if he were living.

NEW BOOKS.

THE NAVAL HISTORY OF GREAT BRITAIN.—*A New and greatly Improved Edition. By Captain Edward Pelham Brenton, R.N. Henry Colburn. London.*

WE have great pleasure in noticing the completion of this work, and in recommending it to the attention of our readers. As a naval historian, Captain Brenton has fully realized the expectations which his experience and talent had raised; and having himself been a sharer in many of the transactions he relates, he has imparted to his narrative all that vigour of comment and description which so intimate a connection with his subject is calculated to inspire. The "Naval History of Great Britain," occupying as it does so prominent a place amongst our national records, must ever render even the simple detail of its spirit-stirring events a matter of lively interest to every Englishman; but Captain Brenton had higher views than the mere detail of events, however brilliant, and in the perusal of his volumes, while we are every moment called on to participate in his enthusiastic admiration of British heroism, we are never permitted to forget the less obtrusive claims of forbearance, kindness, and compassion.

Commencing with the year 1783, the history is brought down to the present time, towards its close, giving a brief sketch of the polar, and other scientific voyages, and concluding with Captain Fitzroy's surveying expedition to the Pacific, which, after a five years' absence, returned to England in October last. In an appendix, some very admirable remarks will be found on the subject of raising men for the navy, which, while they display the patriotic solicitude of the writer, afford some very valuable suggestions to our legislators.

Captain Brenton has never permitted the *great* events of his history to obscure the modest claim of individual merit, but, as occasion offered, has brought into prominent notice those instances of personal skill and bravery which, beyond all others, are found to excite our sympathy, and stimulate our honourable emulation. To our younger naval friends, we would more especially recommend this work; they will find in it much to delight and instruct them, and they will see, in the example of the gallant author himself, as well as in others, how very possible it is to combine the firmness and courage of the hero, with the milder virtues of the enlightened christian philanthropist.

TABLES OF DUTIES for *Lights, Buoys, &c., in England, chargeable on Oversea and Coasting Vessels.* Smith and Ebbs, Tower Hill, London.

THIS is a small pamphlet, containing in about ninety pages a list of all the duties per ton collected for the buoys and lights on the English coast. These have been collated, with the permission of the Corporation of the Trinity House, from official documents, and form a useful little work, which we may safely recommend to the notice of all masters of ships.

THE ELEMENTS AND PRACTICE OF NAVAL ARCHITECTURE ; or, a Treatise on Ship-building, &c. Third Edition. With an Appendix, by Mr. John Knowles, F.R.S., &c. Simpkin and Marshall. London.

THIS is the useful and well-known work of "Steel on Ship-building," with a valuable appendix, by Mr. John Knowles, containing the modern improvements. The work contains a dictionary of all the terms employed in ship-building ; the general principles of such portions of mechanical and hydrostatical science as bear immediately on the subject ; and statements of numerous experiments made at different times to determine the resistance of fluids. Detailed accounts are given of the construction of vessels, with extensive tables of scantling for vessels of all kinds, both in the Royal Navy and the merchant service. Several interesting relations of the processes employed for the recovering of ships that have been stranded, or injured, will also be found in the work.

In the appendix, which is the most important part of the work, as most of the matters contained in the other part may be gathered from different quarters, will be found a full account of the diagonal method of construction, which, after several experiments, was first introduced in a complete form by Sir Robert Seppings, in the year 1810. An interesting account is also given of experiments made on weak or decayed ships, to establish by direct trial the utility of this system, and the success of which led to its general approval. The editor gives a portion of the Memoir "*De la Structure des Vaisseaux Anglais,*" of 1817, in which M. Dupin claims for France the honour of this great improvement in ship-building. On this we think with Mr. Knowles, that although the importance of the diagonal principle might (as it no doubt did) suggest itself to many individuals, yet that they did not know how to apply it. This conclusion seems definitively established by the success of the attempts not having been so manifest as to lead to any further prosecution of the design ; and, that the proposers of abortive projects have no right to share in the credit that is awarded to him whose plan is the only successful one.

A folio volume of plates accompanies the work, besides several others in the book itself, rendering it altogether one which no one interested at all in naval architecture should be without.

THE NATURALIST'S LIBRARY.—*Conducted by Sir William Jardine, Bart. Mammalia, VOL. VI. On the ordinary Cetacea, or Whales.—Edinburgh, Lizars; London, Highley, Fleet street.*

WE have often regretted that such useful little volumes as these are not more generally found among our nautical friends, and we can attribute it to no other reason than their being unknown to them. Assuredly the one before us abounds with information not only useful but interesting, and particularly so to those whose pursuits place them among the haunts of that wonderful tribe of animated nature which it describes, but about which little is yet known. It is decidedly a reproach to sailors that this should be the case, that the numerous opportunities which they have of assisting the naturalist, should be allowed to pass unheeded. But let us hope that by the diffusion of these volumes those opportunities may not remain long unredeemed. The volume before us is illustrated with numerous well executed drawings, and the description of the animals receives additional interest from the various anecdotes introduced concerning their extraordinary habits. No one who has any turn for such pursuits, going to sea, should be without it.

AN ACCOUNT OF THE WAR IN PORTUGAL, *between Don Pedro and Don Miguel; by Admiral Charles Napier. 2 Vols. Boone, New Bond Street.*

ADMIRAL Napier, if he has done a service to Portugal, has done no less service to the history of that country by recording the late great events concerning it, in which he has taken so prominent a part. He has given a plain straight forward description, (and therefore the more valuable,) of the stirring scenes of the late war, from the beginning to the end of it; and one in which those of our countrymen who may be hereafter inclined to join in such civil warfare, will find many a lesson, which, if they will, *they may read to their own advantage.* The opportunities which the high situation of the gallant author gave him of obtaining his information must always render this work one of sterling value; and the recital of those feats of heroism which such scenes always afford, imparts an interest to it which makes it acceptable to every one.

CAPTAIN MARRYAT'S NOVELS.

IN our February number, we gave our readers a specimen of this justly celebrated author's last novel, "Mr. Midshipman Easy," the most popular, and in our opinion the best, he has written. We may perhaps snatch another or two hereafter, if we can find room, from the same source. The publishers are commencing an illustrated edition of all Captain Marryat's works—a measure which we have no doubt will succeed, if the artist comes *within range* of the author's own inimitable scenes. The two first volumes of "Peter Simple" are before us. We shall speak of their merits as each work is completed. We wish the gallant author would make his works more welcome than they are in the drawing-room.

NEW CHARTS.

WEST COAST OF AFRICA.—*Sheet V. From Cape Roxo to Isles de Los. Surveyed by Capt. W. F. W. Owen, Com. E. Belcher, and Lieut. W. Arlett, 1826-34. Price 5s.*

The scale of this chart is that of eight inches to the degree of longitude which allows of considerable detail for the information of the navigator. The portion of coast it contains is one hitherto but little known, although resorted to for trade. The mouths of the rivers Cacheo, Jeba, Bolola, Componee and Nunez, as well as the channels of the Bijooga group, are elaborately sounded, and no ship going there should be without it.

MOUTH OF THE RIVER DEMERARA.—*By Commander Richard Owen, of H.M.S. Thunder. 1833.*

A sheet of half double elephant paper contains the mouth of the river on the scale of an inch and a quarter to the mile, shewing the soundings to about nine miles from it.

LITERARY HONOURS.—We perceive by a recent number of the *Comptes Rendus* of the Academy of Science at Paris, that the diploma of corresponding member of the Royal Institute of France, has been presented to Captain Francis Beaufort, R.N., F.R.S. It is well known that this is the highest literary honour which all Europe can boast, and, independent of other reasons, we rejoice to see it bestowed on one filling the scientific and truly important station of Hydrographer to the British Admiralty.

NAVAL COURTS-MARTIAL.—A court-martial has been recently held on Mr. John Shaw, Assistant-Surgeon, on board the Royal Adelaide, (flag-ship,) before Captain Charles Bayne Hodgson Ross, C.B., President; and Captains R. Thomas, San Josef; W. B. Mends, Talavera; and J. Robertson, (a) San Josef; on charges preferred against him for drunkenness and improper conduct, by Captain Sykes, of the Royal Adelaide. Mr. Shaw was assisted by Mr. Beer, solicitor, of Devonport. After hearing the witnesses for the prosecution, the prisoner made no defence, but threw himself on the mercy of the court. On the court being re-opened, the Judge Advocate, G. Eastlake, Esq., read the following sentence:—

“Having heard the evidence in support of the charges, as well as what the prisoner, Mr. John Shaw, has offered in his behalf, and very maturely and deliberately weighed and considered the same, the court is of opinion that the charges have been proved against the prisoner, and the court doth, in consequence, adjudge the said Mr. John Shaw to be dismissed his Majesty's service, and rendered incapable of ever serving again as an officer in his Majesty's service.”

A court-martial has also been held on board the Canopus, to try Mr. T. C. Ross, mate of the Nautilus, upon three charges—disobedience of orders, neglect of duty, and insubordination—preferred against him by Lieutenant-Commander Croke, of that vessel, when, after a most minute investigation, the Court decided upon the acquittal of Mr. Ross upon the whole of the charges, and the President, in an

eloquent and complimentary address to that officer returned him his sword. The Court was composed of Captains the Hon. D. P. Bouverie (President), the Hon. Joscelin Percy, S. Jackson, Sir W. Elliot, N. L. Corry, M. Kerley Fisher, and G. B. Martin; Mr. George Thorne, purser of the *Bellerophon*, officiated as Deputy Judge Advocate.—*Hampshire Advocate*.

PARTING MEMORIALS.—It is with pleasure that we record the following instances of the esteem in which officers hold each other's good qualities; and we sincerely hope that they may increase, and serve to bind together in bonds of honourable friendship all ranks of naval officers. The paragraphs are from *The Hants Telegraph* and *The West of England Conservative*:—

On 1st February the gun-room mess (midshipmen) of the *Britannia*, gave a farewell dinner to their late excellent and respected first lieutenant, Captain Watkins, whose well-merited promotion is the cause of the separation; when the ward-room officers, his mess-mates, in the *Victory* and *Britannia*, were invited to meet him. Few men have been so many years filling such a responsible situation, and given such universal satisfaction to his superiors, as well as to his subordinates, as Captain W. He started for Plymouth in the *Emerald* on the following morning, to join the *Cornwallis*, to which ship he is appointed, and we feel assured that he has quitted one post in which he was esteemed and looked up to, only in a new situation, to add additional value to the creditable estimation in which he is held in the service.

The officers of the Ordinary at Plymouth gave a farewell dinner, on board the *San Josef*, to Rear-Admiral Thomas, late captain of the Ordinary, on the 3d of February.

The *Cornwallis*, 74, Captain Sir Joshua Rowley, Bart., and *Favourite*, 18, Captain Munday, were paid off lately. Commander Ogle, of the former ship, was rowed on shore on Saturday by the midshipmen and mates, amidst the cheers of the ship's company. The gun-room officers of the *Cornwallis* gave a dinner to their gallant captain, at Whiddon's Royal Hotel, in the evening, to which the ward-room officers were invited to meet him.

On the 31st Jan. the officers of H.M.S. *Thunderer*, 84, invited their late esteemed captain, W. F. Wise, Esq., to a parting dinner, at Elliott's Royal Hotel. About thirty were present, and the utmost cordiality prevailed throughout the evening. Expressions of warm regard were interchanged; and, after the enjoyment of many hours of friendship and conviviality, they separated with regret.

The officers of the Newhaven Coast Guard District gave a grand parting dinner to Captain Grundy, on his promotion and removal. Commanders Morgan and Mayne were among the guests.

APPOINTMENTS.

[For Names of Vessels see corresponding Numbers.]

Admirals and Commanders-in-Chief.—Sheerness, Sir R. Otway: Mediterranean, the Hon. Sir R. Stopford: East Indies, Sir F. L. Maitland: West Indies, Sir Charles Paget.

Captains Superintendent.—J. Clavell, Chatham Dockyard: Sir John Louis, Bart. Woolwich Dockyard: P. Cumby, Milford Yard.

Captains.—C. Paget, 1; H. Clavell, Superintendent, Chatham Dockyard; Sir R. Grant, 14; F. Moresby, 15; Sir T. Fellowes, 16; A. Fanshawe, 40; Hon. F. Grey, Private Secretary to Lord Howick.

Commanders.—Hon. F. T. Pelham, 2; T. V. Watkins, 14; F. Harding, 18; T. Bushby, 23; G. St. Vincent King, 24; W. G. H. Wish, 25; G. A. Sainthill, 40. Captain K. B. Martin has been appointed by the trustees Harbour-master of Ramsgate, in the room of the late Captain Woolward, R.N.

Lieutenants.—Hon. S. Carnegie, 3; H. T. Laye, 4; W. H. Dore Pernaphore, Kingston, Surrey; J. R. Otway (flag) 1; Sir F. A. Nicholson, 10; R. Parry, 11; W. T. Griffiths, 5; G. G. Thomas, 17, to command; V. A. Massingbird, 18; H. Lacon, 3; J. H. Ward, 20; H. Jauncey, 21; J. M'Donnell, 26; Hon. E. Plunkett, 27; J. Holbrook, 28; E. Keane, 28; J. Mottley, 29, to command; J. C. Bynon, 19; J. H. Ward, W. H. Johnstone, 20; G. T. Gordon, 32, to command; W. Forrester, 35, to command, vice St. John, retired; G. G. M'Donald, 36; J. C. Bynon, 39; L. T. Jones, 40; J. Holbrook, 11; E. Keane, 11; A. Wakefield, 11.

Masters.—W. Forbes (act.) 18; E. J. P. Pearn, 3; J. Henderson, Chatham Yard.

Surgeons.—P. Suther, 6; J. W. Reid, 18; J. Sinclair, M.D., 30.

Pursers.—A. Frame, 3; M. C. Thornton, 18; T. Woodman, Secretary to Vice-Adm. Hon. Sir Charles Paget.

Chaplain.—R. E. Kitson, 40.

Mates.—T. H. Lysaght (coll.) 5; T. L. Prevost, 8; G. Moyle, 20; R. Robertson, 3; C. C. Forsyth, 18; M. Knox, 3; J. Ramsay, 37; C. G. Phillips, 1.

Second Masters.—R. Stokes, 3; C. G. Phillips, 19.

Assistant Surgeons.—P. Reilly, 5; W. M'Gill, 22; J. G. Lyall, 31; J. Read, 33; P. Reilly, 18; W. H. Forster, 5.

Midshipman.—A. P. Green, 22.

Volunteers, 1st Class.—F. Lapidge, 3; W. Smith, 7; T. P. Coode, 4; W. Hodges, (coll.) 12; J. Corbett, 13; F. P. Warren, (coll.) 18; F. O'Reilly, (coll.) 18; W. F. F. Jackson, 12; T. Gresham, (coll.) 38.

Boatswains.—E. Aldridge, 3; T. Carpenter, 18; W. Nichols, 34.

Carpenters.—D. Pease, 3; W. Dowe, 18.

Gunners.—J. Lawyer, 9; J. Connor, 3; J. Kelly, 18.

[Vessels' Names to whom Officers are Appointed.]

1 Howe, Flag of	11 Coast Guard.	20 Excellent.	31 San Joscif.
Sir R. Otway.	12 Samarang.	21 Snake.	32 Comet.
2 Tweed.	13 Carysfort.	22 Griffon.	33 Flamer.
3 North Star.	14 Cornwallis, flag	23 Wanderer.	34 Phoenix.
4 Stag.	of Hon. Sir C.	24 Champion.	35 Lyra.
5 Britannia.	Paget.	25 Gannet.	36 Pantaloon.
6 Victory.	15 Pembroke.	26 Royal George, yct.	37 Rodney.
7 Bellerophon.	16 Vanguard.	27 Royalist.	38 Dido.
8 Favorite.	17 Pantaloon.	28 Coast Guard.	39 Talavera.
9 Falcon.	18 Pelorus.	29 Speedy.	40 Princ'ss Charlotte
10 Trincolo.	19 Talavera.	30 Inconstant.	41 Cornwallis.

Births.

At Worthing, on the 4th Feb., the lady of Arthur Savage, Esq., Surgeon, R.N., of a daughter.

On the 29th Jan., at Rose Lodge, Orierton, Pembrokeshire, the lady of Mr. W. E. A. King, R.N., of a daughter.

On the 25th of January, at Cork, the lady of Lieut. Tracy, R.N., of a son.

At Kingston, on the 27th of November, Mrs. Lieut. Taylor, R.N., of a daughter.

Marriages.

On the 1st Feb., at Kingston church, Lieut. T. B. Brown, R.N., eldest son of Capt. T. Brown, R.N., to Louisa, eldest

daughter of the late Peter Breton, Esq., of Calcutta.

At Stonehouse chapel, by the Rev. Mr. Patey, Mr. Edward Manicom, of Stoke, to Miss Mary Holland, niece of Mr. Thomas Clarke, R.N., of Devonport.

On the 3d Feb., at Walmer, R. J. Emmerson, Esq., of Sandwich, to Eliza Ann, eldest daughter of Captain Harvey, R.N.

At St. Mary's church, Athlone, Rear-Admiral the Hon. William Le Poer Trench, of St. Clerans, county Galway, to Margaret, relict of the late Arthur Hadcock, Esq. of Belfast, and niece to Viscount Castlemaine.

Deaths.

Feb. 8, at Exmouth, of influenza, Admiral Sir Manley Dixon, K.C.B., aged 80.

On the 23d Jan., at Kingston Crescent, Commander Stow, R.N., aged 34.

On the 24th Jan., Lieut. John Levett, R.N., (1782,) aged 81 years.

On the 3d Feb., at Guernsey, Lieut. W. Truss, R.N. (1809.)

In North-street, Portsea, Mr. James Franklyn, Master, R.N.

At Bath, on the 22nd Jan., in the 75th year of his age, Richard Dacres, Esq., G.C.H., Vice Admiral of the Red.

At Brighton, Jane, wife of Adml. Sir E. Codrington, G.C.B.

On the 23d Jan., at Lambeth, in the 76th year of his age, Caryer Vickery, Esq., surgeon in the Royal Navy.

Jan. 24, in London-street, Fitzroy-square, Jane, the wife of Commander Weld, R.N.

At Torpoint, Lieut. Blyth, R.N., aged 64.

At her lodgings, in Chapel-street, Devonport, Mrs. King, wife of D. King, M.D., Esq., Surgeon, R.N.

At his residence, Torpoint, in the 77th year of his age, Samuel Crowley, Esq., Purser, R.N.

On the 1st Feb., aged 73, Lieut. Obadiah Newell, (1781,) one of the Lieutenants of the Naval Hospital, at Plymouth.

At Malta, on the 26th of December, Edward Augustus, the son of Capt. Down, R.N., Midshipman of H.M.S. Vanguard.

On the 3rd Feb. at his residence in Marlborough terrace, aged 70, Com. Southcott, R.N. He was one of the few surviving officers of the *Hermine* frigate. The Bethel Institution loses in him one of its most indefatigable supporters.

On the 31st Jan., at the residence of her nephew, Alexander Thompson, Esq., R.N., Forton Road, near Gosport, Mrs. Elizabeth Masters, sister of the Rev. W. Masters, Rector of Sparshott near Winchester, aged 84 years.

Jan. 23d, at the coast guard station, Bognor, Sussex, Ann, the wife of Lieut. W. N. Boyce, R.N.

At Southsea, on the 20th Jan., of influenza, the infant son of Lieut. Charles Holbrook, R.N.

On Jan. the 15th, at his apartments, No. 5, Charles-street, Grosvenor-square, Frank Upton, Esq., aged 26, the only son of the late Clotworthy Upton, Captain, R.N., and a Commissioner of his Majesty's dock-yard, Trincomalee, in the island of Ceylon.

In Haslar hospital, aged 52, Mr. John Restarick, late carpenter of H.M.S. Malta.

Jan. 21st, at the coast guard station, Chidcock, Lieut. John Pyne, R.N., aged 38 years.

On the 22nd Jan., in London, Captain Edgecumbe, of the Royal Navy, (1807,) and of Edgecumbe, in the county of Devon.

At her house, in York-street, Gosport, Mrs. Brown, relict of the late Mr. Brown, Surgeon, R.N.

At Gosport, Mr. T. Mc. Cormick, R.N.

In London, Kate, wife of Captain John Filmore, R.N.

At Campbelton, N.B., of influenza, aged 80, Mrs. Morris, widow of the late Capt. G. Morris, R.N.

Lately, in Hampton Buildings, Mrs. Wolfe, aged 52, widow of the late Capt. George Wolfe, R.N.

At the Grove, Kentish Town, Smithson Waller, Esq., Purser, R.N.

On the 29th Jan. at Ramsgate, R. Kent, Esq., M.D., for many years a surgeon in the Royal Navy, aged 79.

At Chester, in St. Ann's, Jamaica, on the 18th Jan., Charles James Hall, Esq., lieutenant in his Majesty's Navy, and a Magistrate of that parish.

At Stoke, near Devonport, on the 1st Feb., Mrs. Mould, widow of the late Capt. Mould, R.N.

At Devonport, Mrs. Mary Cuppage, widow of the late Lieut. Hugh Cuppage, R.N.

At Devonport, Miss Birkhead, sister of Commander H. H. Birkhead, R.N.

On 12th Feb., of the prevailing epidemic, at his house, in Princess-street, Devonport, aged 70, Commander Henry Hutchins Birkhead, R.N.

Lately, at Portland-place, Stoke, after a long illness, Mrs. Wharton, wife of Lieut. John F. Wharton, R.N.

On the 30th of January, at her house, in Cold Harbour, Gosport, Mrs. Hunter, aged 72, relict of the late Mr. Hunter, master, R.N.

Jan. 15, at Dover, W. Furk Greville, Esq., captain, R. N., aged upwards of 80.

On the 11th Oct. last, at the Cape of Good Hope, Mr. Edward Lott, master, R.N., (1815), aged 49.

At Alverstoke, Jan. 22nd, Miss Grumly, daughter of the late Captain Grumly, R.N.

On the 18th Jan., at Jersey, Com. Edward Kelly, (1828), aged 56.

At Poole, Mr. William Price, R.N., aged 94. He was the oldest master in the navy, and had been an officer in the service for 60 years.

On the 17th Jan., at Chatham Hospital, Lieutenant William Coyde, R.N., aged 32.

On the 18th Jan., in Thomas-street, Portsmouth, Mrs. Hellard, wife of Joseph Hellard, Esq., commander, R. N., aged 62.

Of influenza, at his house, Denmark Cottage, Tamerton, F. Sparrow, Esq., lieutenant, R.N.

On the 4th Feb., at her house, St. Peter's-street, Canterbury, in her 89th year, Elizabeth, widow of John Stephens, Esq., commander, R.N.

At Cheshunt, Herts, Lieut. E. J. Armstrong, R.N., in his 39th year.

Lately, at Fort Erie, Upper Canada, Mr. George Colls, surgeon, R.N. (1814.)

Jan. 10, at Boughton Malherbe, Christian, the wife of D. Weir, Esq., master, R.N.

At Chatham Dockyard, on the 17th Jan., Mr. Alexander Louthean, master attendant.

On the 5th Feb., Lieut. John Mawdsley, R.N.

In Hamoaze, Mr. Hooper, carpenter, of his Majesty's ship Thunderer.

At Chester, in St. Ann's, Jamaica, Charles James Hall, Esq., lieutenant, R.N., and a magistrate of that parish.

Lately, in London, Commander R. Tookey, R.N. (1796.)

Recently, in Dorset-place, Lucretia, widow of the late Admiral C. P. Hamilton.

METEOROLOGICAL REGISTER,

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

JANUARY, 1837.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	Su.	In. Dec. 30.52	In. Dec. 30.51	28	33	27	33	N.	N.	3	3	Bcm.	Bcm.
2	M.	30.35	30.34	21	32	20	38	S.W.	S.W.	2	2	Bcm.	Of
3	Tu.	30.30	30.27	35	39	33	41	S.W.	N.W.	2	2	Bc.	O.
4	W.	30.33	30.32	36	41	34	42	W.	S.W.	1	2	O.	O.
5	Th.	30.04	29.96	35	39	33	41	S.	S.W.	1	2	Og.	O.
6	F.	29.63	29.60	46	48	35	49	S.W.	S.E.	7	7	Oqr(2)	Bcp (4)
7	S.	29.62	29.73	39	44	38	44	S.W.	S.W.	6	6	Bc.	B.
8	Su.	30.25	30.29	35	35	32	38	S.W.	S.W.	2	2	B.	B.
9	M.	30.20	30.14	44	48	35	50	S.W.	S.W.	5	6	Oq.	Oq.
10	Tu.	29.73	29.70	45	50	46	50	S.W.	S.W.	8	6	Oqr(1)	Oq(3)
11	W.	30.10	30.12	28	33	27	35	N.W.	S.W.	3	3	B.	Bcm.
12	Th.	30.10	29.94	32	36	28	37	S.	N.W.	3	4	O.	Os(3)
13	F.	29.44	29.33	46	48	33	49	S.W.	S.W.	6	6	Oqr(2)	Oqr(3)
14	S.	29.92	30.05	36	38	34	38	N.W.	S.W.	5	6	Bcq.	Bcq.
15	Su.	30.40	30.40	35	36	32	37	N.E.	S.W.	5	4	Bc.	Bc.
16	M.	30.32	30.28	32	36	30	37	W.	N.E.	1	1	Ofs(2)	Ofs(3)
17	Tu.	30.27	30.23	36	40	34	42	S.W.	W.	1	1	Gfd(2)	Gfd(2)
18	W.	30.14	30.06	37	37	36	38	N.	S.W.	1	1	Ofg.	Ogd(3)
19	Th.	29.91	29.82	34	36	33	37	N.E.	N.	2	2	Qod(2)	Qod(3)
20	F.	29.72	29.66	33	35	33	35	N.E.	N.E.	2	2	Ogds(2)	Ogds(3)
21	S.	29.64	29.58	34	42	32	44	S.W.	N.E.	1	2	O.	O.
22	Su.	29.43	29.35	44	50	35	51	S.	S.W.	6	6	Gor(1)(2)	Bcm.
23	M.	29.41	29.36	47	51	45	51	S.	S.W.	6	5	Oqr(1)	Od.(3)
24	Tu.	29.55	29.58	48	50	44	50	S.W.	S.W.	3	4	Bcm.	Or(4)
25	W.	29.57	29.61	45	45	43	47	S.	S.W.	2	2	Or(1)(2)	Or(4)
26	Th.	29.56	29.56	41	40	41	42	E.	S.	4	6	Oqqr(1)(2)	Oq.
27	F.	29.74	29.75	37	38	36	38	N.E.	N.E.	6	6	Oq.	Oqhr(4)
28	S.	29.84	29.83	34	34	33	35	N.E.	N.E.	5	5	Ods(2)	Os(3)
29	Su.	29.79	29.77	33	34	32	35	N.E.	N.E.	3	4	Os(1)	Os(3)
30	M.	29.77	29.75	35	42	28	42	S.E.	S.E.	3	3	O	Od(3)
31	Tu.	29.90	29.94	42	46	39	47	S.	S.	3	4	O	O.

JANUARY—Mean height of the Barometer=30.070 inches; Mean Temperature=38.0 degrees; Depth of Rain fallen=2.45 inches.

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

LONDON: T. STANLEY, PRINTER, WHEATSHEAF-YARD, FARRINGTON-STREET.

ORIGINAL PAPERS.

APRIL, 1837.

PORTO RICO.

We are indebted to the celebrated hydrographer Captain Zahrtmann, of the Royal Danish Navy, for the following valuable information on Porto Rico:—

On the 6th December, 1833, his Danish Majesty's sloop the *Allart*, under my command, on leaving the Bay of Mayaguez, and only a few minutes after the pilot had left the ship, touched on a shoal with thirteen feet water on it, from which point

Algarroba bore	N. 60° E.
The Battery of Puntilla	East, and
Point Guanajivo	S. 10° E.

by compass—the variation being 3½° E. The battery la Puntilla is not laid down in its true position on the plan of the bay contained in the Spanish Portulano, as is proved by the following bearings taken from the roadstead, viz.

Island Desecheo	N. 62° W.	}	by compass.
Point la Cadena	N. 39 W.		
Point Algarroba	N. 27 W.		
Battery la Puntilla	N. 44 E.		
Mouth of the River Mayaguez	N. 87 E.		
Point Guanajivo	S. 23 W.		

These bearings, connected with those taken from the shoal, assign to the battery a position about 200 fathoms more to the northward than in the Spanish plan. The bearings thus corresponding, assign to the shoal a position exactly in the middle of the main channel, between las Manchac and Baxo Rodriguez. It was perfectly unknown to the pilot, and it must have no inconsiderable extent, as, after having first altered the course to the northward for some time, and again shaped the former course to the westward, we once more shoaled our water to three fathoms and a half, which obliged us to steer more to the northward.

The leading mark for entering the bay mentioned in the Spanish Derrotero, viz., “to keep the road leading to St. Germano right ahead, and the island Desecheo (nine leagues distant) right astern,” is rather difficult to keep on. I think I found out the following marks: “No danger until Point Guiguero shuts behind Point la Cadena; then keep the high saddle hill on the road to San Germano about S. 77° E., or on the northernmost of two dark hummocks forming a broad saddle on the low land;—this will lead you clear inside the shoals.”

The hydrography of the whole island of Porto Rico requires to be investigated; the more so, as during later years the produce and exports of this interesting island attract numerous vessels to places, many of them provided with safe harbours, as yet but imperfectly known. Outside the harbour of Ponce, in a line from the mouth of the harbour, till off Deadman's Chest, there nowhere should be less than

four fathoms water, according to the opinion of the pilot of the place, as well as of the regular traders from St. Thomas. Still I found several irregular casts of three fathoms and a half, and one with a quarter less three. The most experienced seamen at those places do not know any thing about dangers beyond the draught of their schooners, ten or eleven feet. In the fine harbour of Fajardo, inside the Cabeza de San Juan, at the east end of the island, there is a sunken rock in the very middle, upon which the pilot placed me, with a sloop-of-war, in 1825. The harbour of the city of San Juan now contains less water than when surveyed in 1793; line-of-battle ships, and large frigates, are now obliged to remain in the outer harbour.

The error in the position of the Battery la Puntilla at Mayaguez, I think, may be ascribed to the plan being probably a posthumous work. Another error in the same noble work, the "Derrotero de las Antillas," tends to confirm this supposition. It is the erroneous position assigned to St. John's, in Antigua, which evidently has been mistaken for some place in the island of St. John. As I have been mentioned in the Antigua newspapers, on account of observations I had made there, I take the liberty to communicate a list of positions of different places in the West Indies. The longitudes are all determined chronometrically, from the observatory of Sir Andrew Lang in St. Croix; this distinguished amateur of astronomy having ascertained the absolute longitude of his observatory by numerous observations contained in different numbers of the "Astronomische Nachrichten."

	Latitude,			LongW. from		
	N.			Greenwich.		
	°	'	''	°	'	''
Puerto Rico						
Mayaguez, Battery de la Puntilla.....	17	57	21.0	67	9	9
Ponce, Battery de la Playa				66	37	39
(a) St. Juan, el Morro				66	5	52
St. Thomas	18	20	23	64	55	17
St. Croix	17	44	32	64	40	43
Fort Frederik, West end	17	42	59.6	64	52	41
St. John's						
Cruz Bay, House of Corectn. Christiansfort	17	17	45.0	64	47	17
St. Christopher's... Basseterre, Fort Smith	17	17	45.0	62	41	50
Nevis				62	37	28
Charlestown, the ruined fort (W. point)						
Antigua	17	7	55.8	61	51	23
St. John's, Fort James						
Guadaloupe	16	0	30.3	61	45	20
Basseterre, Fort de l'Irois.....						
La Martinique St. Pierre, Gate of the Hospital				61	10	8
Fort Royal, the Fort				61	3	46
Trinidad				61	30	32
(b) Port of Spain, porch of the English Church						
Cumana.....				64	10	54
Fuerte del Bocca del Rio						
Nueva Barcelona (a) The Cathedral.....				64	44	36
Cape Codera				66	3	6
South-east Head.....						
Centinela	10	52	20	66	4	23
La Guayra (a) The Mole				66	55	42
Puerto Cabello ... Fort Libertador				67	45	1
Curacao				68	55	44
Fort Amsterdam.....						
Orchilla	11	50	12	66	14	2
(c) West Point						
Tortugas				65	12	34
(c) East Point						
Blanquilla (c) South-west Point				64	37	5

(a) Found by approximation, without direct observation.

(b) Observations made by Captain J. Seidelin, Royal Danish Navy.

(c) Observations made on board—those off Tortugas rather doubtful, as the low point was difficult to distinguish.

SUPPOSED ISLAND OFF CAPE HORN.

Valparaiso, October 8th, 1836.

SIR,—On reading your esteemed paper, dated June 13th, I observed the longitude of the island, discovered by me in the South Pacific, has been wrongly stated to be $80^{\circ} 20'$ west of Greenwich. I beg leave to communicate to you, that it is situated in latitude $58^{\circ} 21' 30''$ south, longitude $80^{\circ} 22'$ west of Greenwich.

I am, Sir, your most obedient servant,
M. MATZEN, Master of the Danish ship Dania.

The foregoing alleged discovery of an island off Cape Horn appeared in the *Shipping Gazette* of the 14th February last. As the *corrected* position assigned to it by Mr. Matzen renders it of some importance to navigators, we have no hesitation in stating our belief that it was nothing more than an iceberg, as it falls immediately in the track of H.M.S. Conway, Captain Basil Hall, which we laid down in our passage round Cape Horn in 1820.

THE OUTER PASSAGE TO TORRES STRAITS.

THE question of which is the best passage for ships to adopt from Sidney to Torres Straits, "the Inner" or "the Outer," appears to be yet undecided. In our February number will be found a communication from Mr. Thomas Robson at Bombay, in which he takes a candid and impartial view of the two routes, their whole advantages and disadvantages; and so far is he impressed with the superiority of the inner over the outer route, that he recommends the local government to oblige the vessels over which they have control to adopt it. We confess that the reasoning of Mr. Robson appears to carry considerable authority, and we are inclined to believe, with some experienced seamen, with whose opinions we have been favoured, that Mr. Robson is right. The state of the weather, and the time of reaching the barrier, so as to secure making the entrance, notwithstanding a heavy sea may be runnin , are difficulties which must always operate against the outer route, and from which the inner one is no doubt free. However, a fair discussion of the subject is most desirable, and as Captain Ashmore, from whom we have received the following communication, cannot have seen Mr. Robson's letter, and as he appears to be the firm advocate of the outer route, we shall be glad to hear what he has to offer further in its favour when he has read it:—

Sir,—Observing in a Sidney paper of the 12th inst., a letter headed "Torres Straits," and subscribed "M. R. Thompkins," I shall intrude on you with a few remarks upon it, in the hope that the discussion, if not useful, will be productive of no harm. It commences relative to a pilot station in Torres Straits, as advised by a correspondent of the *Sidney Gazette*, who, I must say, to have made such a proposal, can have had but an imperfect knowledge of those straits. Captain Thompkins himself has been but one trip through in a vessel that adopted the route by Sir Charles Hardies Islands, when he could have only seen about one-tenth of the intricate navigation from Sandy Cape to Booby Island,

and the portion he saw was the clearest of dangers. This fact being known leaves its own comment, and I should not have noticed the letter, but for the words he quoted as given to a friend of his by Captain King:—"It is difficult to persuade: I can have no interest in advising men to their destruction, and I am yet in hopes that eventually the inner route will be the one preferred."

Captain King's labours require no eulogy—a view of his charts speak more than can be written for him, and to those who know the means with which he was furnished, and that too by a government, what he has accomplished appears incredible. But the question is, supposing even that he had been equipped with every convenience he could have desired, would it have been in his power, or that of any man living, to trace and delineate every danger that existed, especially within the short period of his survey. Many, very many, think not. I shall quote a published opinion, being an extract from Captain Blackwood's justly complimentary letter of the 28th September, 1835, to Captain King:—"The *Imogene* striking is no proof that the inner route is not to be preferred, as she struck on two sunken and isolated rocks, and by bearings of the low islands to the eastward of the easternmost of your tracks; such an accident might happen in the Irish Channel, or the Bay of Bengal, and it would be difficult to say if on such an extensive line of coast as that of the north-east coast of New Holland, you, or any one, could answer for every single rock above and below water being discovered and laid down, however exact and careful the survey may be."—In proof of this I beg to add, that some years ago, I was informed by a gentleman at Batavia, that one of his Majesty's ships, the name of which I do not at this moment remember, in which he had made the inner passage of the straits, got on shore twice, and on the last occasion they did not consider themselves a cable's length from Captain King's tracks—and nothing saved the vessel but the prompt measures and powerful means at command. Lieutenant Roc, who was an officer on the survey with Captain King, afterwards followed in his Majesty's ship *Tamar*, discovered some additional shoals not previously seen by Captain King. Captain F. Blackwood, in his letter to Captain King, just published, mentions his discovery of a shoal, but regrets that time did not allow him to sound it: on his arrival at the bay under Mount Adolphus, a place of perfect safety, he says, that these three vessels were all some little out of Captain King's tracks, whether accidentally or on purpose, I shall offer no opinion, but the question is, how far would merchant vessels be enabled to adhere strictly to that track.

I shall only adduce one case more, which was my own—on my last trip, (1830) when I discovered a small patch in the lat. of $11^{\circ} 10\frac{1}{2}$ south, and although in seven trips I must have passed that patch at a distance which could not exceed two and a half miles, and sometimes not a mile, yet I never before observed it, although I had invariably one hand on the top gallant and fore-yards, and either my mate or myself on the top-sail yard. Now whether this arose in difference from times of tide, sun's reflection, or the growth of the coral, I shall leave others to decide—and also, if in such a small portion of this navigation, a shoal can be so repeatedly passed unobserved, what is to be expected in a route of an additional 900 miles? That coral springs up like mushrooms, is generally admitted; and whether its increase at all keeps pace under water

with what it is after its appearance above, some judgment may be formed from the facts that what Captain Cook in 1770 called "Sandy Kays," in lat. $11^{\circ} 20'$, were in 1830 islands of from one quarter to nearly one mile in extent, exclusive of their reefs, and well wooded; with such a germ so richly disseminated, as the soundings indicate throughout the whole inside of the barrier, and that in comparative shoal water to the deep sea outside, are not shoals to be expected in the hourly progress of rising, so as to make the thinking mariner powder well before he enters on it?

The next subject for his consideration, is the time in which the passage is likely to be accomplished. My shortest was by the outer route, in sixteen days, in which time I made that passage twice, and the longest thirty-one days, during which we were seventeen buffeting against north-east and north-west gales, till I got into the trade winds, and on that voyage took the route by the Eastern Fields. From Sidney to where the trade is met with, must always be the doubtful part, as to time, of this outer passage; and from analogy, I would infer it, would be first steadily obtained in the offing: I must further observe, that none of the vessels which I commanded were of the fast sailing class, nor had I even a steering-sail set after dark, after reaching the latitude of Wreck Reef. Others have made the passage to Booby Island in fourteen days. Thus much as to time—and lastly, the only objection Captain King states that he had heard *against* the inner route, (vide Post Office Directory, 1835, page 47,) "is the trouble of anchoring at night and weighing in the morning,"—and manned as merchantmen are, it must have some weight, as heaving up a chain in deep water is a very tedious job, and one which, from its not being done with sufficient rapidity, is at times attended with the consequence of a slip. These are the combined reasons that make it "difficult to persuade."

I shall now state, that in nine voyages I adopted the outer route—that is, seven between Wreck Reef and Lamb Island, in two of which I was accompanied by two vessels, which from daylight till dark spread to signal distance on each side; and the route having been since adopted by at least seventy vessels without my hearing of a shoal having been discovered, I infer that there is a clear track of twenty miles to the barrier, in the making of which there is some risk, that mainly depending on the chronometer. The late Captain Flinders gives an excellent admonition to all navigators through these straits—"the commander of a vessel," says he, "who undertakes this passage, if he does not feel his nerves strong enough to 'thread the needle,' as it is called, among the reefs, whilst he directs the steerage from the mast-head, he ought not to attempt it, as perhaps more danger is there to be anticipated from timidity than temerity." With these admonitions before him, no man can be blind as to what he has to encounter, which obviates so much of the apparent danger. My range along the barrier was from $12^{\circ} 59'S.$ to $11^{\circ} 55'S.$; eight or nine miles will be found the longest patch without an opening in it.

With respect to the chart, which bears my name, of that part of the barriers abreast Sir Charles Hardies Islands, and with which most captains furnish themselves from Mr. Beemi, I unequivocally state, that I have never in any one instance, received a fraction by it, or for any opinion I have given to the many who have sought it; indeed, so

much to the contrary, that for three or four copies I required for my own use, I paid Mr. Beemi just the same as any other individual would.

Having thus stated my reasons, and also what I have done myself, in giving my opinion or advice to others (and that only when called on for it) as to the outer passage, which I have never known once followed, that it was not again by the same person; I do hope that it will be apparent that I can have but as little "interest in advising men to their destruction" as Captain King. I have ever thought it the duty of every seafaring man to make his labours useful to his sea-faring brethren, and to the mercantile community, who give him his bread; and in accordance with this idea, in 1811, having then made two passages through the straits with no other guide than Captain Cook's chart, and the sheet one of Laurie and Whittle, published in 1798, the first trip to the Sand Heads of the Hoogly, in seventy-one, the other in sixty-four days, a passage that before occupied from three to six months, I presented the tracks to the Marine Board in Calcutta. The chart was first shown to Captain W. Owen, who then happened to be there, the acknowledgment of which to me by the Board, was accompanied by a copy of their letter to the Vice-President in Council. The chart, I conclude, arrived in London when it was known that the survey of Captain Flinders was in course of publication, rendering my humble sketch unnecessary. This, however, was not the case with my sketch of the northern ports on the west coast of Sumatra, which on its receipt by them in 1822, was immediately published, and is to this day the one in general use.

I have been told that, their Lordships of the Admiralty have given imperative orders to the Commanders of his Majesty's ships, on returning from this station to India, to adopt the inner passage: the reason of this, I should apprehend, to give opportunities of tracing the route with greater minuteness, and thereby improving the charts by successive additions and corrections—this is as it should be, for ships of the navy are those which can best surmount danger of any kind, and where intricacies in navigation occur in what must, at no very distant day, be a great commercial thoroughfare, it is their peculiar province to employ all possible means for acquiring correct information, and communicating it for the use of the public.

Sidney, May 31st, 1836.

I remain, Sir, &c.,

SAMUEL ASHMORE.

MAGELHAEN STRAITS.

To the Editor of the Nautical Magazine.

Liverpool, 107, Mount Pleasant, Jan., 1837.

SIR,—I beg leave to forward for your perusal an abstract log of the schooner "Mary Ann's" passage through the "straits of Magelhaen," both ways, and at different seasons. It will perhaps tend to show whether it would be an advantage to take that route or not, although, in my humble opinion, it never will become a general one. The insertion of the abstract in your useful work, will oblige

Your obedient Servant,

J. H. SMITH.

Abstract Log of the schooner, "Mary Ann" through Magelhaen Straits, from the eastward.

Jan. 9th, 1836 Arrived, passed Cape Virgins, distant one mile and a quarter; least water $7\frac{1}{2}$ fathoms, hard bottom, with a fresh breeze at west, it being the first of a flood-tide, worked into the strait, wind decreasing towards noon, and from W. to S.S.W. At 3 P.M. anchored in 10 fathoms dark sand, Cape Possession, west about 9 miles, off shore about one and a half.

10th. Ebb tide set N.E. by E. $2\frac{1}{2}$ knots, full 9 feet. We weighed on the following tide, and worked into Possession bay, moderate S.W. wind and fine weather; anchored in twenty fathoms soft bottom.

Compass Bearings.

Cape Possession N.E.
Mount Aymond, W. $\frac{1}{2}$ N.
Cape Orange Peak, S. $\frac{1}{2}$ W.
Ebb Tide 3 knots, full 16 feet.

A t9A.M. weighed with the flood; light winds from W.N.W., by W.S.W. At 11 had a heavy squall from N.W. with hail, passed quickly through the first "Narrow" (strictly observing Captain King's directions,) when the wind shifted to the W.S.W., and increased to a fresh gale. At 4 P.M. anchored in a quarter less six fathoms, hard bottom at the end of St. Jago bay, several patches of kelp about a quarter of a mile to the east.

Cape Gregory just in sight, S.W. $\frac{1}{2}$ S.
Peaked Hillocks, W. by S. $\frac{1}{2}$ S.
Off shore about half a mile; fall of tide six feet.

12th. We remained there until morning of the 12th, it blowing a hard gale from S.W., with frequent squalls, and a short sea: P. M., moderate S.W. wind, weighed and worked to the westward, and at five anchored in Gregory Bay, (it being too late in the tide to pass through the 2d Narrow,) in eight fathoms, wind off shore three quarters of a mile.

Cape Gregory S. $\frac{1}{2}$ W.

Shortly after we had anchored, the Patagonians came down from the back of the Sand Hills, on horseback. I went on shore, found them very friendly, and took them on board the schooner, gave them some tobacco, biscuit, &c., &c., for which I received some Guanacho meat and a few skins. The tribe consisted of about sixty in number, men, women, and children.

13th, A. M. Weighed with a fresh gale at W.S.W. and turned through the 2d Narrow, under close reefs, with a stormy tide and very strong eddies, near the foreland. At slack water brought up in eight fathoms mud.

Point Silvester, S.E. by S. Santa Martha, S.E. $\frac{1}{2}$ E.
Luoin Hill, W. $\frac{1}{2}$ N.

At noon it blew a hard gale at S.W. with fine weather, and continued until midnight, when it moderated, and enabled us to weigh on 14th at daylight, with the flood. Made three or four tacks and passed through the small channel, between the south end of Elizabeth Island and the main, least water quarter three fathoms, hard bottom, when the wind veered to the S.W. and the tide being down brought up in Sandy Bay in nine fathoms, good holding ground.

Cape Negro, N.W.

South Point of the Bay, S. by W.

P. M., Weighed, wind variable from the westward, and stood down along shore, distance about one mile; when about four miles from Sandy Point it fell calm; during the night had light northerly winds with thick rainy weather, and the land obscured. At 8 A. M. on the 15th, the wind came from the S.S. W.; weather clearing, and being close to Port Famine, anchored there in half five fathoms, soft mud.

Point St. Anna, E. by N. $\frac{1}{2}$ N.,

where we remained to procure wood and water. The water in the Sedger river is excellent and keeps well, but that from the rivulet at the head of the harbour is full of green slime and will not keep. We filled one cask there by way of experiment. We remained at Port Famine until the 17th, it blowing a fresh gale at S.W. with heavy squalls during that time.

17th. Commenced with light northerly airs. At 7 A. M. weighed, wind increasing. At 9, passed Cape St. Isidro. At 1 P. M. abreast of Cape Froward, when the wind fell light and variable, from N.W., S.E. and then calm. Sent the boat ahead to tow, endeavouring to gain the anchorage in Woods Bay, but found it impossible, the current or tide being against us. At 9 P. M. Cape Holland bore west, about four miles; it continued light variable airs and calms, with thick rainy weather, during the night.

At 8 A. M. on the 18th Cape Holland N.W. two and a half miles, when, a breeze opening up at west, brought fine weather. At noon moderate breeze S.S.W. and S. which enabled us to make fair progress until 5 P. M., when the wind fell light, being within a mile of Elizabeth Bay. I intended to have anchored there, but when close to Passage Point, found the tide setting to the E.S.E. about three and a half knots, which nearly drifted us on the shoal; towed the vessel's head off shore, and drifted down the Reach again, (English Reach,) it then being calm, and when close to Cape Gallant a breeze sprung up at S.W.; night then drawing on anchored in Fortescue Bay in quarter less ten fathoms, soft bottom.

Cape Gallant, S.W. $\frac{1}{2}$ W.

East Point, E. $\frac{1}{2}$ N.

19th. Had variable breezes from the westward, with thick weather and light rain. 9 A. M. weighed with the tide and worked to the westward, and at 2 P. M. brought up in Elizabeth Bay in half ten fathoms, mud and sand.

Passage Point. S.E. by S.

Entrance of the river, N.N.E. off shore about one third of a mile.

ebb tide setting to the S.S.E. two and a half knots, and the water had just began to full by the shore.

20th, A.M. Weighed with the flood, wind moderate from W.N.W. with frequent squalls. Working to the westward found the tide strong and irregular when abreast of York Roads, and between Cape Cross-tide and the Jerome Channel. P.M. worked into Borja Bay and anchored in twenty fathoms.

Points of the bay, E.N.E. S. by W. $\frac{1}{2}$ W.

a small run of water distance about two cables' length.

We did not leave Borja bay finally, until the 25th, having put back twice; constant gales from west to N.W. heavy squalls, and thick rainy weather. This is the most convenient place in the straits for water and

wood; it is also well sheltered and good holding ground, bottom light green mud, sand, and broken shells. We found some little difficulty working in, from the sudden and variable gusts of wind down the mountains.

25th. Daylight, weighed; wind moderate, at N.N.W., with thick weather. At 9 A.M. passed Cape Notch. At 10, it fell calm, with thick misty weather. At noon a breeze sprung up west, and increased fast; continued our way, working under double reefs, but the weather came on so thick, with a fresh gale and heavy squalls, and finding we did not gain ground, bore up for Swallow Harbour, and anchored in fifteen fathoms, rock and stones, where we remained until the 30th, with two anchors down the greater part of the time, wind mostly from west to N.W., with constant wet weather and long reach, at times showing a complete white surface from the violence of the wind. The rock seen by Captain Fitzroy just awash, about a cable's length from the west point of the entrance; I saw very plain, it being low water: the kelp runs some distance off it, which is a good mark.

30th, A.M. Weighed, wind moderate, W.N.W., with thick weather, frequent squalls and rain; had great difficulty to unbrace the anchor, it having caught the rocks; worked to the westward; passed great quantities of drift kelp, between Cape Notch and Snowy Channel, at 8 P.M. abreast of Shelter Island, continued to work to the westward during the night, wind varying from N.W. to W. At 2 A.M. on the 31st, the weather came on so thick and squally that the land was completely obscured on both sides: laid the vessel to with head towards the north shore until 3, when it cleared a little, and the day breaking, set sail again and bore to the westward. At noon the wind increased so much as obliged to double reef. At 6, Half Port Bay, distance about three miles, but the wind still increased, and finding the current strong against us (only having gained about seven miles in the last twenty hours,) bore up and anchored in Marian cove, in half sixteen fathoms, mud and sand, about a cable's length from the shore.

Feb. 1st. At daylight made sail and weighed, wind light from the west and fine weather. At noon increasing breeze with frequent squalls and hail, wind varying from W. to S.W. At 8 P.M. Half Port bay distant two miles, current strong against us the whole day, having gained only seven miles in twelve hours, wind light during the night, with fine weather increasing at sunrise, on the 2d, N.W. worked to the westward. At noon

Cape Providence . . . N.W.b.W.½W.
Cape Upright . . . S.W.½S.

We lost the strength of the easterly current after entering sea reach.
At 8 P.M.

Cape Upright . . . S.E. b.E.
Cape Tamar . . . W.b'N.½N.

At nine the breeze increased, varying from N.W. to N., with constant rain. At midnight, a brisk gale, with frequent squalls, double reefed, and continued working to the west, land obscured. At 4 A.M. on the 3rd, every appearance of a hard gale coming on, and being close to "Cape Tamar," run into Tamar harbour, anchored in sixteen fathoms mud and sand, where we remained until the 12th, having made three attempts during that time to get to sea, but were obliged to

return; the last time we weighed at noon, on the 8th, and worked to the west under double reefs, a confused sea on; during the night had light variable winds and calms. At 6 A.M. on the 9th, light N.E. airs, thick weather and rain, distance off the south shore about one mile; we then got into a counter current setting strong to the westward at least three knots, from the velocity with which the vessel swept past the small rocky islets, at times not more than two cables' length from the breakers. At 11 A.M. a breeze sprung up from the N.W. and quickly increased to a gale; close reefed, and layed to, with her head to the northward, expecting a clear, so as to ascertain our true position, but the gale increasing so fast, with hard squalls and heavy rain, we bore up again for "Tamar harbour," and had great difficulty to regain our former anchorage. By the distance we run after bearing up, we must have been near to "Cape Cuevas," or Valentine harbour. At 8 P.M. we were riding with 110 fathoms on one anchor, and 60 fathoms on the other, and lower and top-sail yards on deck. This was the most severe gale we experienced in the straits. Last quarter of the moon.

Feb. 12th. 4 A.M. weighed, wind variable from the S.W. increasing at noon, with frequent squalls and hail, worked to the westward. At 6 P.M. wind variable from the westward, Cape Parker, N.W. $\frac{1}{2}$ N., Cape Tamar E. $\frac{1}{2}$ N. made the best of our way to the west during the night under double reefs, frequent heavy squalls. Snow and hail, saw the land occasionally between the squalls. At 4 A.M., on the 13th, a sudden clear in the weather, and a strong gale sprung up at S.W. close reefed.

Cape Pillar, W.S.W.

Westminster Hall, N.N.W.

Got close in under the south shore, and layed until 10 A.M., when it moderated, made sail and stood out. At 11 A.M., Cape Pillar bore south about four miles. At 4 P.M., Western Evangelist Island, about four miles, then under all sail standing to the N.W. We found no difficulty in getting an offing, experienced very little bad weather afterwards, and arrived at Mazatlan, our port of destination, on the 10th of April.

Schooner Mary Ann through the Magalhaen straits from the Westward.

JULY 15th. At daylight, Evangelists bore N.E. eight miles, fresh breeze at S.W., and cloudy weather. At 11 A.M. Cape Pillar, S. about four miles, ran along the south shore, until 6 P.M. when the weather began to get thick and squally; laid to, with the vessel's head to the northward.

Tamar Island, N.E. by N. off the south shore two miles.

The wind during the night variable from N.W. and N., with thick weather and frequent snow showers.

At 4 A.M. on the 16th, the weather clearing, vessel then between Cape Upright and Cape Providence, bore up under easy sail; at daylight, abreast of Cape Monday, wind light and variable. At 9 A.M. a moderate breeze from N.E., with fine clear weather. At 2 P.M. anchored in Playa Parda in eight fathoms, soft bottom: midnight, wind east, with constant snow showers.

On the 17th, had a strong E.S.E. breeze, with constant snow in the first part; latter, the weather cleared, and at midnight wind variable from N. to W.

18th. From midnight, until 10 A.M. light winds, variable from S.W., and N.W. 6th weighed, at 11h. 30m. passed cape "Notch," moderate S.W. breeze and heavy snow. 1 P.M. passed Cape "Quod," wind W.N.W. and frequent snow showers. At 2 P.M. anchored in "Borja bay" in fourteen fathoms, latter part light N.W. winds and fine clear weather.

We remained there until the 21st, procuring wood and water, repairing rigging, &c.

21st. Light variable winds and calms throughout, with fine clear weather. 8 A.M. weighed and sent the boat ahead to tow until outside the bay. At 11, passed Cape Crosstide (well named.) At 1 P.M. it fell calm, and being close to the anchorage in "York roads," let go the anchor in twenty-two fathoms, to keep the vessel from drifting off the bank; when brought up, the eddies came down so strong that the vessel went round her anchor several times, the helm being of no service to her, the tide at the same time running strong to the W.N.W. inshore. At 2h. 30m. slack tide, and a light breeze springing up, weighed and anchored in seven fathoms.

Entrance of Batchelors River N.

Points of the bay N.W. $\frac{1}{2}$ N. to S.E.b.E. off shore a small half mile.

Slack water at 6h. 30m. P.M.

Vessel tended to the N.W. at 11h. 30m.

22d. Light variable winds from N.E. to S.E., with calms at times, and fine weather throughout.

Swung at 3 A.M. to the S.E.

Ditto, 7 A.M. N.W. $2\frac{1}{2}$ knots.

At 8 weighed, with a light breeze, and when outside the roads it fell calm, vessel drifting variously with the different sets of tide four fathoms, anchored in Elizabeth bay in fourteen fathoms.

Passage point S.E. $\frac{1}{2}$ E.

Entrance of the river N.E. $\frac{1}{2}$ N. The tide then setting to the W.N.W.

5h 30m. P.M. The tide shifted to the E.S.E.

11h. 25m. do. do. W.N.W.

About three knots wind fresh E.S.E. gale and fine weather.

23rd. At 3 h. 40 m. A.M. swung to the E.S.E. 7h. 30m. W.N.W. At 9 A.M. weighed, and when about half a mile outside of Passage point, the tide set in up to the W.N.W. At 11, the tide began to set to the E.S.E. in the stream. Noon light variable winds and calms, 6h. 30m. brought up in "Fortescue bay" in nine fathoms.

Cape Gallant . . . S.W. $\frac{1}{2}$ W.

Low Point . . . E.S. $\frac{1}{2}$ S.

24th. 6 A.M. weighed, light breeze at west, at 9h. 50m. abreast of Cape Holland; noon passed Cape Froward, breeze increasing at S.W. and fine weather. At 2h. 20m. P.M. passed Cape San Isidro, distant about 1 mile; and about 4 P.M. anchored in port Famine in nine fathoms soft mud. Point St. Anna N.N.E. well over towards the Sedger river, midnight fresh S.W. gale and squally.

25th. A.M. Fresh S.S.W. gale, with squalls. At daylight, variable winds and calms, with fine weather; 5 A.M. weighed. At 1 h. 30m. P.M. abreast of Point St. Mary, six fathoms, being calm, and the tide setting to the southward, brought up in twelve fathoms, about

half way between Sandy Point and St. Mary's, off shore three quarters of a mile.

Sandy Point North.

26:h. Moderate S.W. wind throughout, and fine weather; A.M. weighed, and made sail. At noon passed the N.E. end of Elizabeth Island, about a quarter of a mile. At 30 m. P.M. entered the second Narrow, and at 2 h. P.M. brought up in Gregory Bay, in seventeen fathoms.

Cape Gregory . . . S. S.W. off shore two miles.

Passed through the bed of kelp off the S.W. end of Elizabeth Island—least water half six fathoms. In running along the island, had from seven and a half to nine fathoms, hard bottom; had a very strong easterly tide through the Narrow, but the westerly tide had commenced in the bay. None of the natives were seen. Tide three and a half or four knots.

27th. A.M. Moderate W. S.W. wind and sleet; 8 h. A.M. weighed, wind falling light towards noon. At 2 h. 15 m. P.M. entered the first Narrow. At 3 h. 30 m. the

Peak on Cape Orange . . . South.

North Direction Hill . . . W. by S.

At 4 h. 30 m. P.M. a heavy swell came in with the flood-tide, when the breeze increased at S.W. At 7 P.M. abreast of Cape Possession, about two miles and a half; at 11 h. 15 m. rounded Dungeness Point, and at midnight Cape Virgins bore N.W. by W. about ten miles. Hauled up, with a fine breeze and smooth sea.

It being the last quarter ebb when I passed the first Narrow, and on the day of full moon, the shoals off Cape Orange and Cape Delgado were dry.

And I must certainly express my admiration of Captain King's chart and directions, more especially of that part; and will say, that if properly attended to, no vessel can ground, making for the first Narrow.

After passing Cape Virgins, we ran up along the coast nearly to the River Plate. Had mostly fine weather, and a smooth sea.

From Cape Virgins, until we arrived in Borja Bay, I found no great difficulty, having tides to assist us from Cape Quod to Cape Pillar, (in the summer months,) and may say, there is a constant easterly current; and in Long Reach, at times one and a half and two knots, and never less than one mile, with westerly winds.

When in Sea Reach the strength of the easterly current abates, and if the weather be moderate, fine progress may be made; but when it blows a double-reef breeze, there is such a confused sea, that a small vessel has not much chance in beating.

The winter months no doubt are the best to make a passage through from the eastward. Captain King remarks you have much finer weather, and frequent easterly winds—both which I experienced.

From the westward, in the summer months, I should not hesitate, in any vessel, to come through; the nights being short, and constant westerly winds, you may choose your anchorages.

My passage through, last July, answered a double purpose, although longer than I had reason to expect. We procured wood and water, repaired sails, rigging, &c., and in a measure recruited the crew, they being in their beds every night; for I am well aware, that, had we come

round Cape Horn, not one of them would have weathered it out. The scurvy had already made its appearance, and all complaining of sore feet, caused by constant wet with salt-water. I always made it a point ere I started in the morning, to secure an anchorage before dark, owing to the crew being in a sickly state.

In a square-rigged vessel I would not attempt the passage from east to west, not from any fear of wreck, but the detention likely to accrue; and for this reason, putting back occasionally from the place you start from, would be no uncommon circumstance. In two or three instances, when I was obliged to do so, (say to Tamar Harbour or Borja Bay,) had not the *Mary-Ann* been a handy and good sailing vessel, we should not have been able to gain the anchorages, and in that case lost as much ground, as in all probability, would have taken days to fetch up again.

It may be well enough for his Majesty's ships, with plenty of hands, when detention at times is no great object, but not merchant vessels, who have no more than just sufficient to weigh an anchor, and almost everything depends upon the facility with which they perform their voyages.

NOTES ON BILBAO.

THE pilots in general are very ignorant. The set of the current in the offing is generally governed by the prevailing wind. Biscay is proverbially rainy, and in the winter months one incessant fall of rain lasts throughout, notwithstanding which the freshes of the river Nervion are very capricious in their visitations. In May, 1830, the river at Bilbao suddenly rose eighteen feet above the average high water mark, and the loss of property in consequence was immense. These destructive freshes occur mostly on a *continuous* fall of *heavy* rain after dry weather.

With regard to the winds in moderate weather, during the summer months, the land and sea breezes prevail with tolerable regularity. During the winter, gales from the N.W. are frequent and invariably accompanied with rain: if also with lightning they may be expected to blow with extreme violence. The peculiar local wind is the strong southerly one called by the inhabitants "*Viento de Castano*," or the Chestnut wind, from the fact of its ripening the chestnuts, (which in peaceable times is one of their principal exports,) and likewise the maize, which is their chief agricultural pursuit. The rural population have a superstitious reverence for these periodical winds, which prevail about the spring and autumnal equinox, and appear to have many of the characteristics of the Sirocco. They blow at times with great force, are generally dry and warm, though, when veering to the S.W., are accompanied with rain. The barometer generally gives warning of their approach by a sudden fall of 0.25 or 0.30 and perhaps more, and though an off-shore wind the bar frequently becomes impassable when it blows strong from this quarter.—*Com. T. P. Le Hardy.*

DANGERS OFF KANGAROO ISLAND.

THE following account of dangers off Kangaroo Island, although by no means satisfactory as to their actual position, will serve as a warning

to navigators. Our knowledge of the shores of Australia, it is well known, is limited to the information we have derived from the surveys of Flinders and King, although there are portions with which we have become more intimately acquainted, as the settlement of the shores has progressed. We are indebted to the surveyor general of Western Australia for an admirable chart of Cockburn sound, and we doubt not, that Captain Hindmarsh, who is now engaged in colonizing Kangaroo Island, will soon cause a similar survey of the shores and neighbourhood of Spencer's Gulf to be made. Indeed we are encouraged in this conclusion from being aware of the importance which all naval officers attach to a correct knowledge of the hydrography of certain shores, and the influence which Captain Hindmarsh can exert in obtaining surveys of those in which he is so intimately concerned, and which have been hitherto left in a very imperfect condition.

Eagle, Gages Roads, March 6th, 1836.

Sir,—Agreeable to your request, I send you the latitude and longitude of a reef of rocks off Kangaroo Island, which I supposed to be the same named "Brockman's Breakers;" by a good observation of the sun he made the latitude $36^{\circ} 20'$. South longitude by chronometer $137^{\circ} 5'$.

During this voyage we have passed a reef off the land about seven or eight miles, running about N. and S. in latitude $37^{\circ} 00' 00''$ the extent of the reef was about four or five miles.

Off the north island of Gambier's Group in Spencer's Gulf, there is a reef of rocks running N. and S. from the west side of the island, at least seven miles long. I have only a recent general chart, upon which no such reefs are laid down.

J. S. Roe, Esq.

I am Sir, &c.,
(signed) C. PRATT.

P. S. We passed between the North Island and Staples Island, or the easternmost island, (that is the sailors' name,) as well as Wedge island, which is a good and safe passage, with not less than seven and a half fathoms water through. The reef extending from Gambier's group above-mentioned, is very important.

The following extract, however, by no means agrees with the above letter, but we give it as genuine as we have received it.

Schooner Eagle, Captain John Brockman.

Dec. 21st, 1831.—Noon, lat. $36^{\circ} 17' S.$ long. by a good chronometer twenty-three days from Hobart Town $137^{\circ} 21' E.$ Saw heavy breakers from masthead bearing S. by E. $\frac{1}{2}$ E. by compass, distant about twenty-five or thirty miles (the weather very clear,) and another patch W.S.W. about the same distance. Next day, the schooner was within four or five miles of these dangers, and observed the southern patch of reef to be about three or four miles in length, with several small rocks a few feet above the water's edge scattered upon it. The western reef was somewhat smaller in size, but with dry rocks upon it similar to the other. The breakers upon both were very high and there appeared a clear passage between them about a mile wide.

22nd. Having hove to during last night, in consequence of the vicinity of the above reefs, at daylight found the schooner within half a mile of another reef of rocks, partly dry, about 100 yards in length.

This danger appears to lie about ten miles from the nearest part of Kangaroo Island, and in the parallel of the west end of the island. No soundings were taken while in sight of these reefs, as the water appeared deep all around. At noon of the 22nd the southern reefs were not in sight, nor could any part of Kangaroo island be seen from the schooner's mast-head, when she was near them, on the morning of the 22nd; they must therefore lie near sixty miles from the south side of Kangaroo Island.

(Signed) JOHN BROCKMAN, Master, Schooner *Eagle*.

The bearings and distances of the dangers noted on the 21st Dec., place them far more than a mile apart from each other. That seen on the 22nd may have been the westernmost seen on the 21st, but the confused statements of distances, bearings, &c., renders their position entirely uncertain and shows how much an examination of the place in question is wanted.

The following extract from the proceedings of another vessel alludes no doubt, to the same rocks:—

“Memorandum of Reefs seen to the south of Kangaroo Island, by the Barque Lonach, W. A. Driscoll, Com.

“Monday, 14th April, 1834.

“Midnight.—Just as the watch was about to be relieved I was aroused by the cry ‘We are among the breakers.’ On coming on deck I observed them about three points before the beam at a distance of a few cables’ length. We were then by the wind—the ship’s head W. by N. hove all aback and stood to the south and eastward for about twenty minutes, when the cry was repeated, ‘We are going on the land.’ I in vain tried to see it, but could not. Still, as the cry continued, I thought it but prudent to heave her again in stays, our head W.N.W.; we then lost very rapidly what we had at first seen, made another short board to the S. and eastward, and then again to the W.N.W. keeping a good look out—weathered the rocks a short half mile, one of which appeared some height out of the water. The spray was like a column of smoke as high as our topmast head. The weather fine, with a moderate top-galant breeze. From the strong ripple on the water I should say that there was a strong set to the northward and perhaps to the eastward, but not having had observations the two preceding days I could not positively state this to be the case. Daylight saw the land low and even, the centre bearing N. by W., distance eleven or twelve miles: at 6h. 15m. A.M. it became clearer, when we perceived a low islet bearing N.W. by N. about one a half or two miles from the cape or headland.

“Lat. at noon $36^{\circ} 9' 11''$ south and long. (admitting Cape Otway to be $143^{\circ} 32'$ east) $136^{\circ} 35'$ east. We had run forty-four miles W. $\frac{3}{4}$ N. but as I before stated, some allowance must be made for a current—my opinion is that it set strong to the northward.

“I think it would be advisable for commanders to keep a good look out in approaching this island. This rock is not noticed in Flinders, or I should imagine very incorrectly laid down.”

SHOALS IN THE CHINA SEA.

Coral Reef.—"Sunday, 15th Nov., 1836—wind E.N.E., course N. by W.—at 4 h. 10m. P.M. passed over the western end of a coral reef visible under the ship's bottom. Water green and disturbed to windward. Sounded—no ground sixty-five fathoms up and down; longitude by chronometer from sights taken immediately $117^{\circ} 50' 0''$ east, lat. $10^{\circ} 48' 0''$ north. The reef appeared to be about half a mile in extent, and to shoal away to the eastward, from the state of the water in that direction."—*Extract from the Log of the Bombay, Captain E. Routh, H.C.S.*

Pennsylvania Breakers, said to be of doubtful existence, by Horsburgh.—"The Bombay, in company with the Henry Clay, of Boston, on Wednesday, 11th Nov., 1835, stood in to sight them, and at 10 h. A.M. both ships had them clearly in view. Bearings from the maintop of the Bombay, W. by S. eight or ten miles; bearings at noon, S.W. by W. $\frac{1}{2}$ W. fifteen or sixteen miles: lat. $9^{\circ} 49' N.$, long. $116^{\circ} 47' E.$ "—*Extract from the Log-book of the Bombay, Captain E. Routh.*

We are indebted for the foregoing to a correspondent signing himself J. L. Stevens, and lose no time in making them known. The first appears to form the south-west extreme of the Sea-horse Bank of Horsburgh, on which he has marked eight fathoms, and will serve as a caution to seamen when in its neighbourhood, as shoaler water may be found on it. Horsburgh says that it extends about three miles, in an east and west direction. It would appear from the account of Captain Routh to lie about N.E. and S.W.

The second extract appears to be a corroboration of one of the Pennsylvanias, with which we were favoured by Captain Swainson, of the barque Enmore, of Liverpool, and which appeared in our No. 56, for last October, page 601. The bearing of the breakers from the position of the Bombay at noon, agrees very nearly with that of Capt. Swainson, the distance being rather in excess, an error which is more frequently made than otherwise. This slight difference does not, in our opinion, warrant a different conclusion.

The following, from Lloyd's lists, is very important, as the rock alluded to lies in the middle of the China Sea, immediately in the track of vessels:—

"*Canton, Aug. 14.*—The Alexander, from hence to Singapore, struck on a sunken rock in lat. $10^{\circ} N.$ and long. $111^{\circ} E.$, and was totally lost. Crew saved."

A correct account of this is most desirable, and we trust, that for the benefit of seamen, the captain of the Alexander, or any of our readers who may have it in their power, will forward us one which may be implicitly relied on.

 THE MANUFACTURE OF SHIP-BISCUIT BY MACHINERY.

THERE is very little difference in any part of the world in the method pursued for the manufacture of ship-biscuit, and it is not a little surprising that no attempts had been made for ages to improve and

facilitate the manufacture of an article of food, the most essential to the comfort of sailors, previous to the application of machinery to that purpose at the Royal Clarence Victualling Yard at Gosport. Until this establishment appeared, one rude, laborious, unclean, and expensive system prevailed.

It may perhaps be right, in giving a detailed account of the machinery in question, to describe first, as succinctly as possible, the process of manufacturing biscuit by hand, as previously practised in the same establishment, that a just estimate may be formed of the comparative merits of the two systems.

On the old plan each oven, to keep it in operation, required a gang, consisting of five men, who were severally denominated—1st, the Furner; 2nd, the Mate; 3rd, the Driver; 4th, the Breakman; 5th, the Idleman. The duty of the driver was to make the dough, by mixing the flour and water together in a trough with his naked arms, till, by a laborious operation, a proper consistency was obtained. The dough in its rough state was then removed from the trough, and deposited on a wooden platform denominated a break, to be operated on by the breakman, whose business it was to knead it, by riding or jumping, with what is termed a break-staff, upon the dough. When sufficiently kneaded, it was transferred to the moulding-board, (a strong table,) where it was in the first place cut into slips, then divided into lumps sufficiently large to form the biscuit, then moulded by the hands into its circular shape, and subsequently *docked*, that is, pierced full of holes, by an instrument called a docker: this latter part of the process on the moulding-board was executed by the gang conjointly. The oven being raised to a proper degree of heat, the biscuits were pitched in by the joint assistance of the furner, mate, and idleman. The gang thus produced one hundred pounds weight of biscuit in thirty-six minutes, including the time occupied in baking, on an average fifteen minutes.

The nine ovens therefore of the bakehouse of the Royal Clarence yard required the labour of forty-five individuals to keep them in full operation, and produced about fourteen hundred weight of biscuit per hour, at a cost for labour and utensils of nineteen pence per cwt.

The general superiority of machinery, when applied to a suitable object, over manual labour, is peculiarly evident in the manufacture of biscuit. The processes on which the good quality of the biscuit mainly depends, are, the thorough kneading of the dough, and its subsequent division into portions of equal size and thickness. If the meal be not equally mixed with the water, some portions of the biscuit will be more wet than others, and will consequently require more baking than the dry parts: one of two results must inevitably follow—the dry parts will be over-baked, perhaps burnt up, or the moist parts will remain unbaked, and become what is usually termed “hard,” or “flinty.” The same consequence must attend the division of the dough into biscuits of unequal thickness, or into biscuits of which every part is not equally thick: if the thin biscuits are not over-baked, the thicker must be under-baked; and the thin parts of a badly-moulded biscuit will *perish* from the action of the fire, whilst its thick part is converted into “flint.”

The prevalence of “flint” in ship-biscuit is well known, though the

cause of it has not been so generally understood ; its origin, however, is sufficiently obvious, and is neither more nor less than that just pointed out.

The first process in the manufacture of biscuit by machinery is the mixture of the meal and water. The meal is conveyed into a cylinder four feet six inches long, by three feet two inches diameter, and the water from a cistern fitted at the back of the cylinder, containing the exact quantity of water (and which is regulated by a gauge) required for mixing the meal. Through the centre of the cylinder is fitted a shaft, armed with knives, which works horizontally. The shaft being set in motion, the knives revolve through the meal and water. For the first thirty seconds, very little amalgamation of the meal and water appears to take place, but after that period the dough begins to assume a consistency, and in the short space of two minutes from the machine being set in motion, it will produce five hundred weight of dough completely manufactured.

The cylinder is so constructed that the lower half is easily separated by means of a wheel and pinion from the upper sides, thereby forming a trough containing the new-made dough, from which it is with facility removed, and placed under the breaking-rollers, to undergo the second operation, that of kneading. These breaking-rollers, two in number, weigh fifteen hundred each, and are propelled from off a two-throw crank-shaft, by means of connecting-rods and pendulums—they pass backwards and forwards over the dough during the space of five minutes, when the five hundred weight of dough is brought into a solid, perfect and equal consistency. From the breaking-rollers, the dough is cut into pieces eighteen inches square, and placed on boards six feet long by three feet wide, and which are conveyed, by means of a line of friction-rollers, connected by an endless chain under a second set of rollers, to be rolled to the required thickness of the biscuit. The square of dough being thus pressed out so as to cover the surface of the board on which it is transferred under the cutting and stamping plate, this being constructed with mathematical precision, at the same moment cuts and stamps, or “docks,” the sheet of dough into forty-two hexagonal biscuits, which being now complete, are immediately conveyed to the oven on carriages constructed for the purpose.

There is now standing in the bakehouse at Gosport, one mixing-machine, two breaking-rollers, four sheet-rollers, and four stampers ; and it was calculated that this machinery would require eight men and eight boys to supply the nine ovens in the Royal Clarence yard, and that the produce would be ten thousand biscuits, or one ton of bread, per hour, at a cost for labour, and including all other incidental expenses, of five pence farthing per cwt.

Such, however, is the facility which results from practice, and such the improvements which experience and reflection suggest, that the machinery has proved so infinitely more powerful in use than in theory, that one half of it is now found amply sufficient to keep the nine ovens in constant operation. In other words, there is already sufficient machinery in the bakehouse at Gosport to supply eighteen ovens, should it ever be found advisable to enlarge the bakehouse to that extent.

It is no unimportant feature in the history of this machinery, that furriers (the individuals who have charge of heating, as well as the management of the oven) are the only tradesmen who will in future be required for the manufacture of navy biscuit, ordinary labourers and boys being competent to every other part of the work. This advantage can only be fully appreciated by those who have the means of knowing the difficulty of supplying the navy in time of war with biscuit, and the high rate of wages demanded by the biscuit-bakers.

Notwithstanding the Government bakehouses were kept continually at work during the late war, often with double gangs of workmen, the supply of biscuit was yet so vastly short of the demand, that it was necessary to have recourse to contractors to furnish the additional quantity required; and so urgent the wants of the shipping sometimes were, that bread brought to the victualling department in wagons, was received in the street, and sent off from the spot immediately.

The machinery rescues the Government at once from the extortion of bakers hired to work in the public bakehouses, and all the evils attendant on having recourse to contractors.

It is not possible to estimate the saving that would result from cutting off these two sources of profusion only; but it is easy to shew that in a time of war the saving would be enormous. The bakehouses at Deptford, Gosport, and Plymouth, would then of course be in full and constant operation; and, estimating their capabilities of production as equal only to what can now be produced at Gosport in *eight* hours' work per diem, seven thousand three hundred and fifty-four tons of biscuit would be annually manufactured in the three establishments.

If this quantity had to be manufactured by hand, the price paid for labour and utensils, being nineteen pence per hundred weight, would amount to the sum of eleven thousand six hundred and forty-three pounds.

The machinery manufactures, at five pence farthing per cwt., which sum includes ten per cent. for wear and tear, and all other expenses attendant on the process; therefore the same quantity of biscuit would be produced for the sum of three thousand two hundred and seventeen pounds, shewing a net saving of eight thousand four hundred and twenty-six pounds.

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NOTES ON SAMOS.

OF the ancient city of Samos, once the rival of Athens in maritime affairs, and nearly her equal in power and wealth, little now remains to gratify the curiosity of the traveller and antiquary; and they will find but small portions of her former prosperity. Enough, however, still exists, to prove her ancient magnificence, in the fragments of columns and cornices, and the inscriptions on monumental remains, as well as the dedication of some temples, which shew that once she must have enjoyed the highest consideration amongst the then most powerful nations, both of the east and the west.

Of the first inhabitants, and the settlement of the island, Strabo gives one account and Pausanias another; but be their origin what it

may, it appears they were early distinguished by their application to maritime affairs, and under Polycrates became of considerable power and consequence. Indeed, under his command, they conquered Lesbos, and some other islands, and possessed no inconsiderable fleet. The tyranny of Polycrates becoming excessive, they tried to throw off the yoke, but were defeated in their attempts, and the island became nearly depopulated, and a great number of the exiles retiring to Crete, founded Cydonia.

Under the government of Polycrates, Anacreon, Democedes, and Pythagoras, found protection and reward. At his death his brother succeeded him, but the island only changed masters, and not its tyrants, and passed successively under the Persian, Lacedemonian, and Athenian governments. When under that of the Athenians, the people revolted, and nearly expelled them from the island. During the absence of Pericles, they gained some advantages over the Athenian fleet. On his return, however, they were defeated, and closely blockaded and besieged, when, after sustaining a blockade and great hardships for nine months, they surrendered. Their walls were demolished, their navy destroyed, and they were forced to pay all the expenses of the war—a sufficient proof of their wealth. This was about 429 years before our Saviour.

It now enjoyed comparative tranquillity, till after the Sicilian expedition, when the Athenian fleet rendezvoused there. They considerably assisted Alcibiades at the Hellespont.

The island at length became subject to the Egyptians, and subsequently to the Romans, who contributed not a little to the embellishments of the city, judging by the inscriptions still existing. The Genoese, and afterwards the Turks, became masters of the island, and in 1560 it was governed by a Turkish Basha, who, finding it nearly uninhabited, repopled it by contributions from different parts of the Archipelago, from whence the names of several villages, as Metelinus, Vourlotes, Fourni, Albanetico, and it still possesses remains of its different masters.

Amongst the most remarkable works in the island, was the temple of Juno, of which only one column now remains. This column, which is of an extraordinary architecture, has been displaced from its perpendicular position by an earthquake, and the capital has fallen, and is broken.

It is plain, and consists of pieces about four feet high, and very beautifully fitted, the joints being in some places hardly visible. The base of it is unique, consisting of a solid piece, encircled by nine rings, of a very simple style; but, as it stands in a corn-field, and is nearly covered with earth, and I could procure no assistance, I am unable to give the depth of the base. After some search, I was fortunate enough to discover the bases of two other columns, one close to the column, and the other at some distance, in a straight line, running north and south; and allowing these two bases to be the extreme ends of the temple, the whole length appears to have been ninety-six fathoms, or 576 feet; the diameter of the columns is six feet—and if we allow three intercolumniations, it will give twenty-four columns in that face. Local tradition says, there were once two rows of columns, and twenty-four in each row, in a direction north and south, and two other

rows east and west, consisting of twelve columns each. This temple was destroyed by the Cilician pirates seventy-one years before Christ, and was repaired by Augustus, and succeeding Roman emperors, amongst whom Adrian seems to have been conspicuously liberal in his assistance and adornments. Herodotus mentions this temple as a surprising work, and likewise mentions two other works as of great magnitude, namely, the Mole at Port Tigani, and a subterranean aqueduct for the purpose of watering the city.

The mole, which was carried out into six fathoms water, and about 250 fathoms long, is now washed down, and forms a shoal with one fathom, and in some places two fathoms water on it. There appears to have been a lighthouse at each extremity, as the foundations are clearly visible. It once, no doubt, formed a good and secure port, but at present it is perfectly unsafe, with a southerly wind. There was also an inner mole, forming a small port under the walls of the city, but it is now nearly filled up, and merely affords a precarious shelter for small boats. On the ruins of the old mole the Genoese have built a small one, about 150 yards long, out of the rubbish of former buildings.

The aqueduct mentioned by Herodotus was eight feet high and eight feet broad, and commences at the back of the hill on which the old town was built, at a small chapel called Aythe, and from the hardness of the rock, must have been a work of considerable labour; it passed entirely through the mountain, and was seven-eighths of a mile long. It is only possible to trace it a small distance from the chapel, being entirely filled up, and its egress is nowhere to be found, nor could the neighbouring villagers point out the probable place.

Besides this aqueduct, there are the remains of two others, for the purpose of bringing the water from Milas to the city. They are easily traced, and are built of small stones, in some places mixed with brick, apparently Roman, and probably the work of Adrian.

The walls of the ancient city are still in a tolerable state of preservation, and built of grey marble, without cement, about twelve feet thick, and have been erected with great care, and highly finished. They vary in some places in point of architecture, being, though principally of regularly-squared stones, in parts of Cyclopean style; this does not often occur, and is of the latest date of that style of building. Towers occur frequently the whole way round the walls, of very solid masonry.

The high road leading from the city towards the Temple of Juno was carried over a small morass just outside the walls, upon arches, of which remains are now visible. On the right of the road, near an angle of the old city wall, is seen the foundations of a small circular building of white marble. At the death of Polycrates, a statue was erected to Jupiter Liberator—may not this have been the pedestal? Herodotus says it was erected outside the city gate.

With respect to the other antiquities of this island, there are many remains of buildings and walls of a much older date than the city, particularly on the west side of the bed of the river Metelenus, where the fragments of columns, almost entirely decomposed by the action of the atmosphere, and other causes, attest this spot to have been the site of an ancient tower of large dimensions—the wall, of Cyclopean

architecture, runs along the face of the hill a considerable distance, till lost amidst accumulated brushwood and rubbish. Mention is made by Herodotus of a fort situated behind the city, and I fancy near this site, from which the Samians sallied out, and defeated the Lacedaemonians during their blockade. Some remains behind the citadel still existing may have been the walls of this work. Two temples to Neptune are mentioned as having existed on the island. One mentioned by Anarcharsis, as standing on the point forming the east side of Port Tigani, of which the foundations are to be traced still. It appears to have been one of small size. The other in the entrance of the straight I could nowhere discover. Besides these remains, the whole space within the walls of the old city is covered with fragments of white marble columns, some fluted and others plain, with numerous Corinthian capitals.

These beautiful remains are now fast disappearing, being broken up for the purpose of building.

The people on the spot say that Logothite, the former governor, has many valuable statues and inscriptions, and many more are concealed by the peasantry in the hopes of selling them to strangers. Near the summit of the hill on which the citadel is built, on the south side, stands a small chapel—it is at the entrance of an extensive cavern in which there is another small chapel.

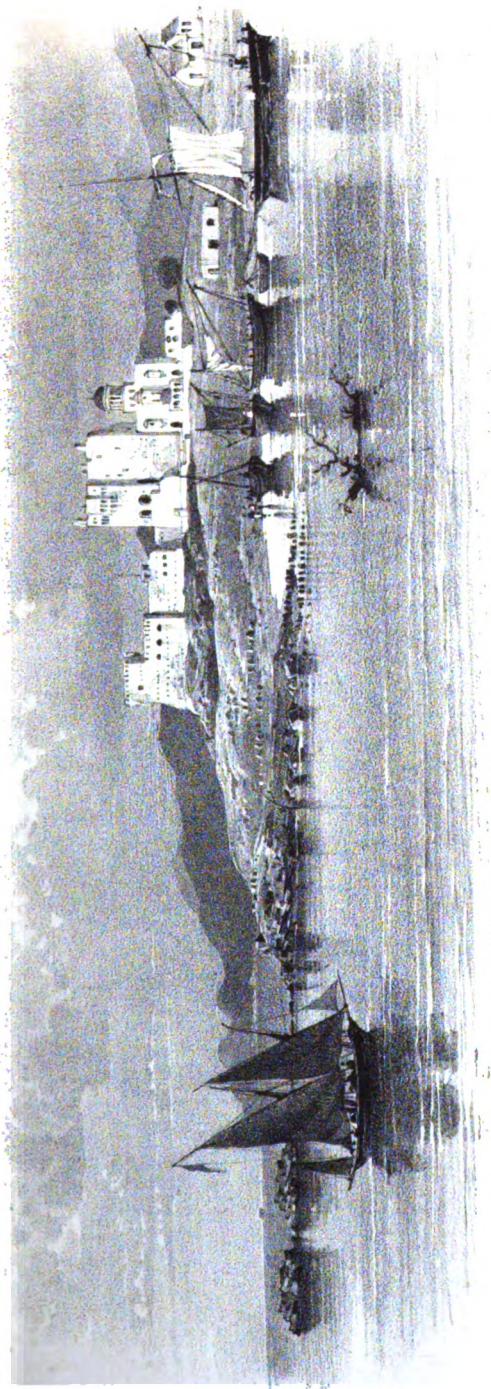
At the foot of the hill below the church, a little to the westward, are the remains of the theatre, in pretty good preservation.

The dens of the beasts are still perfect—it is easily found by a locust-tree growing in the entrance. The remains of the other buildings of the ancient city are of great solidity, and very numerous. There are only a few modern houses now standing, round the edge of the old harbour of Tigani. No other remains of antiquity of any consequence are to be found. Some faint traces of the town of Astypalæ are still to be seen in Port Mulibraham, formerly the port of the Gullus. This small port is secure for small vessels. Great quantities of wild liquorice overrun the shore.

Part of a Cyclopean building stands on Cape Neptune, the western point forming the harbour. There was also a lighthouse on this cape of white marble; it is now entirely broken up into small fragments, and forms a small battery commanding the entrance of the strait, which is about nine-tenths of a mile broad.

On the opposite side there is a similar foundation, and which, from circumstances, I have no doubt was a lighthouse, for the entrance of the passage being nearly opposite to that on Cape Neptune. The passage is broken by a small island nearly in mid-channel, and another smaller one close to Samos, anciently called Narticis, and almost level with the water. The road from Vathé to the plain of the Metelenus possesses little interest, when the high state of cultivation of the surrounding fields, combined with the view of the strait, and the coast of Anatolia, and Mount Samson, in the distance, forms one of the most beautiful scenes in the island.

The road from hence to Kastro is for some distance through groves of olive trees, occasionally varied with locust trees, mingled with dwarf oaks and firs. Near the entrance to the old city the trees disappear from the road. The few houses, and modern castle, is now



In Stone & L. Hughes.

MODERN CASTLE, AT PORT TIGANI, ISLAND OF SAMOS.

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See also, the "Samos" 1866.

called Kastro. From Kastro to Cora the road follows the course of the ancient aqueduct, the plain through which it lies being laid out in corn-fields and vineyards. The town of Cora, once a populous place, has of late years much diminished in size and consequence, by reason of the great emigration which has taken place at different periods, and is now small and of little importance. It is well watered and well situated, being about one hour and a half's ride from Metelenus.

[To be concluded in our next.]

REPORT OF THE SELECT COMMITTEE OF THE HOUSE OF COMMONS
ON SHIPWRECKS—REMARKS ON THE ADVANTAGES OF SOLID
BOTTOMS, ETC. ETC.

To the Editor of the Nautical Magazine.

SIR,—This report, as you justly observe at its conclusion, (given at length in your last October number,) “affords room for much grave and deliberate consideration,” and “bears ample testimony to the zeal and diligent inquiry of the committee;” and I will add, will be a lasting honour to the able chairman, to whose perseverance and knowledge of the subject the public is much indebted. Although it is quite certain that Mr. Buckingham had more than ordinary difficulties to encounter, owing to prejudiced and interested parties (and I may perhaps add, ignorant ones) offering all sorts of opposition to his enlightened views, yet it is to be hoped that he will not fail to follow up the recommendation of the committee—to bring in a bill the next session of parliament for the appointment of the “Marine Board” therein suggested—to enquire into the several points which the committee in this report state as causing such enormous loss of life and property, and which it is to be presumed the public begins to perceive is an actual tax; and that the remedying of the causes, or the curtailment of them in part, will be as much a relief to the said public, as the taking off a million or two of taxes. That this is actually the bearing of the question, it is most desirable that “honest John Bull” should clearly understand—that it is the true one, never till latterly seems even to have been thought about; and too much stress cannot be laid on this positive fact of “*all losses at sea being borne and paid for by the public.*” This point once established, prejudice, ignorance, and interested opposition, will speedily be overcome; and such measures taken to effect all practicable improvements in our mercantile marine as will be an honour to the age in which it takes place, and will immortalize the able chairman of the committee who commenced (and it is to be hoped will complete) such a great undertaking.

To aid, as much as lies in my power, these views, I now again beg to occupy a few pages of your work, in adding my humble endeavours to expose the defects of the system acted upon in the construction and management of our merchant shipping.

On this subject I have, through your magazine, already said a good deal; and I cannot but be vain enough to believe, that “Mercator” has laboured to some purpose in drawing attention to the defective construction of our ships, having reason to know that his letter, pub-

lished in your truly nautical work, in last April and May numbers, was well considered by some of the committee of the hon. house; and my suggestion therein of a "Marine Board," I cannot help also thinking may have been adopted in consequence. To avoid lengthening this letter unnecessarily, I would, for detail of my exposure in naval construction, (as applicable to our merchant ships,) suggest a perusal of the letter alluded to, as containing, I boldly affirm, incontrovertible statements on the subject.

I exceedingly regret, that at present I am prevented from giving that time and attention which I cannot but be satisfied I could usefully devote to this subject; I therefore purpose on this occasion only to notice some of the leading points referred to by the committee in their report.

The report being divided under different heads, I will commence with Nos. 9 and 10, wherein it is stated, "*that the amount of property lost at sea annually, probably amounts to three millions sterling, and the loss of lives to one thousand;*" and it adds, "*that, however this property may be protected by insurance, the loss does not the less fall upon the public.*" This effect I have alluded to in my previous letter, and it cannot be too often repeated, as well as that, as the committee justly observes, honest John "*has also to pay for the support of many widows and orphans, which this loss of human life entails annually upon the public.*"

The loss of life and property here deliberately stated by the committee to be continually taking place, does really call for investigation, to ascertain whether or not it can be in any degree lessened—its total annihilation no one will suppose any human means can effect, but that a very great reduction in its amount may, is clear to me; and such a view seems to be taken by the committee, as they go on to enumerate a terrible catalogue of evils, to which they fairly consider such losses may be attributed, and that nearly the whole of such evils are within the power of a properly-constituted "Marine Board" to cure or lessen, no one can hardly deny.

The evils therein stated, as causing so much loss, are—1st, Defective Construction of the Ships. 2nd, Inadequacy of Equipment. 3rd, Imperfect State of Repair. 4th, Improper and Excessive Loading. 5th, Inappropriateness of Form. 6th, Incompetency of Master and Officers. 7th, Drunkenness of Officers and Men. 8th, Operation of Marine Insurance. 9th, Want of Harbours of Refuge. 10th, Imperfection of Charts.

It must be quite apparent, that on all these evils at least *some degree of remedy is possible*. On each I will offer a few short remarks; and I think the conclusion may be come to, that they may be so far lessened as to leave all future losses to the only causes that should effect them—the elements, and occasional errors men will ever be subject to.

First, as to defective construction. For brevity sake, I must on this head refer to my previous letter, already alluded to. The committee indeed seems to have taken this as a point not to be controverted; and it is worthy of remark, that since this subject has been brought forward by Mr. Buckingham, no one, as far as I know, has ventured to deny the fact, that the present method of constructing the British

merchant ship, "is the most absurd proceeding under the sun;" and the committee taking, I say, this as a point settled, only observe, "that such defective construction seems to have been mainly attributable to a system of classification which held out to the public, ignorant of ships, that the quality of one depended altogether upon its age;" which would be much the same as to say, that the new houses built by speculators upon building leases, are stronger structures than Dover or Windsor Castles! The absurdity of this method of classification has been seen, and, as the committee observes, "a new and improved method has been adopted;" and which new method, though I will concede is apparently an improvement, is yet so far short of effecting good to the extent required, that I will assert, that nothing short of what I have suggested in my previous letter will do, which is, that a "Marine Board" be established, to see that no ship goes to sea, except in a fit and proper state, without reference to age. Who ever entertained a notion that one British man-of-war, for all the purposes of strength and safety, is not as good as another? Into whose head did it ever enter to enquire, when he had a million of dollars to ship, or wanted himself to embark, whether a British man-of-war was one year old or twenty? They are all effective alike; and why should not merchant ships be the same?

Next comes inadequacy of equipment and repair. These two points are so notorious, that remark seems unnecessary; and to remedy which nothing short of actual prohibition will suffice, to prevent unprincipled and ignorant people drowning seamen, and taxing the public, as they have hitherto done. And the same observation applies to the next head—"Improper and Excessive Loading;" to which I will only add, that this is a cause of loss few people have adequately considered. I will venture to state, that nearly all of the losses by *foundering* at sea are to be attributed to this evil; and especially I believe, that during the last war, the foundering of the ships of the East India Company was owing to this cause alone! and that, generally speaking, the sugar loaded ships from the West Indies come home in that state of loading which renders them unfit to encounter bad weather; and that nothing but the fine season of the year at which most of them cross the Atlantic, enables them to arrive so safely as they do. The practice alluded to by the committee of lumbering the North American ships upon deck, *is so monstrously unsafe*, that it must be one of the very first things which an effective "Marine Board" will put a stop to. The awful accounts which are to be read almost daily in the public papers, of the losses and sufferings occasioned by this wicked practice, are such as one might think had been ere this sufficient to deter people from it. But it is only a proof of the utter impossibility of controlling, by any thing short of actual prohibition, the inordinate love of gain. Except in such short passages, and in such sort of weather, as when a *raft* can be trusted, (as, for instance, from the Danube to the Bosphorus in the summer season,) should a ship be allowed *to be converted into one*, by excessive loading upon deck.

Foreign competition is also alluded to in this part of the committee's report—whereon, in passing, I will merely observe, that I do not admit it to be a subject properly received at present, and consider

it one from which no real fear is to be apprehended. If otherwise, I cannot but think that I have already shewn in my previous letter, the most effective means of rendering British merchant ships far beyond all competition whatever.

Next comes "Improper Forms of our Ships," and suggests very properly that the old method of measurement has been the cause of this crying defect. That a British merchant ship is in respect to form the most absurd of all human constructions, it will not be long before all the world will be found to acknowledge; and conceited "honest John Bull," will with shame be obliged to confess, that on this score every other people under the sun beat us "out and out." I know this is an unpopular observation, and that, when I have ventured to make such, and referred to the Americans as worthy copying, I have been laughed at; but this is such a crying evil as the public cannot much longer be deceived in. That the new mode of measuring ships for tonnage, and which was intended to remove the cause of this evil, has not yet been attended with the good effect one might reasonably have expected—I attribute in a great measure (next to the obstinate prejudice of "honest John") to the difficulty people have of understanding it; and to those who can in any way comprehend it, considering it one which must be altered, and therefore they can have no confidence in constructing ships subject to such uncertain influences. On this subject I will refer your readers to my letter published in your work for February, 1834, in which I think I have pretty clearly shewn that nothing would so well effect the improvement in our ships' forms and dimensions, *as the total abolishing of all charges collected upon ships' tonnage, the amount of which should be transferred to their cargoes.* I came to this conclusion many years ago, from seeing that in all countries where this system was acted upon ships were constructed in respect to form as they ought to be.

We next come to "Incompetency of Master and Officers." It is to be feared, that on this point the great diversity in the nature of the employment of British sailors will form a considerable obstacle to any classification of them, so as to point them out, as fit and competent persons, for every different sort of nautical duty. For instance, the master of a mere coasting craft, though perfectly unable either to read or write, *may be* a very competent person for his business; and to lay down any rule which should require even a very moderate degree of learning in the art of navigation, as a requisite to the command of a vessel, would be found to incapacitate a vast number of people from the charge of them, who are really quite fit persons for the carrying on of their duties; but, perhaps, allowing any one who was sufficiently *a seaman*, and who had proper local knowledge and practice, as qualified to take charge of a coaster, the next class fit to take a vessel out of sight of land should certainly be required to know how to take a meridian altitude of the sun, and to work "a day's work." For a master, and *mate*, to whose care a ship is entrusted across the western ocean, or within the limits of the Cape of Good Hope and Cape Horn, it might be reasonably expected that they should *understand thoroughly* the use of chronometers. And I think the highest attainments in navigation should be required from every commander, and at least two mates, who ventured to navigate a ship beyond those limits. Every

thing that would advance the respectability of these classes should certainly be adopted; therefore the recommendation of the committee *that the necessary acquirements should be insisted upon*, is decidedly good; and the next subject to which the committee comes may be included in this observation, namely, "Drunkenness of Officers and Men." But how to keep them sober, by any other means than improving their education and respectability, I fear will be a difficult affair, and I apprehend in no other way to be got over than by such regulations as will induce men of a more respectable class of society to bring up their sons to the sea; and to effect this, I consider the letters upon the "Defective Discipline of the Merchant Service," by "A Master of a British Merchant Ship," which have appeared in the United Service Journal and the *Nautical Magazine*, as well worthy of attention. The committee very properly points out the subject embraced in the letters just alluded to as one of the very first which the proposed "Marine Board" should take in hand, with a view, as they observe, "*to the completion of such a code of law as should clearly and accurately define the relative duties and obligations of ship-owners, officers, and seamen, to supply the remarkable defect under which Great Britain now labours, in being almost the only maritime country in the world in which no such special code of maritime law exists.*" When this is effected, and in such a manner as to uphold the authority of a commander, and the officers of the merchant service, I am of opinion with the "Master of a British Merchant Ship," that you will find such a class of men in these situations, (and not till then,) as will not require any regulations as to their *not getting drunk*; and when the captain and officers are gentlemen, and properly supported by adequate regulations, it will be easy to keep the crew sober. The Court of Enquiry recommended by the committee to be held upon occasion of all losses, would clearly be attended with the best effects, and would not only be an inducement for respectable and properly qualified men to take charge of ships, but it would insure to such class, and to such only, an adequate remuneration, and go far to deter those of a contrary description placing themselves (or inducing owners to place them) in situations where their ignorance, incapacity, and misconduct, would so certainly become exposed. And this Court of Inquiry might be made further useful, and perhaps answer, to remedy the next head of evils to which the committee draws attention, namely, the "Mischief of Marine Insurance." In my last letter I suggested, that no loss should be settled by underwriters, except after investigation of the strictest nature; no payment should be made, but after the clearest proof that no fraud had taken place, nor, that anything more than a *reasonable value* of the property had been insured. That crying evils are continually arising from the facility of recovering from underwriters, and insurance companies, what was sent to sea in an unfit state, there can be no question. But on this topic, Mr. Editor, you have such an able and zealous correspondent in Mr. Ballingall, that I will leave the question in his hands.

On the two other points referred to by the committee, as evils to be cured by the appointment of the proposed "Marine Board," namely, "Harbours of Refuge," and "Marine Charts," I will not occupy your

space—the former being well advocated by others, and the latter, as I well know, being under the best management at the proper department of the Admiralty; and I will only now add a few remarks (which were postponed in my last, owing to its being sufficiently lengthy) on a very important point in naval construction, namely, the propriety and practicability of adopting in our merchant ships the plan of solidity up to the lower deck, which has been for many years found of such infinite advantage in our men-of-war.

The difficulty seems to be (there certainly is no other) in getting rid of the water which it is supposed *must* enter a ship, to which I reply, first and foremost, that it *does not follow* that water is to enter in the degree here supposed, admitting the ship to be what she ought to be in construction, and consequent strength. It is no uncommon thing, in the solid bottomed men-of-war, to *swab the pump well quite dry*; and, except when water is *pumped or turned in*, there is not even the least *damp* to be found in it. It is not intended here to enter into any arguments in respect to the superior strength and safety of solid bottoms; the advantages in every possible view are so apparent and so immense, that it would be an insult to the commonest understanding to suppose they can be doubted. The adoption of complete solidity as high as the lower deck, would render a merchant ship so immeasurably superior to those of the present day, that no comparison as to the safety of the two could be made. This point once admitted, we will suppose for a moment that some water does, notwithstanding, find its way inside; the question then becomes, How is such water to be got to the pumps without damaging the cargo? Now, although I have admitted, for the sake of argument, that water *may* get into ships, notwithstanding all precautions, yet, this I will maintain, that through a real solid bottom, well fitted and caulked, no more water will, in all human probability, ever enter, than that quantity which is to be found to do so through various sources in merchant ships at present, and which actually finds its way *through the ceiling*, before getting to the pump-well, and which water, if it does not damage the cargo, it is owing to *the same being properly dunnaged*. That water is calculated upon so entering at present, every one knows, at all acquainted with ships, and their loading-dunnage betwixt the ceiling and the cargo, is absolutely necessary to exonerate the owners from the payment of the damage that may take place from the want of it. This precaution was even carried so far in the East India Company's ships as to require battens of certain dimensions, and at certain distances, in every part of the hold. And what were all these battens, and this dunnage for? To let the water pass down to the pumps, *betwixt the ceiling and the cargo*. Then, I say, only use the same precaution with the ships built solid which you do at present, and the difficulty vanishes, even supposing that the same quantity of water enters into the inside of both ships alike; which, however, now that I have met the difficulty, which I have gratuitously admitted, I positively protest against. Objections have been started against solid bottoms, in respect to the difficulty which it is supposed might arise to ships in ballast, with grain, or other such cargo, liable to choke the pumps. Those who start such objections, surely, if they know any thing about a ship, can hardly be serious. For the information of those

who do not know, I will tell them what this so-much valued ceiling is, and I will defy any one to contradict my statements of it, when I say, that, with the exception of a few river-built ships, and *perhaps* a very few others indeed, the ceiling is ineffective altogether for any purpose of either strength or safety; and let any unprejudiced man go on board any north country built ship, of a few years standing, and satisfy himself at once, from a bare inspection, whether or not this is the case. In the first place, let him be reminded, if he does not immediately see its defects, that it consists of *slabs*; with the fair side to his view, it is the *outside cut* from the tree, in sawing it into plank; and, in working it for a ship's ceiling, that part which was nearest the outside of the tree is put next the ship's side—the edges of each plank being made to appear tolerably fair to the looker-on; and when the ship is new, to the uninitiated it might be supposed all very correct carpenters' work, and that it was fitted with surfaces, touching, as a piece of good carpenter's work should do, instead of the contact being *only upon the inner edge*. As a piece of work intended to constitute strength, it is an insult to state such to the commonest mechanic. But it is not so much with an idea of exposing it on this score that I am describing it, as to combat its utility in preventing the choking of the pumps. In a very short time, either from violence received by taking in cargo, and moving it about in the hold—from a rather trying *pinch* of a crowbar, often *dug in* at its *sharp point*, to set a cask or package into its place—the occasional operation of the *fangs* of a pair of screws turning over, or lifting a good heavy piece of timber, or other weighty goods, and many *other little delicate trials*, this precious ceiling has to encounter, not forgetting rats, and other vermin; and, to say nothing of the speedy decay of two surfaces thus brought into *partial contact*, (*and which surfaces consist as often of sap as they do of heart*,) this inside coating, which I seriously assert was in the first days of the ship *worse than useless*, becomes literally riddled, and will neither prevent ballast, grain, nor all kinds of filth and abominations, getting in betwixt the timbers, and from whence its escape is partial, and, in the small portions which, after all degrees of decomposition and putrefaction have been undergone, finds its way to the Limbers, and, perhaps after months, or years, is taken out in that state which nothing short of a *chemical analysis*, could enable you to even guess at its origin. This, observe in the mean time, has in various places *choked up the channels where the water would otherwise have passed down to the pump-well*, and consequently, perhaps in fifty places, it comes oozing out of *seams* and holes fully ready at all parts for its egress, and *is here at once as much in contact with the cargo as though the ship had a solid bottom*. That the ceiling of a ship does not in fact prevent the choking of the pumps every body knows; the only way to prevent which, with a cargo like grain, is to use mats. And as to sand ballast, if a ship makes much water, and depends entirely upon her ceiling, it inevitably gets to the pumps, and chokes them. This, however, in the solid bottomed ship might be readily avoided, by dunnaging with wood round the pumps for a few feet (the heel of which pumps should be admitted about one inch into a small space cut down three or four inches into the solid) and covering this with mats or bags, *I will maintain would most effectually prevent the choking of pumps*, even if bal-

lasted with the finest sand. I think this is what Mr. Ballingall would call a "percolator;" it would, I am convinced, be very effective, and, with the ordinary care of applying dunnage, would decidedly preserve any cargo much better than is now the case, when almost entire reliance is placed upon that precious part of a ship called the ceiling, which, of all the useless and absurd things which are so plentifully to be found on board a British merchant ship, is the most insulting to common sense.

I have, however, other suggestions to make in aid of solid bottoms, in reference to this point, of a passage of water betwixt the cargo, and ship's side, and bottom. The first and most effectual after dunnage is, to *build the ships with more rise of floor*. Can anything be much nearer an act of insanity than the old, and indeed present practice? A ship is built, like a box or coffin, of such relative proportions that she will not stand up in the position which the wiseacre who planned her says she is to sail in. The bottom of this ship is formed at right angles with the side, and, from the want of proper proportions, (which I should call *natural stability*,) no loading hardly will enable her to sail upright, and generally she is in that state that, in bad weather, *one of her bilges is in fact her bottom—and here is stowed cargo*. If the ship is not lost, before the commander finds out that her usual inclination is with her masts forming about the same angle with the horizon which they do with the vertical; why he will naturally, the next time he loads her, put the requisite quantity of dunnage in these *useless bilges*, to save the cargo. I say therefore, now the cause is removed which produced the necessity for building such monstrous absurdities, namely, the old method of measurement, give our ships more beam, and, *by cutting off this useless space at the bilge*, (where it appears cargo cannot be safely carried,) give them *more rise of floor*, which, by collecting *speedily* all the water that may enter a ship, alongside the keelson, admits of its being readily pumped up, before it can accumulate to any dangerous extent either to ship or cargo. Now, this proposal of building a merchant ship with more rise of floor requires some farther discussion, and such reasons shewn that it is right, as must not only be strong, but something more, to meet the long-standing prejudices which I am well aware exist in favour of the flat-bottomed ship. Whilst the old system of measurement was in operation, and shipping were enormously taxed, upon such defective and mischievous method, it must be admitted that the very *flat and long floor* was a necessary part of the system adopted in constructing ships, to avoid such taxation. This objection is removed, but it has become an inveterate prejudice to believe the plan is, notwithstanding, right; it is even supposed that a ship is stiffer under sail from her flat bottom; which notion, *whilst beam was denied a ship*, (the only proper method of creating stability,) was sufficiently correct, inasmuch as it enabled a ship to carry *lower down* the same quantity of weight; and, moreover, from the long floor, or, the same thing in more easily understood terms, the carrying the breadth far forward and aft, the ship in effect presented broader sections towards each end, and consequently *had more effective beam* when in ballast. The alteration in the method of measuring ships renders all this scheming to reduce nominal tonnage unnecessary, and no doubt a better form will be the consequence; and which better

form I say is to effect all the required stability by increased beam, and secure a *certain additional safety to the cargo*, by forming the bottom so that the water will immediately find its way to the pumps; and I purpose next to shew that this alteration will be attended also with increased strength, and less cost in building the ship; before which, just let me shortly observe, that, as respects dry harbours, good bilge pieces will most effectually answer all the purposes of the flat bottom.

As regards strength, it is quite certain, that the square is the weakest, and the round the strongest form, that any mechanical construction can be put into. I remember seeing a ship-builder, opening his rule out to a right angle, represent one leg of it as the ship's bottom, and the other as the side; and moving the legs, say, that the angle formed by the hinge joining them, was the bilge of a ship, and the manner in which working took place in that, *the weakest part of a ship*—there is no doubt whatever, of this short turn of the bilge being the very weakest part of a ship, and it is that, *which should unquestionably be the strongest*. Let any unprejudiced person but go into a building yard, and look at this part of a ship, as her timbering is in progress; and I will answer for the absurdity of it being apparent: it is frightful to look at, and the more so when it is considered, that on a ship's getting on shore, the first lurch she takes, is to be sustained by this very part, to the strengthening of which, no art whatever is even thought of, but is left to depend upon a few pieces of generally grain-cut timber. Would the most blundering joiner who ever made a box, if he knew that his box had to sustain violence, make one without something like provision against change of form? What is the operation when such ships take the ground? the whole weight of the ship rests upon her keel, and the floor-heads and bilge on that side she heels over to—the same side (the upright part) going over still more, as the shipwright showed by his rule. Now, supposing the floor of a ship, in this position, instead of being quite flat, had a good easy moderate rise, let such forms be drawn and shown in the positions they would take on getting on shore, and see which common sense points out to be the strongest; and for argument's sake, carry the matter to the extreme, and suppose the ship to be formed a complete circle, and see what would then be her powers of resistance; and, modify this down to the nearest perhaps it has been approached in large ships, by Sir W. Symonds; when his ships take the ground they rest upon their keels, no other part being injured, unless materially left by the water, when that takes place they present a large and fair surface of bottom, upon which to be supported; whereas, the flat ship takes two or three awkward lurches, strikes against the floor heads, almost at a point, and bilges at once (by-the-bye, the term "*bilging*," which implies "a breaking in of a ship's bottom," is well and appropriately converted into a substantive, to designate that part of the ship so very liable to the operation the verb is intended to describe): *had the Figue frigate been a flat ship, she never would have come off the rocks*,—that is clear to me. I will only now mention the other view, which perhaps if more generally taken, would be a stronger argument than all the others put together, to induce a different form of ship, and a more easy rise of floor; and that is, that the ship could be built cheaper,—

a circle contains the largest space which a given line can embrace; and a square, somewhere about the least, (of common forms applicable to the argument,) therefore it is quite clear that a shipwright could give you a ship, whose section, for instance, should form a semi-circle, containing an equal number of cubical feet, for less money than he could, by forming her like a coffin—to say nothing of the greater facility and cheapness of getting the timber—to construct the former rather than the latter, those precious grain-cut, short, weak timbers, forming the sudden turn of the bottom of a ship, as at present built, being not only the dearest description of timber, but very often difficult to be obtained at all.

Should these observations tend in any degree to remove objections to solidity of bottom for our merchant ships, I am quite sure that you, Mr. Editor, will not consider the pages of your work misapplied in their introduction there: and not to occupy more than is necessary, I will conclude, with best wishes for the success of so truly useful and *British* a work as the “Nautical Magazine.”

Mr. Editor,

Your most obedient servant,

London, January, 1837.

MERCATOR.

DEFECTIVE DISCIPLINE IN MERCHANT SHIPS.

To the Editor of the Nautical Magazine.

SIR,—In the last number of your very valuable work, I have seen a letter by “The Master of a British Merchant Ship,” on the defective state of discipline in merchant ships.

Now, as it behoves every well disposed subject in this maritime country, and more especially those who are more intimately connected with nautical matters, to expose any defects in our laws relating to the “discipline of merchant ships,” and the great detriment arising therefrom to ship-owners, merchants, and the public, I venture to lay before you some facts which occurred on a voyage from which I am lately returned, and I do hope that the noble example set us by “The Master of a British Merchant Ship,” will induce others to publish some of the *many outrages* committed at sea on board *British merchant ships*, in the hope that the legislature may provide for the safety of the lives and property of his Majesty’s subjects, by framing laws calculated to support masters of ships in their office, instead of continuing those having no restraint on the lawless seaman in acts of rebellion and destruction of property, which invariably happen on board all ship’s sailing under our present system of mercantile maritime laws.

Shortly after we had cleared the channel, I found that one of my crew (possessing every requisite to complete the character of a ruffian) had made himself master of the forecabin; and, although a *negro*, the rest of the crew, consisting of BRITISH SEAMEN, had debased that once boasted name by succumbing to his will and pleasure in every instance, and were ready at any time, as opportunity might occur, and the event will shew, to support him in any outrage that his ferocious disposition might lead him to attempt. Being now master of the forecabin, his

next aim was to become the sole master of the ship, which at first he attempted by causing the crew to disregard the *miscalled* legal authority of myself and officers, by repeated insults and acts of neglect of duty; one instance of which was, to lose in one watch, two top-gallant studding sail booms overboard, which was repeated on the next occasion of setting studding sails, by losing two more. Now, as the weather, as is well known to all seamen, must be fine when top-gallant studding sails are set, there could be no excuse for thus wantonly destroying the property of their employers; their object, which was easily to be seen, was to put it out of my power of saying when sail should or should not be set, being "*sea-lawyers*" enough to know that this act could not be the subject of a charge for disobedience. Shortly afterwards, this *black* leader of a crew of "*British seamen*," (being tired of such trifling acts of insubordination,) altogether abstained from performing a portion of his duty, and when called upon by me to fulfil his engagement by obeying my orders, became most furious, and told me that he would see me d——d to b——ll first. This crisis having arrived, I felt myself called upon, as being entrusted with the ship and cargo, as well as with the lives of officers and passengers, to separate this ringleader of a mutinous crew by confining him in irons. The attempt was made; when they rose to a man to oppose it. From their numerical force, I could not succeed unless I used arms, which under any circumstances had better be avoided. And, being near the port of destination, I determined, (rather than have the blood of a fellow man on my conscience,) on letting things go on in the best way I could until my arrival there, depending on assistance from the civil authorities of one of our own colonies. But in this I was disappointed. In a few days after this affair, we arrived at our port, which being a bar harbour, and the tides at the time unfavourable for crossing the bar, detained us for a week in an open roadstead. Not daring to move out of the ship myself, being obliged to keep arms constantly by me, for protection against personal violence, my next care was to send a requisition to the authorities for assistance, which became more imperative at this period, by the crew refusing to do *any* further duty. And will it be believed, that I was left six days within the jurisdiction of British laws, on board ship at the mercy of a violent and mutinous crew, merely because the laws were either not explicit enough, or the magistrates of an English colony felt that their power was insufficient for them to remove this rebellious crew out of the ship, or to send a constabulary force to preserve the peace, while either myself or the mate might have gone on shore for the purpose of making the necessary oath to enable them to issue a warrant for the apprehension of the mutineers? During the whole of this anxious time, the ship was exposed in an insecure anchorage, with the crew on board certainly, but determined to do no further work, in which they persisted, leaving the care of the ship *wholly* to myself and officers, distant from every chance of aid (should occasion demand it) six miles. At last, they were taken out of the ship, and their conduct was investigated by two magistrates who committed them to jail, until the ship should go to sea. And in the cases of two of them, I might proceed against them in the Admiralty Court, on a charge of mutiny, provided I thought it expedient

to detain the ship, at an enormous expense to the owners, for the season. This was of course entirely out of the question.

Here let me digress, and ask why the laws between ship-masters and seamen are not reciprocal? The seaman can proceed in a *summary* way against ship-owners and masters for the recovery of their wages, assaults, &c., but the person, on whom the lives and property embarked on board the ship are entrusted, cannot have the like "*summary*" justice; and the only path open, and that a very crooked one, is the tedious, far distant, and expensive decision of the Admiralty Court. And as despatch is the soul of commerce, this dilatory mode of proceeding against offenders entirely defeats the object for which merchant ships were originally built.

In continuation, I should tell you of further loss sustained by the owners in this instance; and that which I would here call your attention to, is the trifling penalty (if it may be so called) on desertion, merely the forfeiture of the deserter's effects to the owners, if left behind them.

Through the insecurity of the jail in which these men were confined, they all managed to break it and effect their escape, leaving the ship in a place little frequented, and where seamen are scarcely to be procured, even at enormous wages, to make the best way out of it she could; and the ice at this period making in the harbour. However, at last, I succeeded in getting a *few men*, disguised as sailors, at a most exorbitant rate of wages, to take the ship home from North America in the depth of winter.

During the ship's stay in port, men were hired for the purpose of discharging and loading in lieu of the crew: the expense of this, as well as jail fees, all fell on the owners, through the insufficiency of our maritime laws, as there is no remedy against seamen in such cases, as I am advised, except a tiresome and uncertain action at law to recover damages, even admitting that they were worth suing. To add insult to violence, (on the ship's arrival in England,) one of these "Honest Jacks," who was indebted upwards of £11. to the ship, and had got a large sum for the run home in another ship, came down to the dock where the ship lay, bidding defiance, as the voyage was ended, to any proceedings I might take against him. Now, he was a *learned seaman*, and knew that an action at law for damages could be my only redress; and that a summary complaint before magistrates, such as these "*favourites of the law*" can avail themselves of, was not available to myself, or the owners for the recovery of the money due from him, and that there was *no* penalty for desertion.

Now, Mr. Editor, it may be said that these men *were* punished by being confined in jail, and that it was not the fault of the legislature if they broke jail; but, let me ask,—if the penalty for such conduct as I have laid before you, was within reach of the prosecutor, and serious enough to make them reflect a little before they embarked in such undertakings, as to dispute the authority of those placed in charge; and that they could be proceeded against in a summary manner, without, as the law now stands, appealing to the *distant* decision of the Admiralty Court, thereby detaining the ship, prosecutor, and witnesses, for an indefinite time, to the serious loss and disadvantage to owners, shippers, and all others concerned; would hey, I ask, have been so

likely to rebel? And further,—if the masters of ships were properly protected, should we hear of so many disasters at sea as we do? Most certainly not. As the law now is, in many cases the ship-master's mind is harrassed by the insubordination of his crew, when it requires all his energies and attention to avoid the many perils consequent upon a sea-faring life; nor in the moment of danger can he depend on the exertions of his disorderly crew, though the lives and property of his Majesty's subjects are at stake.

It will not perhaps be improper for me to state, that there was not at any time cause for complaint of the quality and proportion of provision, nor of the duty—the crew never having been disturbed, during the whole voyage, out of their regular night watches, care being taken to reef, tack, and perform any other necessary duty at the termination of the watch, or by the watch alone. All this was clearly proved and admitted by themselves before the magistrate.

In requesting the indulgence of your inserting this in your deservedly much-esteemed work, (to which I am a subscriber,) I hope that I may not be considered to have trespassed too much on your time and space, and trust that others may be induced to join in exposing the present "defective state of discipline in merchant ships," in order that our grievances may be looked into.

13th March, 1837.

A SHIP-MASTER.

HURRICANES OF THE ATLANTIC.—*Theory for avoiding them.*

[We shall be thankful to any of our nautical readers for a confirmation, or opinion from experience, of the suggestions here offered for evading these disastrous phenomena. They will readily see that they will benefit their brother seamen by making known that experience.—Ed. N.M.]

WE have already mentioned the deception which is occasioned by the progression of the storm, as a vessel drifts across it from the fourth quadrant into the first and second, with reference to the direction in which the wind *seems* to veer. (See p. 167, *et seq.*)

This is not, however, to be understood as being invariably so throughout the entire circle of operations. We shall endeavour to explain this more in detail, yet with as much brevity as the importance of the subject will admit. And as the employment of a diagram will very much assist the reasoning, we will endeavour to describe that which we have used. On a common sheet of paper describe four concentric circles with the respective radii of $5\frac{1}{2}$ inches, $4\frac{1}{2}$ in. 4in. and 3·8 in. Assume the upper part of the paper as north, and between the two outer circles lay off the points of the compass. The purpose of this compass is principally to mark the four quadrants, in one of which the vessel must first receive the hurricane, and a line should be drawn from E.S.E. to W.N.W. to direct its course.

Between the 2d and 3rd circle (for the phases of the wind) lay off the points of the compass, commencing by placing the east at north; the south will then be at the east, the west at south, and the north at west. *These points will show the direction of the wind which a vessel will have when in either quadrant.* Between the two inner circles draw arrows pointing from right to left under each point of the compass. Then in the

First quadrant, i. e. from north to east. *Wind* from south to east. The changes of wind, if a vessel be lying -to, will *seem* to take place from

left to right throughout, as the wind will draw round more southerly as the storm progresses to the north-west. If a ship scuds to the northward, the direction of the alterations of the wind will in a great measure depend upon her velocity, as she is crossing obliquely the course of the progression—if she keeps pace with the northerly advance of the storm, the wind will remain nearly the same—if she exceeds it, the wind will draw to the eastward—and if the progression outstrips her, the changes will be to the southward. In either of the latter cases, the variations will be few; and the westerly progression will soon cause her to be thrown out of the storm. A ship is not liable to enter this quadrant to the eastward of the N.E. verge. If standing to the southward with the trade-wind she would be liable to be taken aback; but if she is standing to the northward she will of course not be so.

Second quadrant, i. e. from east to south. *Wind* from west to south. A ship lying-to, with the wind from any point between S. and S.W., the shifts will be from the southward toward the west, *apparently* from *left to right*. If the wind be between the S.W. and the west, there will be few if any changes, as the ship will be near the posterior line of the progression—such shifts as may take place will probably be from the west toward the south. The vessel will soon be clear of the commotion. It is evident that a ship is not likely to fall under the S.E. verge; she cannot overtake the hurricane posteriorly, as its velocity exceeds hers. She may just touch laterally about the southern verge. To arrive in the second quadrant she must do so through some other.

Third quadrant, i. e. from south to west. *Wind* from north to west. A ship lying-to, the wind from the northward, will, as the storm progresses, draw round to the westward, from *right to left*, truly as apparently so. As a ship scuds to the southward and eastward, the wind will draw round in the same way as stated above.

A ship falling under the storm on any point in this quadrant will merely feel the *brush*. She will, however, be liable to be taken aback if standing to the northward with the trade-wind, on first entering the scene of operations.

Fourth quadrant, i. e. from west to north. *Wind* from east to north. If a ship lies to with the wind at any point between E. and N.E., it will appear to draw round from *left to right*, or from N.E. by E. to east. If the wind be between N.E. and north, the shifts will be from *right to left*, or from N.E. by N. to north.

If a ship is standing to the northward with the trade-wind, and falls into this quadrant, she will be liable to be taken aback; but not so if steering to the southward.

Under the N.W. verge, where the wind is at N.E., a ship being in the line of the progression, will drift probably into, or very near to the centre; which, on account of the sudden shifting of the wind there, should if possible be avoided, as there we consider the greatest danger to exist. If the vessel scuds under the same circumstances of winds, the changes will appear the same as above given, but slower in the first instance, and quicker in the second, for these reasons—that in the one case the points of change are receding from her as she advances; and in the other, they draw toward her approach, her velocity of course accelerating the alterations, and it will readily appear that the difference is occasioned by the progression of the storm to the N.W.

Mr. Purdy, in his excellent work, the "Atlantic Memoir," says of the hurricane of August, 1831, that the winds in the earlier part of the storm were from the northward, and in the latter, from the southward; from which it results that the gyration was from right to left. This was a true inference, because if the gyration had been from left to right, the first winds (the points being reverted) would have been from the southward, and the latter from the northward. But, if the storm had struck the island with the wind at E.N.E., and lastly at S.S.W. the changes would have appeared to the islanders to have been from left to right, or with the sun, although not in reality so.

It should be remembered, that under all circumstances the wind remains the same; or, in other words, under any given point of the horizon, the wind will be found to blow from a particular direction, *unchangeable*; so that, actually, there is *no shifting*, the changes observable being occasioned by the progression of the storm to the N.W., and the movements of a vessel within the circle of operations. From this peculiar character of the tempest, the course which a ship will pursue through the storm's area, as also the successive changes of the wind, become an easy problem to solve, after having noted the point from which the *first wind*, or the *first shift* is felt, *provided* there should happen no oscillations.

The very great advantages to be derived from an intimate acquaintance with the working of the theory seem manifest: it is therefore for the interest of the navigator that he studies it with care, dismissing from his mind at the time, his preconceived ideas of the action of the wind in ordinary gales.

Of the Trinidad hurricane of June, 1831, the same authority just quoted, says, "the wind, after shifting from east, *north*, west, and south, finally settled at S.W." This hurricane (if the winds are named in the order of succession,) must have had in the first place, an oscillation to the N.N.E. until the wind was at north, when it proceeded in the usual course to the N.W. If there should be no mistake in the naming of the winds, by those who noted the changes, the progress of this storm could not at first have been to the N.W., for if it had been so, the shifts would have been from the east to the south, and S.S.W., and with the latter the posterior verge would have passed over the island, and the raging of the wind have ceased. It is not improbable, however, that the first wind felt from the storm, was *north*, west would follow, and lastly S.W.; the east may have been the trade wind urged on by the advance of the storm from the S.E. The lateral oscillations or vibrations would account for such anomalies; but future observations must settle that point; we think it, however, highly probable that the hurricane has a vibratory motion as well as the common whirlwind.

Whilst under this state of uncertainty, it may perhaps be deemed necessary as a matter of caution, to consider the remarks here given, as not coming under the head of *general rules*. These will, however, apply in many cases, perhaps in most.

We have now arrived at a new era in the physics of the atmosphere, and it is to be hoped that the subject will not be lost sight of, and that our naval officers of talent will devote some portion of their time to the study of meteorology in general.

The practical utility of the theory of the western Atlantic hurricane,

must be apparent to all who are aware of the value of judicious precautions on the approach of such prognostics as usually precede these violent tempests; and truly careless, or bigoted to old notions, must that mariner be, who will not devote his attention to it, so as to be ready whenever he may be overtaken by a storm of that nature, to act in the best manner possible for the security of his vessel, his life, and the lives of his crew and passengers. A learned professor has remarked, that no one subject which we can study, has its instructions confined entirely to itself; every portion of knowledge which we can acquire, at once becomes the instrument of additional knowledge: this observation is exemplified in the single and simple operation of the wind gyrating round a centre from *right to left*; and such leads to the important fact, that by placing a ship in a certain position, according to the direction of the *first* shift of wind experienced in a hurricane, she will be enabled to avoid, with a prospect of success, the centre of rotation, where the greatest danger is to be apprehended! And if, sir, it lead to nothing more, it would be a most valuable discovery;—the saving of one human life from destruction is worth “a million times over” all the wonderful secrets which the indefatigable Mr. Cross has disclosed, although these are duly appreciated, and admitted to be truly extraordinary.

Some of the principal hurricanes which have happened in the West Indies during the last 123 years:—

28th	August, 1712	Jamaica.
28th	August, 1722	“
22nd	Oct. 1726	“
20th	Oct. 1744	“
2nd	Sept. 1751	“
3rd	Oct. 1780	“ The great storm.
1st	August, 1781	“
30th	July, 1784	“
27th	August, 1785	“
20th	Oct. 1786	“
20th	Oct. 1791	“
1st	August, 1795	“
3rd	Sept. 1804	“
19th	Sept. 1804	Bahamas.
25th	July, 1805	Northward of Barbados.
	Sept. 1806	Near the Bermudas.*
14th	Oct. 1807	Between Jamaica and Santa Marta.
3rd	August, 1809	Porto Rico and St. Domingo.
14th	August, 1812	“
12th	Oct. 1812	Jamaica.
1st	August, 1813	“
18th&19th	Oct. 1815	“
10thto12th	Sept. 1818	Cayman isle and Campeche.
19th	Sept. 1818	Altevela St. Domingo.
22d to 25th	Sept. 1818	Windward of Antigua.
21st	Sept. 1818	Barbados and Dominique.
7th	Oct. 1818	Port Royal, Jamaica.
1st	Sept. 1821	Bahamas. “
17th	August, 1827	St. Martin, St. Thomas’s isles.
12th	August, 1830	Isle of St. Thomas.
29th	Sept. 1830	Northward of Carribee isles.
23rd	June, 1831	Trinidad, Tobago, and Grenada.
10th	August, 1831	Barbados.
12th	August, 1835	Antigua, Nevis, St Kitts, St. Thomas.
	August, 1835	Barbados.

* Point of departure from West Indies not known; this storm dismasted H.M.S. Tartar, Capt. Hawker.

N.B. It will be seen that hurricanes happen more frequently in August and September than in any other month, and that in Oct. 1818 no less than five occurred between 10th Sept. and 7th October.

Of the foregoing it appears that there happened in

}	June 1.
	July 2.
	August 13.
	September 10.
	October 7.

LOCAL ATTRACTION IN SHIPS.

“The Pilots now their rules of art apply,
The mystic needle’s devious aim to try.”

THE variation of the compass as deduced from observation at sea in different parts of the world, was long considered by seamen as the true variation, or in other words, that it was the real angle which the magnetic needle makes with the true meridian. And although certain discordances in compass bearings were noticed at different periods by the navigators of former days, yet it nowhere appears that they discovered the cause of those discordances to be the iron distributed through their own vessels; the attractive power of which was continually acting with more or less force on the magnetic needle, sometimes in conjunction with, and sometimes in opposition to, the magnetic influence of the earth.

The celebrated circumnavigator, Captain William Dampier, in the account of his voyage to New Guinea, gives the earliest notice we have on record of this deviation of the needle from the magnetic meridian. In the quaint language of his time, he thus alludes to it: “Another thing that stumbled me here was the variation which, at this time, by the last amplitude, I found to be $7^{\circ} 38' W.$, whereas the variation at the Cape of Good Hope it was then computed, and truly, about 11° , and yet a while after this, when I had got ten leagues to the eastward of the cape I found the variation but $10^{\circ} 45' W.$; whereas it should have been more than that at the cape. These things I confess did puzzle me.” This irregularity was no doubt the effect of the iron in his vessel, and although Dampier had a shrewd enquiring mind, it was not to be expected that he should at once hit upon the discovery of its causes. Those causes lay concealed amidst the depths of science, and their discovery was reserved for the persevering efforts of men of the present more enlightened age. Aware, however, of the value of such observations, Dampier very properly recorded them with the view of assisting Halley in the construction of his variation chart,* and recommended all navigators to do the same.

* Halley published this chart, which was the first of its kind, in the year 1700. He had collected a vast number of observations of the variation, which having noted in their proper places on a Mercator’s chart of the world, he was enabled, by drawing lines through them, to trace the corresponding degrees of variation, or in other words, to show the course of the magnetic curves. Another chart of this kind was published by Mountain and Dobson in 1744, and another in 1756—7, and from the apparent facility of observing the variation, it was even seriously recommended to mariners as a means of ascertaining their longitude. The inefficiency of such means is now so obvious that these charts are at present used only for giving a general view of the amount of the variation in different parts of the world. Yeates published another chart in 1817, and more recently Professor Barlow has given us all the modern observations in a chart of two sheets, which he proposed to follow up by a variation globe.

We find nothing that throws any further light on the subject of local attraction until the time of Captain Cook, when the attention of Mr. Wales, who accompanied him as astronomer, was awakened by the differences which he found in his observations. He states distinctly, that "variations observed with the ship's head in different positions, and even in different parts of her, will materially differ from one another; and much more will observations observed on board different ships." Mr. Wales gives instances of these differences amounting to 10° .

The voyage in which he made these observations, lasted from 1776 to 1780, and in 1793, we find that the celebrated French naval surveyor, M. Beautemps Beupré when employed in the *Recherche* looking for la Peyrouse, abandoned the old system of using compass bearings in consequence of meeting with differences of several degrees in the variations." We may here remark that M. Beupré was among the first to adopt that excellent system of obtaining the true bearing by an angle referred to the sun's azimuth.

In 1790, however, the first direct mention of local attraction was made by Mr. Downie, when master of H.M.S. *Glory*, in Walker's treatise on magnetism. "I am convinced," says Mr. Downie, "that the quantity and vicinity of iron in most ships has an effect in attracting the needle, for it is found by experience that the needle will not always point in the same direction when placed in different parts of a ship; also it is very easily found that two ships steering the same course by their respective compasses, will not go exactly parallel to each other,—yet when these compasses are on board the same ship they will agree exactly."

But, notwithstanding the important discovery that such anomalies existed in a machine of so much consequence to the safety of ships as the mariner's compass, they still remained unheeded, until the return of Captain Flinders from the survey of Australia, when, in consequence of his representations to the Lords Commissioners of the Admiralty, he was directed to make a series of experiments on board one of his Majesty's ships at Sheerness.

The results of these experiments are thus stated:—

1st. That a compass gave different bearings of the same object when placed in different parts of the ship.

2nd. That when the ship's head was on the magnetic north or south, no effects arose from local attraction, proving that when the ship was in that position the attraction of the various masses of iron on board acted in unison with the magnetism of the earth.

3rd. That when the ship's head was east or west, the effects of local attraction were greatest, and that at the intermediate points the deviation of the needle varied nearly in the proportion of the sine of the angle between the bearing of the ship's head and the magnetic meridian to radius.

4th. That the maximum of variation, in the same compass, would be different in different parts of the world, or, in other words, that the force of the local attraction of the vessel varied with the dip of the magnetic needle, or in proportion to the distance from the magnetic equator.

Flinders died in 1814, and the subject of local attraction lay almost untouched, until Mr. Bain, a master in the Royal Navy, took it in

hand, and wrote a pamphlet on it, which appeared in 1817. There was a great deal of merit in this little production; all his were sound opinions; but, although his remarks and observations were accompanied with ample proofs of the importance of attending to them, he failed to give those plain and straightforward directions which the seaman looks for. The subject was lastly taken up by Professor Barlow—a name well known in the annals of science. The polar expedition of 1818 afforded an admirable opportunity for confirming still further the laws laid down by Flinders, as the ships not only passed through a considerable variety of variation, but necessarily approached the north magnetic pole. Constant observations were accordingly made on board the *Alexander* and *Isabella*, at the suggestion of the professor, and it was found, before they had nearly reached Greenland, that the compasses of one ship differed as much as 11° from those of the other, and that the same compass gave results differing 10° in different parts of the same ship. As the two vessels proceeded up Davis Straits the compasses became sluggish; and in the subsequent voyage of Sir Edward Parry, as he passed through Barrow Strait, they became totally useless—thus confirming the conclusion of Flinders, that, although the absolute magnetic force of the earth would be greatest at the magnetic pole, yet its horizontal or directive power would then entirely cease, having become gradually less in proportion as the angle increased, which the dipping needle makes with the horizontal plane. But while the horizontal needle is thus forsaken, as it were, by the earth's magnetic power, the various magnetic bodies in the ship which surround it, are still acting on it with a directive force which *relatively* increases as the directive force of the magnetic pole diminishes.

The discordances in the variations observed at sea, and the difficulty of arriving at the actual inclination which the magnetic meridian makes with the true one, can only be attributed to the want of a due observance of the foregoing facts. But these facts are now so universally admitted, that it is unnecessary to multiply proofs either of their existence or of the evil consequences which may arise from their neglect. We will therefore at once proceed to the best practical methods of determining the local attraction of any vessel, and of applying the proper correction for its effects to the compass courses.

There are two modes of effecting this problem—the first is, observing by a compass, on board, the bearing of a distant object on shore, while the ship makes a complete circuit, or passes through all the points of the compass. The second is by means of two compasses, one of which is placed on shore at any convenient distance, and the other remains on board, while the ship's head is made to perform a similar revolution.

The former method is the most independent, as it requires only *one* observer; but then it is necessary that the object on shore should be at the distance of several miles, in order that the parallax of the vessel in the circuit she necessarily makes, in order to place her head on every point of the compass, be so small as to subtend an insensible angle at the object. The distance requisite to fulfil the above condi-

tion will vary from four to ten miles, according to the scope of the cable, or the looseness of the moorings. Assuming this angle to be insensible, or so small as to be within the uncertainty of observation, the bearings then made of the object may be considered as taken from a single spot, and therefore, if it were not for the effect of local attraction, they would of course be all alike.

The correctness of this method evidently depends on the truth of the above assumption, but as a suitable object does not occur at every anchorage, we shall proceed to the second method, which is equally correct, but which requires the co-operation of another observer.

This method consists in taking the bearing of the compass on board from another on shore, at the same instant that the bearing of that on shore is observed from the compass on board. It is evident, that if the two compasses employed have previously agreed in every respect, that each pair of observations would be the reverse of each other, so that if the compass on board bore S.W. from that on shore, that of the shore would bear N.E. from the compass on board; but in consequence of the effects of local attraction the compass on board will, on almost every bearing, differ considerably.

We will now suppose that a ship lying at Spithead, having all her guns, and cargo, and spare anchors on board, is desirous of obtaining her local attraction by a single observer.

As it is necessary that the ship's head should be placed on each point of the compass, the opportunity of slack water should be taken, and a warp should be properly laid out to a buoy, or to another vessel, in order to secure her performing the revolution gradually. Select any well-defined object on shore, such as a remarkable tree or house on one of the most distant ridges. The azimuth compass should be employed, as it is fitted with sight vanes, and the circumference of the card is divided into degrees; but all the observations must be made from the binnacle, precisely over the usual position of the steering-compass.* Then, as the ship slowly presents her head to each point of the compass, the bearing of the object is to be carefully observed, and if practicable, a moment should be allowed to elapse after the ship's head arrives on each of the different points, so that no error may arise from the swing of the compass.

The bearings as they are obtained must be immediately noted in a table, arranged in the following form, the column No. 1 having been previously written.

When the north end of the needle is drawn to the eastward, the local attraction is marked —, and when to the westward +.

* Should it be inconvenient to place the azimuth compass immediately over the binnacle, select any other position for it *amidships* on the vessel's deck, and in either case let the direction of the ship's head be noted by both the compasses when the bearing of the object is taken, in order to obtain the bearing of it from the steering-compass, from which it may not be visible. The number of degrees between the ship's head and the object by the azimuth-compass, applied to the direction of the ship's head by the steering-compass, will give the bearing of the object from it, as well as if it had been actually observed.

No. 1.	No. 2.	No. 3.	No. 4.	No. 1.	No. 2.	No. 3.	No. 4.
Direction of Ship's Head.	Observed Bearing of Object.	Correct Bearing OfObject.	Local Attraction.	Direction of Ship's Head.	Observed Bearing of Object.	Correct Bearing OfObject.	Local Attraction.
North	N. 18 E.	N. 17 E.	+1	South	N. 14 E.	N. 17 E.	-3
N. by E.	N. 17 E.	.....	0	S. by W.	N. 16 E.	.....	-1
N.N.E.	N. 16 E.	.....	-1	S.S.W.	N. 17 E.	.....	-0
N.E.b.N.	N. 15½ E.	.....	-1½	S.W. by S.	N. 18 E.	.....	+1
N.E.	N. 14 E.	.....	-3	S.W.	N. 19 E.	.....	+2
N.E.b.E.	N. 14 E.	.....	-3	S.W. by W.	N. 20½ E.	.....	+3½
E.N.E.	N. 13½ E.	.....	-3½	W.S.W.	N. 22 E.	.....	+5
E. by N.	N. 13 E.	.....	-4	W. by S.	N. 24 E.	.....	+7
East	N. 12 E.	.....	-5	West	N. 24 E.	.....	+7
E. by S.	N. 10 E.	.....	-7	W. by N.	N. 25 E.	.....	+8
E.S.E.	N. 9½ E.	.....	-7½	W.N.W.	N. 25 E.	.....	+8
S.E.b.E.	N. 10 E.	.....	-7	N.W. by W.	N. 24 E.	.....	+7
S.E.	N. 10 E.	.....	-7	N.W.	N. 23 E.	.....	+6
S.E. by S.	N. 11 E.	.....	-6	N.W. by N.	N. 22½ E.	.....	+5½
S.S.E.	N. 13 E.	.....	-4	N.N.W.	N. 20½ E.	.....	+3½
S. by E.	N. 14 E.	.....	-3	N. by W.	N. 18½ E.	.....	+1½
	210½				333		
					210½		
					543½		

If time should permit, it would be advisable to repeat this series of observations, in order to guard against any mistakes, and if practicable, to swing the ship's head round in the opposite direction to that of the first revolution.

The observer having now filled up column No. 2 with the observed bearings, and being satisfied with their accuracy, he is to add them all together, making in this example 543½, which being divided by the number of observations, (32,) the result (17) will be the mean or true magnetic bearing of the object from the ship, and therefore 17° is to be entered on every line of column No. 3.

The differences between the figures in columns No. 2 and 3 are then to be regularly inserted in column No. 4, and as they represent the effect of the local attraction of the ship upon the needle in the binnacle, for every successive point of the compass, they cannot be more compendiously placed for the ready reference of the navigator in correcting his day's work. To prevent the chance of his applying them the wrong way, it will be prudent to mark them all with the signs + or - according as they are to be applied to the right or left of the course to be corrected.

Or perhaps a table of the points ready corrected, such as the following, might to some seamen be more satisfactory; but whichever table is adopted, a copy of that table should be hung in the binnacle, and every person on board who keeps a reckoning should have a copy of it attached to his traverse table.

Courses by Compass.	Courses Corrected for Local Attraction	Courses by Compass.	Courses Corrected for Local Attraction	Courses by Compass.	Courses Corrected for Local Attraction	Courses by Compass.	Courses Corrected for Local Attraction
North	° N. 1 W.	East	° S. 85 E.	South	° S. 3 W.	West	° S. 83 W.
N. by E.	N. 11½ E.	E. by S.	S. 71½ E.	S. by W.	S. 12 W.	W. by N.	N. 86½ W.
N.N.E.	N. 23½ E.	E.S.E.	S. 60 E.	S.S.W.	S. 22½ W.	W.N.W.	N. 75½ W.
N.E.b.N.	N. 35½ E.	S.E.byE.	S. 49½ E.	S.W.b.S.	S. 32½ W.	N.W.b.W.	N. 63½ W.
N.E.	N. 48 E.	S.E.	S. 38 E.	S.W.	S. 43 W.	N.W.	N. 51 W.
N.E.b.E.	N. 59½ E.	S.E.byS.	S. 27½ E.	S.W.b.W.	S. 52½ W.	N.W.b.N.	N. 39½ W.
E.N.E.	N. 71 E.	S.S.E.	S. 18½ E.	W.S.W.	S. 62½ W.	N.N.W.	N. 26 W.
E. by N.	N. 82½ E.	S. by E.	S. 8½ E.	W. by S.	S. 71½ W.	N. by W.	N. 12½ W.

Thus if a ship were apparently steering S.E. by the compass, she would be actually steering 7° to the southward of that point or S.E. $\frac{2}{3}$ S. and in working the day's work, the -7° must be applied to that course; but if on the other tack she should lie up north, only 1° would be the correction to be applied, and that with the contrary sign.

The above mode of discovering the local attraction is so simple and so perfectly in every seaman's power that surely none but the most perversely indolent will continue to blunder through their voyages as heretofore. Every ship in the king's service should be ordered to make a return to the commander in chief of the local attraction, in a form similar to the table we have given, and every six months the experiment should be repeated and reported.

Having shewn the means by which the seaman may attain the desired object with a single compass, we will now describe the second method, which, however, requires the assistance of two compasses and two observers. The two compasses selected for the operation, should precisely agree with each other. One of them mounted on a tripod stand is to be taken on shore at a short and convenient distance from the ship, and so placed as to be easily seen from the other compass which remains on board in its proper position in the binnacle, from whence the principal observer will watch the progress of the ship's head and by some preconcerted signals he will communicate the instant of his making each observation to his assistant on shore.

The best means of doing this will be by a light staff in his hand with a little flag or a white handkerchief fixed to it. The process would be as follows:—The proper warps being prepared as in the former experiment, to check the rapidity of the ship's swinging, and to steady her head on each point of the compass for an instant, the observer on board displays his little flag, in order to warn the observer on shore to look out. A few moments may elapse with the flag up, while the ship is becoming steady and the compass settling. Then commencing at any point on which the ship's head happens to be, the bearing of the shore compass is taken, and at the same instant the flag is put down. The assistant on shore at this instant of disappearance of the flag observes the bearing of the compass on board, and each observer carefully registers his observation. The ship's head is then placed on the next point of the compass, where the same process is followed, and so on

throughout all the other points. The observations are then tabulated, according to the following form, and the direction of the ship's head being placed against each pair of observations, their difference shews the deviation of the needle on board from the magnetic meridian. When the proper signs are applied as before explained, this table shews the effect of the local attraction for each point of the compass, and is ready for use.

Direction of Ship's Head.	Bearing of Shore Compass from on board.	Bearing of Compass on board from Shore Compass.	Difference, or Local Attraction.	Direction of Ship's Head.	Bearing of Shore Compass from on board.	Bearing of Compass on board from Shore Compass.	Difference, or Local Attraction.
North	S. 36 W.	N. 36 E.	0	South	S. 32 W.	N. 31 E.	+ 0
N. by E.	S. 30½ W.	N. 34 E.	-3½	S. by W.	S. 33 W.	N. 31 E.	+ 2
N.N.E.	S. 30 W.	N. 34½ E.	-4½	S.S.W.	S. 34 W.	N. 31 E.	+ 3
N.E.b.N.	S. 32 W.	N. 34½ E.	-2½	S.W. by S.	S. 34½ W.	N. 31 E.	+ 3½
N.E.	S. 29 W.	N. 34 E.	-5	S.W.	S. 35 W.	N. 31 E.	+ 4
N.E.b.E.	S. 29 W.	N. 34½ E.	-5½	S.W. by W.	S. 34 W.	N. 30½ E.	+ 4½
E.N.E.	S. 29 W.	N. 34½ E.	-5½	W.S.W.	S. 38 W.	N. 33 E.	+ 5
E. by N.	S. 25 W.	N. 33 E.	-8	W. by S.	S. 40 W.	N. 34 E.	+ 6
East	S. 27 W.	N. 34 E.	-7	West	S. 40 W.	N. 31½ E.	+ 5½
E. by S.	S. 27 W.	N. 33 E.	-6	W. by N.	S. 41 W.	N. 35 E.	+ 6
E.S.E.	S. 27 W.	N. 33½ E.	-6	W.N.W.	S. 40 W.	N. 35 E.	+ 5
S.E.b.E.	S. 27 W.	N. 32½ E.	-5½	N.W. by W.	S. 39 W.	N. 35 E.	+ 4
S.E.	S. 28 W.	N. 32 E.	-4	N.W.	S. 40 W.	N. 36 E.	+ 4
S.E.b.S.	S. 28 W.	N. 32 E.	-4	N.W. by N.	S. 40 W.	N. 38 E.	+ 2
S.S.E.	S. 27 W.	N. 30 E.	-3	N.N.W.	S. 39 W.	N. 37½ E.	+ 1½
S. by E.	S. 30 W.	N. 31 E.	-1	N. by W.	S. 38 W.	N. 38 E.	+ 0

Then, from the foregoing, the following table may be also formed :

Courses by Compass.	Courses Corrected for Local Attraction	Courses by Compass.	Courses Corrected for Local Attraction	Courses by Compass.	Courses Corrected for Local Attraction	Courses by Compass.	Courses Corrected for Local Attraction
North	0	East	0	South	0	West	0
N. by E.	N. 14½ E.	E. by S.	S. 83 E.	S. by W.	S. 1 E.	W. by N.	S. 84½ W.
N.N.E.	N. 26½ E.	E.S.E.	S. 72½ E.	S.S.W.	S. 9½ W.	W.N.W.	N. 84½ W.
N.E.b.N.	N. 36½ E.	S.E. b.E.	S. 61½ E.	S.W. by S.	S. 19½ W.	N.W.b.W.	N. 72½ W.
N.E.	N. 49 E.	S.E.	S. 50½ E.	S.W.	S. 30½ W.	N.W.	N. 60½ W.
N.E.b.E.	N. 61½ E.	S.E. by S.	S. 41 E.	S.W.	S. 41 W.	N.W.	N. 49 W.
E.N.E.	N. 73 E.	S.S.E.	S. 29½ E.	S.W.b.W.	S. 51½ W.	N.W. b.N.	N. 35½ W.
E. by N.	N. 86½ E.	S. by E.	S. 18½ E.	W.S.W.	S. 62½ W.	N.N.W.	N. 2½ W.
			S. 10½ E.	W. by S.	S. 72½ W.	N. by W.	N. 11½ W.

exhibiting, as before, the correct magnetic courses which the ship is actually steering when her head is on the points placed against them, and to which corrected courses the variation is to be applied.

This method by two compasses may after all be considered as a modification of that by one, for the compass on shore may be supposed

as always in the same line between an imaginary distant object beyond it, and the compass on board, at the instant of observation.

Cases may be imagined at sea, when it might be of great importance to a ship, the local attraction of which had not been measured, to obtain some near approximation to its amount. This may be often effected by taking several azimuths and amplitudes of the sun with the vessel's head on various points of the compass, and thus inferring the variation due to each of those points. It is manifest that this is only a variety of our first method described at page 251, the sun being employed instead of the distant terrestrial object. Again, a ship will have a thousand opportunities when in sight of the land, of setting by the compass, some very distinct well-defined cape or peak, and of throwing her head into such a variety of positions, as to furnish very considerable data for estimating the local attraction. The maximum being generally within a point or two of east and west, it will be desirable to obtain several bearings with the vessel's head in those directions.

We have said in a former part of this paper that the directive effort on the needle of the local attraction of the vessel increases as she recedes from the magnetic equator towards the poles, and therefore the amount of local attraction is continually varying. No favourable opportunity should therefore be lost of ascertaining its amount in different parts of the world. Each set of observations will suffice for a very large range of latitude, but all these observations, provided they were made with the same compass in the same place, should be preserved as affording useful materials for future investigation.

As connected with this not less important than interesting subject, we deem it our duty to allude here briefly to the azimuth compass, and to urge the universal adoption of a practice, which for some years has been gradually making its way in well regulated ships,—we mean the assigning to that instrument one invariable position amidships. Being fitted on a tripod stand, the legs are always placed in the same position by means of marks in the deck, the compass consequently takes always the same place. But as this compass will have its own deviation from the magnetic meridian, arising from local attraction, the seaman should take care to know its amount on each point as compared with the steering compass, in order to apply the variation to that compass which may result from observations with the azimuth compass; and we cannot too strongly insist on the necessity of making all such observations originally assigned to it, *from that spot alone*. A disregard to this important regulation is too common at sea. If the view of the sun should be impeded by a sail or by the rigging or masts, a position somewhere else is chosen to obviate the inconvenience, instead of the sail being taken in or the direction of the ship's head somewhat altered. Hence an incorrect result is sure of being obtained, for as the local attraction changes in every part of the vessel, so the angle of variation of any one compass at any one part of the vessel must be compounded of the two angles which represent the real variation, and the effect of local attraction. We may also here remind the seaman that if he wants to determine the actual variation, undisturbed by the magnetic action of the vessel, he must lay her head on the magnetic meridian or line of no attraction. The important discovery of Professor Barlow, that the influence of iron bodies on the magnetic needle lies entirely in their surfaces

was followed by his ingenious plan of neutralizing their effects on the compass, by means of a thin iron disc,—but to this branch of the subject we propose to call the attention of our readers in a future number.

Naval Chronicle.

STEAM NAVIGATION IN THE PACIFIC.—We have perused with much interest, the documents lately printed at Lima on the subject of navigating the South American shores by steam. The scheme appears to be that of a Mr. William Wheelwright, fostered by the enlightened views of the British consul general, B. H. Wilson, Esq., and we find that the national congress has agreed on the following project of a law for the encouragement and protection of the Pacific steam navigation company as projected by Mr. Wheelwright :—

“The exclusive privilege, for ten years, is granted to Mr. W. Wheelwright, or whomsoever may legally represent him, to navigate by steam, in those of our ports and rivers open to the coasting trade, with the exemptions and privileges allowed, or that may be hereafter granted, to national merchant vessels.

“To enjoy this privilege, the undertaking must be executed within the term of two years from this date, at least to the extent of two steam vessels, of the burthen of 300 tons each.”

The decree which we may look on as thus establishing steam navigation in the Pacific, is dated 25th August, 1835, at Santiago de Chile, and is perhaps one of the most important passed in that country, and the good effects of which will be felt throughout the land. Although it compels the employment of two vessels, still we see that three are intended, and these to be built in England. They will run from and to Valparaiso, Coquimbo, Huasco, Copiapo, Cobija, Iquique, Arica, Islay, Callao, Payta, Lambayeque, Pacasmayo, Santa, and Huacho. Also from and to Guayaquil, Paita, Choco, and Panama, two vessels are to be employed between Valparaiso and Callao and one between Callao and Panama, each to make complete voyages monthly.

Every one who has visited the “Pacific” shores of South America, between Valparaiso and Panama, knows full well that it would be difficult to find another part of the world so admirably calculated for steam navigation. The advantages to the South American states of establishing it, appear to be duly appreciated by their rulers: indeed to commerce in general the whole measure is one fraught with considerable importance. The extent of coast included in the voyages is about 3,000 geographical miles, in which 18 intermediate ports will be visited twice every month, thus imparting new life and vigour to a hitherto dull and inactive trade. Even the correspondence with England will be improved, for we find the following calculations in the paper before us: The number of sheets of English correspondence from Valparaiso 36,000, Callao 24,000, other ports 12,000; total to England 72,000; while the foreign will be 20,000, making 92,000 sheets annually all through Panama. We perceive also that the promoters of this measure calculate on monopolizing the advantages of carrying treasure, the only advantage that the captains of his majesty's ships

derive from employment in that distant part of the world. What will they say to this? and what will the old stagers of Greenwich hospital say? However, the whole measure is calculated to do much good, and we sincerely hope that it may prosper as all such deserve.

THE ATALANTA STEAMER.—In our last we gave the extract of a letter from a passenger concerning the passage of the vessel to Teneriffe. We have since been favoured with a copy of her log, from which we have made the following abstract :—

30th Dec. Average rate 8·4, wind N.E. steady, fine weather; coals consumed $12\frac{1}{2}$ cwt. per hour, noon in $47^{\circ} 26' N.$ and $8^{\circ} 06' W.$

31st Dec. Average rate 8·4, wind E.N.E. and N.E. fresh, P.M. squally, with hail; coals consumed $12\frac{1}{2}$ cwt. per hour, noon in $43^{\circ} 13' N.$ and $10^{\circ} 8' W.$

1st Jan. Average rate 8·0, wind N. E. fresh, and increasing to gale; midnight, paddle-box cabins washed away, heavy sea running, ship straining a good deal; coals consumed, 13 cwt. per hour. Increased consumption of fuel attributed to different quality of coals and water flowing over the steam chest from the paddle boxes, noon in $42^{\circ} 47' N.$ and $13^{\circ} 10' W.$

2nd Jan. Average rate 9·3, wind N. E. heavy gales, heavy sea, shipping much water, larboard cooking apparatus removed, 10 P.M. afterpart of starboard paddle-box washed away, sea making a complete wash over the deck. Morning more moderate, all sail set to advantage; coals consumed, 12·8 cwt. per hour, noon in $39^{\circ} 42' N.$ and $16^{\circ} 50' W.$

3rd Jan. Average rate 8·4, wind N. and N.W. steady and fine, A.M. light, repairing damages; coals consumed, 12 cwt. per hour, noon in $36^{\circ} 23' N.$ $17^{\circ} 20' W.$

4th Jan. Average rate 7·8, calms S.E. light, 10 P.M. S.W. point of Madeira, S.b.E. 30 miles, noon strong breezes; coals consumed 12·9 cwt. noon in $33^{\circ} 10' N.$ $17^{\circ} 30' W.$

5th Jan. Average rate, 6·6, wind south, strong gales, 7 P.M. heavy sea carried away jib boom, pitching; coals consumed, 10 cwt. per hour, noon in $31^{\circ} 32' N.$ $17^{\circ} 5' W.$

6th Jan. Average rate 8·0, wind south, strong gales, head sea-pitching, shipped much water, 6 A.M. moderate, made Teneriffe S.b.E. 40 miles, 1 P.M. of 7th brought up, the town distant $\frac{1}{4}$ of a mile.

By the foregoing abstract it will be seen that the wind during the first four days was most favourable, but that the vessel has had much sea to contend with, particularly in the gale from the southward in the two last days, which no doubt gave rise to the opinion that the voyage had been made under the most unfavourable combination of winds and high seas. On the whole we consider the weather to have been favourable to the voyage, although no doubt it might have been still more so, as well as much worse. The average rate of eight miles per hour, which we have already concluded on, will be seen was perfectly correct by the log.

THE SHIPPING GAZETTE.—We do not consider it as departing from our course to notice the recent discussions which have been elicited on the part of this useful journal respecting the privileges enjoyed by its

diminutive competitor, the *London Shipping and Commercial List*. The question, as one of revenue, we have nothing to say about, although the whole bearing of the subject lies in the "*List*" being free from stamp duty, advertisement duty, and postage, while the "*Gazette*" is not. Hence the undue advantage complained of. But this we will say, that until the "*Shipping Gazette*" was established, the public may be said to have been in a complete state of ignorance on the affairs of British mercantile shipping in general, *both at home and abroad*. We now resort to it to keep up our return of wrecks, which, in consequence, will be more complete than formerly; and the mass of general intelligence it contains, fully entitles it to support. We are glad to find it has established itself; and we shall also be glad on public grounds to see the numerous petitions to parliament in its favour, effect the removal of that monopoly enjoyed by its tiny, but privileged competitor.

THE MERCANTILE MARINE.—The subject of our mercantile marine, as our readers well know, has generally occupied a large share of our attention. The vast importance to the British public that it should be sound in all its branches has induced us to contribute our humble efforts, to point out those parts which are unsound, and require correcting. This we have done, and shall not cease doing until we see that reform take place in it which is so much wanted. In another page of this number will be found a letter from our correspondent "MERCATOR," on the report of the committee on shipwrecks, which it will be seen was written before the notice of Mr. Buckingham's bill, founded on that report, had appeared. This letter, and that of a Ship Master, are well worthy the attention of that gentleman. We shall now lay before our readers the outline of Mr. Buckingham's bill for the formation of a marine board, and the remarks which he made in the house on introducing it. As the chairman of the shipwreck committee, we consider Mr. Buckingham better informed on the important subject which he has taken in hand, than any other member of the house of Commons, and his authority therefore to be preferred before all others, and we are the more readily led to this conclusion by seeing that his interest is in no way connected with ships or their affairs. His proceedings may therefore fairly be considered free from any selfish motive, which is saying a great deal in these times of fecundity in companies of all kinds. However, to the measure before us, we shall have to revert to it again, but with respect to the appointment of the members of the marine board, we cannot see what an astronomer is wanted among them for, another astronomer royal too, as he is to be appointed by Mr. Airy himself. All the astronomy that seamen require is justly termed "*nautical*;" and considering that captains of merchant ships have, generally speaking, neither inclination nor time to establish *observations!* at every place they visit, and that they are contented with a good rate for their timekeeper, if they happen to have one, we consider that the person to be appointed by the Admiralty might possess a sufficient knowledge of astronomy as it is applied to navigation, as well as how to make and use charts, as a person who, although a very good astronomer, might know nothing of them or the sea-rate of a chronometer, should moreover be a seaman. But there

are other appointments to which we might take exception, and the whole subject is one which would lead us further than we shall go at present. We trust, however, that the important measure contemplated by Mr. Buckingham, although modified in the mode of effecting the purpose, may eventually pass into law, as we are satisfied that it is calculated to benefit the country most essentially. It will be seen that Mr. Buckingham, in introducing his bill has stated facts, brought before him as chairman of the committee, which facts are precisely similar to those adduced in former pages of this work.

“MR. BUCKINGHAM rose to ask for leave to bring in a bill for the better regulation of the mercantile marine of Great Britain, founded on the report of the select committee on shipwreck. The ground work of this bill was the report of that committee, which was composed in a great measure of officers of the navy of great standing and experience in the service. He was induced to introduce this bill, not from considerations of the loss of property, but on the ground of humanity, since the loss of lives was greater than even the loss of property. The report* stated, as a result of an analysis, the returns from Lloyd's, that the loss of property by shipwreck annually was £3,000,000, whereas the loss of lives was not less than one thousand annually.—(Hear, hear.) In consequence of the facility with which men could insure, they became indifferent to the fate that might await the ship.—(Hear.) The ship-owner did not lose by the loss of the vessel, because he was insured to the full extent of the value of the ship, and thus the ship-owner became indifferent to the loss. The underwriter did not lose, because he, by excessive premiums, made up what he might have to pay. The ship-builder was not injured; on the contrary he was benefited by shipwrecks; neither did the merchant or manufacturer suffer but the British public did suffer. This was the result of the facility of insurance. The ship-owner lost nothing, but sometimes gained by having over insured. The underwriters lost nothing, because their calculations were so framed as to cover accidental loss by their excessive premiums; the ship-builder benefited, receiving another order in place of the vessel lost; and the merchant and manufacturers in the like way. *The public was the only party that did lose, and that by the additional price put upon articles insured.* The ship-owner was anxious to get a cheap ship, for the freight was as good as in a dear one, and produced greater returns. The builders accordingly strove who should produce the cheapest vessels, and they therefore became deteriorated both in strength and value. From the returns of Lloyd's it appeared that in sixteen months, ninety-five ships that had sailed from the port of London had never been heard of; they had either foundered at sea, or been wrecked on a savage coast. This, no doubt, arose from the incompetency of the officers, and the absence of all examination into their capabilities.—(Hear, hear.) No surgeon was allowed to practise without proof of his qualification; but with regard to the master of a merchant ship, any body might be put on board at the choice of the owner, and sent across the Atlantic, without knowing even the points of the compass.

There was evidence before the committee, of a brig from Belfast, of 294 tons, the captain being only fourteen years of age, and who had

* See a copy of this report in our number for October last, p. 588 of our vol. for 1836.

never before been at sea.* No doubt the owner had been desirous of putting the captain's wages in his pocket, and had sent him on board with a dry-nurse, namely, an old seaman, who had the real command, and issued the necessary directions. There was also another instance in Scotland, where the captain had been, till that time, a common porter in the owner's warehouse. What cared he, (the owner,) he was insured, and if the vessel, being old, were lost, he would receive a sum of money, wherewith to buy a new one. What a difference was there between the ships of the Royal Navy and the East India Company, and those of the merchant service. The India Company were their own insurers, and being therefore interested in their preservation, no finer or better equipped vessels swam the sea. In that service, and in the Royal Navy, ships were now afloat seventy years old, while in the merchant service, a vessel was considered old at fifteen years. The hon. member next adverted to the inadequate supply of stores, anchors, cables, and sometimes provisions, and instanced some cases of timber vessels with cargoes on deck, which had quickly capsized, and of which the crews had been obliged to eat each other by reason of their not being able to get at the provisions, on account of the water covering the ship. It was a reproach, said he, to England, priding herself on her maritime superiority, that she had taken no pains on a subject which all other countries had taken up. (A voice from the ministerial side—'There are no legislative enactments.')

Mr. Buckingham held in his hand a French ordonnance bearing date 1681, which was admitted to be a most perfect body of maritime laws, in which no man was suffered to command a ship unless he had been at sea five years, and had submitted to an examination. All that he asked, was for leave to bring in a bill to constitute a marine board, consisting of seven members, four of whom should be practical nautical men, to be severally appointed by the Admiralty, Lloyd's, the Trinity-House, and the Ship Owners' Society. One shipowner, a professor of nautical astronomy, to be appointed by the astronomer royal, and a legal gentleman, by the Lord Chief Justice. This would be an independent qualified body, with the power to frame rules for the safety of ships. They should also have the power of instituting an enquiry into the circumstances attending the loss of shipping. It was singular, that if a man were killed by a horse and cart, an inquest was held, but in the case of a vessel where 500 lives were lost, the only trouble taken was by the insurers, as if seamen were of no more value than brute animals.—(Hear, hear.) He (Mr. Buckingham) thought he had shown sufficient grounds for legislative interference and hoped leave would be granted him to bring in the bill."

Abstract of a Bill for the establishment of a Marine Board, and for the better regulation of the Merchant Shipping of the Kingdom. (Brought in by Mr. Buckingham, Colonel Thompson, and Admiral Codrington.)

The preamble sets forth that it is expedient to establish a Marine Board in London, for the general superintendence of the merchant shipping of the kingdom; and the bill is to enable the board to discharge the several duties which such superintendence shall require.

* An attempt has been made to refute this statement lately in the Shipping Gazette, by a Mr. Morris, but we have not seen Mr. Morris's reply to the convincing contradiction which his letter received from Mr. Coleman, by whom the evidence was given.—Ed. N.M.

Clause 1. A Marine Board to be established in London, to be composed of seven members, four of whom shall be practical nautical men, who have been ten years in actual service at sea, or at least five years in command of a foreign trader, or vessel in the royal navy; one shall be an experienced ship-builder, of ten years' practice; one a professor of nautical astronomy and navigation; and one a member of the legal profession, of at least ten years' standing at the bar.

Clause 2. The Admiralty, Trinity House, Ship-owners' Society, and Lloyd's, to appoint one of the nautical members each. The ship-builder to be appointed by the senior master-builder in his Majesty's service; the astronomer, by the astronomer royal; the barrister, by the Lord Chief Justice.

Clause 3. None of the members to be removed during his lifetime, or until he has attained the age of 70, except for breach of duty, &c.

Clause 4. The board, after its appointment, to vote by way of ballot, one of their number as president—another as vice-president. These officers for life, or until the age of 70.

Clause 5. In case of death or vacancy, the member's place to be filled up by the body who elected him; if in the presidency, &c., by ballot.

Clause 6. Annual salaries of ordinary members to be £600 each; of the vice-president, £800; of the president, £1,200.

Clause 7. Board to meet daily, (Sundays, &c. excepted.)

Clause 8. The board authorized to employ a competent number of surveyors of shipping to make surveys of ships building, and when reported as ready for sea; to employ examiners to examine publicly all officers and commanders in seamanship and navigation, previous to their being appointed to ships for sea. The salaries of the surveyors and examiners not to exceed in the whole £2,000 per annum.

Clause 9. Board to appoint clerks, &c. Their salaries not to exceed in the whole £1,000 per annum.

Clause 10. Board to prepare a code of maritime regulations, embracing the following objects:—first, a definition of the minimum standard of strength in the scantlings, fastenings, and planking of ships of different sizes, and employed in different trades; second, the formation of a minimum scale of supplies in anchors, cables, spars, cordage, sails, provisions, and water, to be taken on board all ships when ready for sea, according to their size, number of crew, and passengers, and distance of voyages; third, fixing rules for loading of ships in particular voyages, so as to guard against losses by carrying cargo on deck; fourth, the establishment of a minimum qualification in the knowledge of seamanship and navigation for persons passing examination, for the office of captain, or officer on board any merchant ship; fifth, the formation of a body of rules for conduct and discipline of officers and crew, at sea and in port.

Clause 11. This code, when approved of by the majority of the board, to be published in a cheap volume, and to be considered, after six months from the date of publication, the established code of regulations for the merchant service of Great Britain.

Clause 12. The Marine Board to have power to establish in London registry offices for the registration of the names, qualifications, and services of such officers and men who may choose to avail themselves of the same; to facilitate their obtaining employment; also, to estab-

lish savings banks for seamen to deposit any portion of their wages— asylums to receive and shelter seamen when out of employment on shore, and of cheap nautical schools for training up boys in such practical knowledge and sober and orderly habits as may best fit them for seamen.

Clause 13. The board to have power to institute a court of inquiry into the circumstances of every shipwreck that occurs in any British vessel, whether at home or abroad, as far as the same can be done, and to make public the decision of the court, to pass censures, grant rewards, &c.

Clause 14. The board empowered to sit as a marine court of justice and police, for the settlement of all disputes that may arise between shipowners, merchants and underwriters, as to questions of insurance, salvage, &c.; also between officers, crews and passengers. The decision of court by a majority, to be held binding in law. These courts to be open, and counsel allowed to plead.

Clause 15. Board to have power to examine and report on all plans of improvement in maritime affairs.

Clause 16. Board to have power to open negotiations with maritime authorities in other countries, to facilitate the preservation of lives of shipwrecked mariners, and the property of shipwrecked vessels cast upon their shores.

Clause 17. Board power to grant authority for the formation of auxiliary boards in the ports of Liverpool, Bristol, Newcastle, Hull, Aberdeen, Leith, Greenock, Cork, Dublin, and Belfast, assigning to each a certain line of coast, &c., provided always, that each of the auxiliary or branch boards shall be composed of not less than three, nor more than five members, to be appointed by the Trinity House, the Chamber of Commerce, and the municipal Corporation of each port respectively; or in the absence of either of these bodies, by such other local authorities as the London Marine board may approve; such appointments to be irrevocable, except for wilful neglect or violation of duty. Provided also, that all the members of such branch boards shall be practically nautical men, and that the code of maritime regulations to be issued by the marine board in London shall be adhered to as their rule for conducting the surveys of the ships, the examination of the officers, and the settlement of all the disputes between shipowners, officers, crews, and passengers, which may be brought before them. Provided also, that the election of President and filling up of vacancies in the branch boards, shall be conducted as in the London board; that the salaries of the members, and allowance for surveyors, examiners, and clerks, shall not exceed in any case one-half the amount named for each of these several departments in the London scale; and that the whole expenditure of any one branch board shall not exceed the sum of two thousand five hundred pounds per annum.

Clause 18. The funds for the payment of the salaries and expenses of the London Board to be derived from the following sources, viz.; first, A commission on the settlement of all questions of disputed insurance, salvage, freight, passage-money, wages, and customary dues, not to exceed five pounds per centum on the amount of the sum in dispute, in lieu of all law charges for the adjustment of the same; second, fees on the survey and registration of every new ship launched in the port of London, not to exceed one guinea for every one hundred tons of measurement to each ship respectively; third, fees on the sur-

vey and certificate of every ship undergoing a general repair in the port of London, not to exceed half-a-guinea to every one hundred tons of measurement for each ship respectively; fourth, fees on the survey and certificate of every ship reported ready for sea, and sailing from the port of London, not to exceed five shillings for every one hundred tons of measurement for each ship respectively; fifth, fees on the examination and certificate of every officer appointed to the rank of captain in the mercantile marine, not to exceed one guinea for every one hundred tons of measurement of the ship to which his first appointment is made; sixth, fees on the examination and certificate of every officer appointed to the rank of first mate, not to exceed half-a-guinea for every one hundred tons measurement of the ship to which his appointment is first made; and on the examination and certificate of every officer appointed to the rank of second mate, not to exceed five shillings for every one hundred tons measurement of the ship to which his appointment is first made; such rates of fees to apply only to ships and officers sailing on foreign voyages; and one-fourth the amount only to be paid by ships and officers employed in the coasting trade.

Clause 19. The board empowered to grant certificates of registry to ships examined and reported to be built and equipped agreeably to the Maritime Code; also to officers having passed examination.

Clause 20. If funds are insufficient, Trinity House and Admiralty to grant supplies in aid. If surplus funds from the fees, the fees to be reduced. [This relates only to the principal Board.]

Clause 21. The funds for the auxiliary boards to be derived from like sources as those for the London Board.

Clause 22. An account is to be kept by each of the branch marine boards of all payments made to them in commission or fees, and all expenses incurred; and a quarterly return of each to be transmitted to the Central Board in London; and the Central Board is to be empowered so to regulate the balance in the hands of each of the branch boards as to apply the surplus of the one to make good the deficiency of the other, so as to make the institution of marine boards self-supporting as far as practicable; and thus to render it unnecessary to apply to any other source than the funds thus received, for carrying on and conducting the whole business of the central and branch boards as parts of one and the same establishment, the total expense of which, including the central board for London, and all the branch boards at the several outports named for England, Scotland, and Ireland, is not to exceed the sum of thirty thousand pounds per annum.

Clause 23. Interpretation clause.

Clause 24. Act to extend to England, Scotland, and Ireland.

PROFESSOR WHEWELL'S QUERIES.

To the Editor of the Nautical Magazine.

SIR,—In the February number of your magazine, there are queries put (very properly) to nautical men, by Professor Whewell; but the interest of the subject even to landmen will, I trust, excuse one for meddling with it. It is but by the collection of the information of many individuals that the workings of nature are traced, and upon which theories can be safely based.

Professor Whewell's eleventh question, "*Whether the rise of tide at a distance from the land be not less than the rise on the nearest*"

shores, and whether the time of high-water at such places be not earlier than it is on the shore," is one of great interest.

The rise of tide on the coast, in excess of the rise in the great expanse of the sea or ocean, is known to be caused by the resistance offered by the shore, and increases with the angle with which the current impinges upon the land.

Thus, on the north-east coast of Yorkshire, the flow of the spring-tides is sixteen feet when the rise in an offing of only twelve miles (in thirty fathom soundings) is only six feet; the velocity in the offing being however nearly double that on the shore.

I believe that, *as a general rule, it may be assumed that the tide rises to a higher level on the coast than at sea*, and that where instances to the contrary are met with, (such as in Yarmouth roads,) the facts that the strength of the inshore current is diverted into the offing by the bold projection of the north-east coast of Norfolk, and that it is but the eddy produced by the said diversion which principally supplies the flow on the Yarmouth sands, will sufficiently account for the small flow on the Yarmouth shore, and probable greater flow in the offing.

The second part of the eleventh query is, "*Whether the time of high-water at such places be not earlier than it is on the shore?*"

The information which I have gained on this point *shows that a contrary result takes place*. Thus, on the north-east coast of Yorkshire, the time of high-water in the offing is three hours later than on the shore, and that in the offing off Yarmouth it is one hour later than on the Yarmouth shore. The cause of the time of high-water on the shore being so much earlier there than in the offing, may be attributed to the greater resistance made to the first of the flood by the offing current above that along the shore, or by the superior energy which deep water possesses when once it has acquired velocity. Hence we find that in tidal rivers the young flood runs up their shores for a considerable period before it has acquired sufficient head to turn back the central or main current of the ebbing waters.

The illustrious Playfair (I quote solely from memory) attributes to the incline plane of the shore the *deposition at a distance from the land* of the detritus brought by the currents of rivers, and the wear on the coasts. Is this however sufficient, when we know that between the place of final deposit and that of removal from the coast, the bed of the sea is frequently found for miles level, or nearly so. I suggest that the principal motive power is to be found in the increased head or flow upon the shore, and that it will be found that wherever the rise on the coast considerably exceeds the rise in the offing, the deposit of detritus will take place at a considerable distance from the shore, or will be where the incline of the high-water surface ceases. Thus we find the position of the Dogger bank is at a considerable distance from the shores, the rise on the coast greatly exceeding the rise in the offing. Again, in addition to the eddy caused by the deflection of the tide from the north-east coast of Norfolk, and the ebbing waters of the Thames, we may also notice that an excess of rise of tide in the offing off Yarmouth, over the rise on that shore, would, by the same reasoning, account for the position of the great Yarmouth sands so close to the shore.

I am, Sir, your very obedient servant,

16th March, 1837.

W. A. BROOKS.

PORTUGAL.—The following extracts form the chief feature of the decree of the Portuguese government for the abolition of the slave trade :—

“DECREE.”

“Taking into consideration the reports of the Secretaries of State of the different departments, I hereby issue the following decree :—

“Art. 1. That the exportation of slaves be henceforth prohibited, both by sea and land, in the Portuguese dominions, as well to the north as to the south of the equator, from the day on which the present decree shall be published in the different capitals of the said dominions.

“Art. 2. The importation of slaves by sea is also strictly prohibited under any pretext whatever.

“Sec. 1. Due notification must be given of any slaves that may be brought by land into any of the Portuguese territories.

“Art 3. Any planter, whether native or foreigner, who from any part of the Portuguese dominions in Africa may establish himself in any other part of the said dominions, on the continent or islands on the coast of Africa, is exempted from the rules laid down in the first and second articles, relating to the exportation and importation of slaves.

“Sec. 1. The same exemption from the rule established in article 2, also extends to the importation of slaves by sea made by any planter, whether native or foreigner, who, from any port not subject to my power, may establish himself in any of my dominions in Africa.”

“The remainder of the decree is taken up with a variety of clauses similar to those lately introduced in the treaty concluded with Spain. The equipment articles, which we annex, are important.

“List of articles which, being found on board of any vessel, must be considered as indications of her being intended for the slave trade, and to subject her to the provisions of the decree of the 10th December, 1836, of which this list constitutes a part :—

“1. Hatchways with open gratings, instead of being closed according to the practice of merchant vessels.

“2. A flush deck, or a greater number of compartments than is usual or necessary on board fair traders.

“3. Planks ready fitted to form a second deck, as is used by slavers.

“4. Collars, manacles, thumb-screws, or chains.

“5. A greater quantity of water in casks or tanks than is necessary for the crew of a merchant vessel.

“6. An extraordinary number of pipes or casks to contain liquids, should the captain not be able to present a certificate from the Custom-house from which he cleared out, showing that the owners of the vessel gave bond for them, and that they are intended to receive palm or fish oil, or for any other purpose of licit commerce.

“7. A greater number of buckets, tubs, or mess-trays than necessary for the crew of a merchant vessel.

“8. A boiler of larger dimensions than usual, and than would be required for the use of the crew ; or several boilers in greater number than would be necessary for that purpose.

“9. An extraordinary quantity of rice, beans, salt meat, and fish, Mandioca maize, wheaten or any other flour, beyond that required for the use of the crew ; unless such articles should form part of the cargo, and be duly manifested.

(Signed)

“VISCONDE DE LA BANDEIRA.

“Foreign Office, Dec. 10, 1836.”

Law Proceedings.

ADMIRALTY COURT, Dec. 12.—THE GIACOMO—SALVAGE.

THIS was a claim for remuneration, of the nature of salvage, by the owners and crews of two luggers, the *Providence* and *Liberty*, for services rendered to the *Giacomo*, a Venetian brig under the Austrian flag, from Venice to Hull, with a cargo of bones. The case on the part of the salvors was, that the brig, when near Lowestoffe, on the Suffolk coast, on the first of August, was in imminent danger of running on the Bacon-rigge sand, on which there was in some parts only seven feet of water; that on boarding her, it was evident that the foreign master was ignorant of the existence of the sand in this channel, which was not laid down in even modern charts; that he was in alarm and confusion when apprised of his danger, and that the salvors took the helm, and put the brig's head about in time to avert the striking of the vessel; that the wind was very strong, and the motion of the sea great; that the master refused to reward the salvors and gave a wrong name of the vessel. The salvors traced the brig to Hull, arrested her, and required bail in £200. The case on the part of the brig was a total denial of the facts alleged by the salvors; that the master had a chart before him which shewed him his danger, of which he was well aware, and had put about the helm previous to the luggers boarding. The value of the ship and cargo was £2,000.

After hearing the King's Advocate and Dr. Robinson for the salvors, and Dr. Phillimore, (with whom was Dr. Haggard,) for the foreign owner,

Sir J. NICHOLL considered this an unfounded demand on the part of the asserted salvors from beginning to end, and that the story they had set up was with a view of extorting money from the foreign vessel. He was not sure whether a party could claim salvage compensation where there had not been damage sustained, and where the party salvaged had not been aware of danger, and assistance had not been asked. The brig had sailed along the coast of France and England without damage, and had a chart of this part of the coast; and the whole merit claimed by the salvors, according to their own exaggerated statement, was, that the crew of the fishing lugger (which did not come out of harbour for the purpose, but was employed in her usual occupation) had come on board and altered the course of the brig, after which all the danger, according to their own account, was over. But even this merit had been denied by the foreign master. It was the duty of this Court, though anxious to reward salvors who acted with fairness, to watch the interests of foreigners, and he thought he was bound to dismiss the party proceeded against in this case with costs.

THE LIMA—SEAMEN'S WAGES.—Before Sir John Nicholl.

In this case the mate of the *Lima*, Mr. Stephenson, has promoted a suit against the captain and owner of the vessel for wages, which was met by a plea containing numerous charges of a serious nature if established against the mate. The case was opened at the conclusion of last term, and the proceedings are of a greater length and of more public importance as regards the maintenance of discipline among the com-

mercial marine of the country than is usual in such suits. The brig *Lima*, of 155 tons, having on board 12 hands, left this country in January, 1835, bound on a voyage to the port or ports of the western coast of central America and back. She returned in July, 1836, having, as pleaded, earned about £2,000 in freight. Stephenson was engaged in the capacity of chief mate for that voyage, having sailed many previous voyages with the captain. He signed the ship's articles on the 30th of December, 1834, and was to receive £4 10s. per month till the conclusion of the voyage. The plea on behalf of the captain set forth various acts of bad conduct on the part of the mate, as the reason why the suit for wages was opposed. It was alleged that while abroad, the mate had been guilty of conduct amounting to mutiny, that he had been insulting to his captain on many occasions by words and conduct, that he had been negligent of his duty while on watch, and he had thus placed the ship in a state of peril. From the acts of court it appeared the ship sailed on the 21st of January, and reached a port in central America about June in the same year, where she deposited a small part of her cargo. Thence she proceeded onwards, with the intention of going to Libertan, another port on the same coast, but inadvertently passed it, and on the 7th of September despatched in the jolly-boat, Stephenson, a sailor of the name of Prior, and two others, to discover it; in which expedition they were capsized, and two of them drowned, but Stephenson and Prior swam to shore and were saved. The master asserted that Stephenson, contrary to his strict orders, had attempted to reach the shore, instead of communicating with the natives by means of a speaking trumpet, with which he had been provided, laid all the blame of the accident to him, and shortly afterwards disrated him, and turned him before the mast. He did his duty as foremast-man for some days, till the master wishing to get entirely rid of him, offered him his wages, deducting however £15 for the loss of the jolly boat. This he refused. The suit is brought to obtain the whole amount of wages due. It appeared that the mate had been put before the mast after the breach of orders by which the lives of the seamen and the boat had been lost, having once previously been suspended but restored. In reply it was pleaded by the mate that he had been treated with unnecessary severity by his captain. The pleas on behalf of the captain contained a great number of minor charges against the conduct of the mate.

DR. ADDAMS (with whom was Dr. Haggard) contended that the mate during the outward voyage had received a series of assaults, aggravations, and ill usage from the captain, and to justify which, charges had been brought against him of neglect of duty, and that Stephenson was in the habit of using bad language. For the first of these charges there was not a tittle of evidence. He (Dr Addams) would satisfy the court that with respect to the second charge, if the mate so far forgot himself as to use offensive and disrespectful language to his captain, it was when he was provoked to it by the buffetings and beatings he had been subjected to. It was proved by the evidence, that the captain was in the constant habit of wrangling and disputing with the mate, and that mutual abuse had passed between them for some time before the 7th of September, 1835, when the men and boat were lost, which was occasioned by his attempting to land contrary to

orders, and after which Stephenson was disgraced. Under the circumstances of this case, he thought the court would not hold that the mate ought to lose his wages. If Mr. Stephenson had accepted the wages, deducting the £15 for the loss of the boat, as had been offered to him, he would have suffered in two ways, viz., by the loss of the money, which a poor seaman could hardly endure, and secondly, by the loss of reputation; for, acting thus, he would have admitted that the boat and the lives of the two seamen who were drowned were sacrificed to his carelessness and professional incapacity. Under these circumstances the learned Advocate placed his case with the greatest confidence in the hands of the court.

DR. BURNABY appeared for Captain Fewson, the master and sole owner of the brig. He regretted that the suit had been delayed in consequence of his indisposition, and he feared he would not be able to do that justice to Captain Fewson, which he would have wished, and which the shameful and false charges that had been brought against him called for. It was needless for him to speak of the necessity of maintaining strict discipline on board of ships in the merchant as well as the King's service. He could prove that this man's conduct had been such, that a complete forfeiture of wages must ensue; for besides the charges of neglect of duty and of abusive language towards the captain which had been proved against him, he had been guilty of that most grievous offence, viz., the introducing spirits into the fore-castle, and of inciting the crew to sign a paper contrary to the character and interests of the captain. The justification which had been offered on the other side for this conduct was, that sufficient provocation had been given by the captain. Now this, he (Dr. Burnaby) most distinctly denied. He felt confident, therefore, that the court would not sanction such outrages as had been attributed to Stephenson by deciding in his favour. Capt. Fewson, though he resisted this action as master and owner of the ship, did so really on the ground of public policy, for the safety of navigation, and the security of trade and commerce, which was intimately connected with the safety of navigation; and nothing could militate more against the safety of navigation than that conduct, such as of the mariners in this case, should be attended with no consequences of punishment to the offender, and compensation to the owner. The character of Captain Fewson was sufficiently established by the evidence—that he had been all his life at sea; that he had acted as master of different vessels, and had testimonials not only from the owners, but the crews; and that he never was the object of any proceeding until the present occasion. With such a crew as was on board the Lima, and in such a place as Central America, it was extremely difficult to manage a vessel; but it would appear, from a fair consideration of the evidence, that he had conducted himself with great moderation.

DR. NICHOLL followed on the same side, and after referring to a few of the principal charges, which he held to be fully proved, said, the court would, on the ground of public policy, feel bound to dismiss the present case. It would be the desire of that court to protect, as far as possible, the security of the navigation of the merchant service of the country, which so mainly depended upon the proper and obedient conduct of the seamen engaged in it. If conduct like that

with which Stephenson had been charged was to be allowed, without any punishment at the hands of the court, a death-blow would be inflicted upon the commercial intercourse of the country with distant lands. It was of the highest importance that the authority of captains of vessels, especially when in distant parts of the world, should be fully supported by that court, and infinite injury would be produced, if at a period when free trade induced owners to send the ships to the most remote parts, seamen were to learn that conduct such as that imputed to the mate, were to be allowed, without any consequences whatever. He submitted the case had been proved, and that there was no ground to believe that the captain had acted towards the mate as he had alleged.

DR. ADDAMS replied to the arguments offered on the other side, and stated that even if Stephenson had been guilty of single acts of disobedience or neglect, his conduct throughout was generally respectful and officer like, whereas the other parts of the crew to whom wages had been willingly paid, had been proved guilty of mutiny, wilful and persisted in. He (Dr. Addams) considered that it would render very little benefit to the maritime service, if seamen, because they had committed, during a voyage of eighteen months' length, one single fault, were not to be remunerated for their arduous services.

SIR JOHN NICHOLL said as this was a case of some importance to the commerce of the country, as well as to the parties, he should take time to consider his decision.

Monday, January 23.—The suit again came before the court to-day, when the judge gave his decision. He stated at some length the circumstances of the case, and read the evidence of the principal witnesses brought forward on behalf of Mr. Stephenson, but thought that the court must look with great caution at their testimony, in consequence of some of them having brought actions against Capt. Fewson at the police-offices, and therefore of course being interested in this litigation. The first question which came to the consideration of the court was, whether Mr. Stephenson's conduct during the outward voyage was consistent with the duties of chief mate, and whether the language which he used towards the captain could be justified? Now he (the learned judge) felt no hesitation in saying that Stephenson's conduct was ungentlemanly and unofficer-like, and that he had on several occasions in the most flagrant manner neglected his duty. With regard to the language he was in the constant habit of using towards his master, the relative situation in which they stood must be remembered, viz. that Captain Fewson had brought him up since boyhood, and had taken him five or six voyages previous to the one concerning which this suit had been entered, that he must be considered in *loco parentis*, in addition to that of captain, and that therefore he might justly claim higher authority over him than over an ordinary person filling the office of chief mate. Taking these facts into consideration, the court again felt it its duty to state that Mr. Stephenson's conduct on this point deserved the deepest censure. The next important occurrence which demanded the serious attention of the court was respecting the loss of the jolly-boat, and of the lives of the two men who were drowned on that unfortunate expedition; and the question which it had to decide was, whether the blame of that acci-

dent attached to Mr. Stephenson, as had been set up by the captain, by whom he, in consequence of that, in addition to the other faults of which he had been guilty, was disrated. It had been asserted by the captain, that the boat was lost in consequence of an attempt to land made by its crew, in direct opposition to his orders, who had commanded Stephenson, to whom the boat was entrusted, not to land, or approach too near to the shore, but to communicate with the natives by means of a speaking-trumpet. Whether this command was obeyed by Stephenson or not, there is no evidence to prove; but it is clear, that the loss of the boat was occasioned by the professional incapacity of that person, and that Captain Fewson's duty compelled him to take the responsible office of chief mate from one who had proved himself unequal to it. Now, as to the main issue in the suit, viz. with regard to the payment of wages, the court need not look out of the case itself, for in the ship's articles, which "every seaman was compelled to sign before entering on a voyage, it is stated that every officer, seaman, and others, shall agree at all times, and in all places, to obey the orders of the master, and to perform their proper duties by day and by night;" and, again, that "each and every one there shall use his best endeavours for the preservation of the vessel and appurtenances, as well as of the stores and cargo; and shall not, on any pretence, go out of the vessel by day or night, without the express leave of the officer in command; and if they do so leave the vessel, even for the space of one hour, without leave as aforesaid, and shall neglect or refuse to perform their duties in any manner whatever, they shall forfeit the whole amount of wages due, and all their clothes and effects, and that it shall be so determined in every court of judicature in this kingdom." What then remained for the court to do, if it was of opinion that Mr. Stephenson "had neglected or refused to perform his duty," as it most certainly was? Nothing but to follow the course laid down in the passages quoted, and the court accordingly decided that a complete forfeiture of wages had taken place. The learned judge animadverted with great severity upon the behaviour of Mr. Young, the cabin passenger, who went out on board the vessel as agent and supercargo, to protect the interests of the shippers, and who, on the outward voyage, conducted himself with great impropriety towards the master; and the learned judge attributed Stephenson's insubordinate behaviour to the master, who had befriended him, principally to his associating, as mate, in the cabin, with Mr. Young. The latter, who believed it to be the master's intention to make a complaint against him to the first king's ship he met, drew up a document, and clandestinely procured the signatures of the crew to it, and the first name in this improper document was that of Stephenson, the chief mate. This was conduct, the learned judge observed, on the part of the mate, nearly amounting to mutiny, and was calculated to excite insubordination amongst the crew. The learned judge thought that Captain Fewson had exercised a proper discretion in disrating his chief mate, who had been guilty of acts of negligence; but it was probable he might have been restored had he evinced contrition, and a desire of repairing his errors. But, instead of that, he abused the master behind his back, and annoyed Lamb on account of his acting as mate. Captain Fewson might have

TRIAL AND SENTENCE OF CAPTAIN CANNELL.

THOMAS CANNELL, a respectable looking person, the captain of the brig Laurel, was indicted for the murder of a seaman of the name of Campbell.

Mr. Phillips defended the prisoner.

From the evidence adduced, it appeared that in the beginning of the month of November, the brig Laurel was off the coast of Africa, and where the deceased was shipped. On the 8th of the same month the prisoner struck the deceased two blows, one over the eye, and the second on the head; the blows were struck with a snatch block. The prisoner then went to the galley, and took out a piece of rope called canada, and he commenced beating the deceased violently across the shoulders. The deceased was then ordered to come forward, when the prisoner said he did not come fast enough; when the deceased said he could not come faster, in consequence of the thrashing he had received, which had made his back as sore as a boil. The prisoner then said, you old — I will make you come faster. He then said that the canada was getting too soft, and he must get another rope; which he did, and he then beat him until he fell senseless upon the deck. He then ordered two black boys to throw some water over the deceased while he was lying on the deck; and accordingly several buckets were thrown over him. The prisoner then said to the crew, take the old — down, and dry him. During this time the deceased remained senseless; but he subsequently crawled below. The prisoner, however, ordered the mate to bring him up to work. The deceased could not move, when the mate and another man brought him up. The deceased appeared to be in a dreadful state, and he was placed upon some spars, and he leaned against the bulwarks. The prisoner observed, that if the old — died, he supposed he would be hung, but he would swing gloriously. On the following day, the prisoner again beat the deceased, who died about four o'clock on the afternoon of the 10th of November. After he was dead his head swelled very much; he was sewn up in two bags; when the prisoner read over him the prayers for the dead, and committed him to the deep.

The witnesses, in their cross-examination, stated that the deceased was a very dirty man, and lazy; for when the captain was out of the way he would not work, and none of the men would associate with him. The deceased was to work his way home; he had been shipwrecked on the coast of Africa. The deceased had been forbidden to go to the galley, in consequence of being so filthy. The rope with which the prisoner had beat the deceased was produced, and was about one inch and a half in circumference.

Mr. Phillips said it now became his painful duty to address to the jury such observations as might suggest themselves to his mind. They would recollect that the life of the prisoner was in their hands; for he was charged with an offence, which, if true, was one to which the mercy of the crown could not extend. When he read the brief which had been placed in his hands, he said to himself that difficult would be his task; for the evidence which would be, and had been, adduced, had excited a deep, gloomy, and indelible impression against the un-

fortunate man. His situation was dreadful ; for he was in a state of helplessness : he was without witnesses, and was consequently in the hands of the men who had come forward and had given evidence against him. Unless through the assistance of Providence, there was no escape. Unless he could shew such discrepancies in the evidence as to render it impossible to be believed, the fate of the unfortunate man was sealed—for his life was entirely in the hands, not of his prosecutors, but of his persecutors. When a party was accused of a crime of so deep a nature, did it not occur to ask what motives could cause such conduct? None had been offered; and therefore was it not a base conspiracy on the part of the ship's crew? They would recollect that the life of the unfortunate man rested entirely upon the callous, reckless, swearing of the crew. Before he had finished, he had no doubt he should be able to prove that all the witnesses were perjured; that one of them, who had been found guilty of the double offence of theft and drunkenness, had come smarting under the infliction of the cat-o'-nine-tails into the witness-box for the purpose of revenge. Then let them turn their attention to the conduct of the unfortunate captain; he, accused of being a merciless tyrant—why, he with kindness and generosity forgave Jones his offence—a deep offence on board ship—and reinstated him in his former rank. Was not that the act of a generous, kind-hearted man? Could they believe the prisoner to be the monster he was described in the indictment, when it had been proved to them that he had read the beautiful funeral prayer over the deceased, in the presence of the Almighty God, on that boundless element, the sea? Could it be believed in a Christian country that a man—a Christian—could stand before his God, appealing to his Creator on behalf of a fellow-creature just dead, uttering a prayer for his soul—could they believe he was the murderer, and the corpse his victim? The learned counsel dwelt with fervid eloquence on these points. He then read a letter sent from the witness Bourne, the first mate, to Captain Cannell, the prisoner, to shew the mutinous conduct of the crew, and that it was at variance with the testimony he had given that day. The letter was to the effect that the writer wished to leave the ship Laurel, and to give up his appointment as chief mate; for, that he could not, in justice to Captain Cannell, or to the owners, remain any longer, as the crew paid no obedience to orders, or to any thing that was said to them. The learned counsel animadverted upon the conduct of other witnesses, and concluded by calling upon the jury to pause well and deeply before they returned their verdict; for if they found a verdict of guilty, the days of the unfortunate man were numbered, and but a few days would elapse ere the grave separated him from this world.

One of the owners of the vessel gave the prisoner a good character for humanity.

Mr. Baron Gurney summed up the evidence, and the jury returned a verdict of—Not Guilty of Murder, but Guilty of Manslaughter.

Before Mr. Justice Williams, on the 7th Feb., the Central Criminal Court closed its proceedings, when the prisoners convicted during the session received judgment. Among them was Captain Cannell, of the brig Laurel, found guilty of the manslaughter of Campbell. He was sentenced to fourteen years' transportation.

On the foregoing trial the editor of the *Shipping Gazette*, from which we have taken it, gives us some further information, with the following very proper remarks:—

“Captain Cannell has been acquitted of the charge of murder by a jury of his countrymen, and it is not for us to find fault with their verdict; but this we may add, that his acquittal may be traced to the mercy of his judges, and the eloquence of his talented counsel, more than to any palliating circumstances to be referred to in the evidence. Out of a crew of thirteen or fourteen persons, it is a curious fact, that not one witness could be found to offer an instance of the exercise of that humanity and consideration towards those in service under him, that a ship-master should display, as one of the most essential qualifications for the authority with which he is invested. Neither is there to be gleaned from the mass of evidence of a contrary nature, any instance of provocation on the part of the deceased, that would justify the exercise of a title of the tyrannical severities he was made to undergo. ‘The deceased was dirty and idle’—the natural consequences of a previous series of misfortunes, such as he met with in his recent shipwreck, and the oppression and indignities he had been subjected to.

“The man’s spirit was fairly broken down, but a kind and good commander would have tried to remedy these evils, by mild treatment and admonition; and we take upon ourselves to assert, that, had any man in this day come by his end, on board of any of his Majesty’s ships, under similar circumstances, the affair would be echoed as a matter of diabolical atrocity, from one end of the land to the other.

“Another cause of aggravation is assumed in the fact, ‘that the deceased let go the main-topsail-brace, instead of the main-brace, in bracing round the after-yards when the brig was taken aback.’ To those who are ignorant of the consequences, this matter may be represented as a very serious affair—as one involving mighty risks to ship and crew; but to those acquainted with seamanship, such a representation would not be listened to. The man’s attributed error might, and most likely was, the effect of necessity, from the one brace being belayed over the other on the same pin. But, supposing something had been endangered by his neglect, would it amount to a justification of the conduct of the captain? He strikes him over the brow with a snatch-block—a block of two pounds weight, attached to a tail, a small rope of three or four feet in length, the end of which is coiled, for a more effectual blow, round the hand. To this blow, in all probability, the poor carpenter owed his death; the subsequent treatment of starting, and wetting, and stretching in the sun to windward, to dry, would at any rate materially assist to facilitate the fate which it appears he could not escape. Say that the blow with the block was not the primary cause of the man’s death, but fever or any other disease.

“We must then ask, Was the starting, the wetting, and the drying, the rational remedy to apply under an African sun? A disposition to mutiny, indeed, might have warranted an instantaneous and desperate act on the part of the captain; but was anything of this kind pleaded? No. A crew could not have been more completely under command than was the crew of the Laurel.

“On offences of this character a jury is left to come to their verdict,

without the information that helps to guide them in similar offences committed on shore. They have no surgeon's opinion, no *post mortem* examination; and, although we are not sorry that the offence of Capt. Cannell has had the most merciful consideration of a jury, we must say of it that he is fortunate in not having for his judges a jury more immediately his peers—one selected entirely of masters of the mercantile navy. We trust that nothing will be lost in example by the humanity of his sentence."

To make record of the foregoing case, is, we consider, part of our duty to the readers of the Nautical Magazine. In doing so, we cannot refrain from expressing a hope that we may never be called upon to sully our pages with the relation of a similar outrage. Dr. Johnson has observed, "that to pass a portion of one's life on shipboard, was in effect to be sentenced to so long a term of imprisonment, with the additional punishment of a chance of being drowned." Without thinking so desperately of the seaman's situation as the learned doctor did, we still admit that it needs no augmentation of difficulties or unpleasantness. Those that naturally pertain to it have ever, by the best commanders, been considered sufficient. It has been often urged, that ill conduct on board some of our smaller merchant vessels is frequently constrained by the most unpardonable violence; and instances have been referred to by different writers, which in too many cases corroborate such an argument.

That these cases have of late been less frequent in merchant ships, we have pleasure in admitting; but it is our wish that the mercantile navy should be entirely freed from the odium which masters of ungovernable temper have at times thrown upon it.

By omitting no opportunity of animadverting upon, and severely censuring, every act of such a tendency, that may come to our knowledge, we think we are pursuing the most political course to accomplish this desirable object; and we are aware that every one of our experienced nautical readers will concur in our opinion of the case of Captain Cannell.

We have ever remarked that the best ordered crews are those who are ruled with consideration and kindness; and the most prone to disobedience and mutiny, are those, in nine cases out of ten, which have been spurred on to such a course by premeditated and prolonged insult and cruelty.

To select a man from a crew, and subject him to a series of indignities, such as those which were heaped upon the unfortunate carpenter, is, on the part of a ship-master, nothing less than to tempt to a breach of that order and security, for the maintenance of which, and that only, he is armed with the discretionary authority he possesses; and it is highly creditable to the crew of the brig Laurel, that they did not suffer themselves to be thus tempted in the case before us.

Unanimity amongst a crew, it should be recollected, is not all that a ship-master has to consider: the unanimity may be against himself, and against the interests that the owner and the merchant have intrusted to him. When it is so, it is palpable to whom the blame attaches. At any rate, he must be far happier in his command, who

rules by kindness and skill, than he who strives to rule by any opposite course.

We recommend the case of Captain Cannell to the consideration of every young seaman, with this additional remark, that the qualities most admired, and most to be cherished in a British sailor, are, self-possession, unostentatious bravery, and benevolence; and he alone is worthy of the title who not only has them, but exercises them always.

WRECKS OF BRITISH SHIPPING—FROM THE SHIPPING GAZETTE, 1837.

(Continued from page 300.)

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
Africanus				Tamatave	15 Nov.	
Alexander					25 Feb.	Supposed wrecked.
225 Alcindale	Country ship	China	Singapore			
Amity, of S. Shields	Fuck	Sunderland	Hamburgh	Boreum	18 Feb.	Crew saved.
Ariadne	Cleat	Of S. Shields	Abbeville	Kent Knck.	24 Feb.	
Atlantic				Robin Hood B.	24 Feb.	
Aurora				Cromer	24 Feb.	
230 Avon	Clarke	Pernambuco	Maranham	Abandoned off	Para R.	Crew saved.
Bobby Bruly	Gook	Hartlepool		Southsea	23 Feb.	Run down by Sarah.
Cartha	Morison	Newcastle	London	Off Scarborough	8 Feb.	Abandoned.
Catherine, schooner	Of Plymouth	Dundee	New York	Arvert	11 Feb.	Crew saved.
Cossack, of Shoreham		Viana	Bordeaux	Margate S.	1 Feb.	Crew saved.
225 Countryman, of Har-	rington, Wilson	seen abandd.	in Dromore B	M. Galloway	18 Feb.	Crew saved.
Despatch	Lumber laden	Newcastle	in 23° and 65°	by brig Samuel	24 Feb.	Arrived at Liverpool.
Duke Wellington	Brown	Dublin	Werkington	Off Southwold	17 Feb.	Foundered, crew svd
Eliza		St. John's	Liverpool	Ribble	15 Feb.	
Elizabeth		Farragona	Liverpool	Gibraltar	15 Feb.	46 N. 30 W.
240 Elizabeth	Loppt	Newcastle	London	Not heard of	since	Crew saved.
Ellen		Newcastle	London	Swin	24 Feb.	22d Feb.
Emancipation		Newcastle	London	C. China	since	Crew saved.
Fairy	Makay	Sunderland	Not heard of	since 20th Nov.		Crew sup. murdered.
245 Farcam	Law	Liverpool	New York	Tuskar R.	15 Feb.	Ten lives lost.
Glasgow	Robinson	St. John's, Nfd.	Workington	Liccombe	17 Jan.	All lost.
Gratitude				Off Fluegra	15 Feb.	
Harbinger	Champion	Sunderland		Shoreham	20 Feb.	Crew saved.
Hebe	Frucman	for Dublin				
Henrietta	Left Dundalk	Cardiff	Not heard of	since Dec.		
250 Jane	Wood	for Dublin	Cardiff	Off Lizard	28 Jan.	Run foul of.
Jane and Margaret	Of Hull	Stern found	London	Isle Man	17 Feb.	
James Lumsden		Sunderland	Not heard of	since 25th Oct.		
Jenny, of Glenarm	Glenarm	Belfast	Dublin	Off Albany	16 Feb.	
John	Leslie	London	Shields	Horses	28 Feb.	Crew saved.
255 John Hunter	Lang	Newcastle	London	Off Wivenhoe	24 Feb.	Crew saved.
Juno, of Perth		Dundee	London	Mouth of Tay	10 Feb.	All lost.
Kiero	Sheppard	Bombay	Hull	I. Pico	Nov.	
Lady Catherine	Douglas	Belfast	Dumfries	I. Withorn	11 Feb.	Crew saved.
Maria		Sydney, C.B.	St. John's	Scaterie	5 Jan.	Crew saved.
260 Mercy, of London	Fulcher	Stern drifted	on shore at	Off Southwold	24 Feb.	
Mischief, schooner		Liverpool	Messina	C. Wales	21 Feb.	Supposed.
Paul Fry		Yarmouth	Kent Knck.	Humber	22 Feb.	Crew svd. by P. lugger
Princess Victoria		Calcutta	Liverpool	Off Mauritius	Oct.	By fire, reported.
Progress	Hausell	Stockton	London	Run foul of.	8 Feb.	
265 Rabycastle	Greensides	London	Stockton	Clay	24 Feb.	Crew saved.
R. F. D., a brig	Passed abandnd.	Newcastle	and waterlog.	53 N. 45 W.	9 Jan.	of Withorn, by Minion
Rosehill		Newcastle	London	Off Southwold	24 Feb.	Foundered, crew svd
St. Lawrence	Hall	Newcastle	London	Middle Sand	24 Feb.	Crew saved.
St. Patrick	Brickley	Coutmaherry	Bristol	Brecksca Point	24 Feb.	One drowned.
270 Sarah	Wood	St. Kitt's	St. John's	Quoddy Head	2 Jan.	Two drowned.
Sir H. Davey	Brown	Newcastle	Warren	Holly Island	9 Feb.	Crew saved.
Sophia	Maclure	Demerara	Newfoundland.	Great Placentia	19 Nov.	Crew saved.
Sophia		Valparaiso	Liverpool	Liverpool	8 Mar.	Crew saved.
Spanish Packet	Woolton	Tenoa	Liverpool	Black Rock	9 Feb.	3 saved, C. Ireland.
275 Stirling Castle	Fraser	Singapore	Singapore	Eliza Reef	21 May.	1830.
Success	Condy	Demerara	Newfoundland.	Lamarna	15 Nov.	Crew saved.
Sultan	Hill	Liverpool	New Orleans	C Wexford	22 Jan.	Crew saved.
Superior	Of Cardiff	Hull seen	abandoned,	Jcal laden	20 Oct.	30 N. 17 W.
Swallow	Barker	Stockton	Boston	Off Easington	24 Feb.	Crew saved.
280 Talisman				English Bk.	15 Nov.	River Plate.
Tamarac	Kane	Liverpool	New York	Off Sandy Hook	11 Jan.	Crew saved.
Thomas Jolly, schar.	M'Kenzie	Thurso	Newcastle	Westport	24 Feb.	
Thomas Ferguson		Sunderland	London	Wivenhoe	26 Jan.	Crew saved.
Three Brothers	Sloop	Hartlepool	Whitby	North Sea	8 Feb.	Abandoned.
285 Three Brothers	Hargrave	Goole	Boston	Off Rose Sand	14 Jan.	Crew lost.
Tiger	Searight	Liverpool	Bombay	Astoria	12 Aug.	Crew part saved.
Triad, of Whitehaven	Seen abandoned	in 46° N. 34° W.	by Amer. brig	Clitus.	30 Dec.	
Triumph, of Cork	Abandoned at	Shields	Whitstable	Long Sand	5 Jan.	Crew saved.
Twig, of Jersey				Monte Video	1 Nov. 3	Crew saved.
290 Urania	Burgess	Run down	Off Humber	Off Humber	10 Feb.	Crew land. at Grimaby
Venus		Newcastle	Off Whitby	seen off Whitby	6 Feb.	Crew saved.
Vine	Dawson	T. Gallart	Part of wreck	seen off Whitby	15 Dec.	
William and John	Small	Of Newcastle	Newcastle	Isle Man	3 Feb.	Crew saved.
William Macley	Tynes	Bangor	Newfoundland.	C. Chapeau R.	9 Jan.	Crew saved.
295 William and Mary	Patton	Barbados	China	Off Acheen	Aug.	Captain & wife murdered by crew.
Zoroaster		Pedir				

THE RIBBLE.—In alluding, at page 195 of our last number, to the mark of respect displayed for Captain Belcher, by the meeting at Preston on the 9th November, we inadvertently placed our record of it under the name of Wyre Harbour. This officer having so recently assisted in pointing out the improvements now carrying into effect at the mouth of the Wyre, it will be readily seen led to the mistake.

PALMOUTH, MARCH 23.		Last Packets sailed.	Next Packets due.
Lisbon	} Every Saturday	H.M.B. Nightingale, [Mar. 20]	H.M.B. Linnet Mar 14
Madeira			
Spain			
Gibraltar	} First Day of every month	H.M.S. Hermes, Mar. 3	H.M.S. Volcano, [Mar. 30]
{ Malta, Greece,			
{ Corfu, Egypt, and			
{ India			
Madeira	} First Tuesday in each month	H.M.B. Tyrian, Mar 11	H.M.B. Spey, May 1 [Mar. 12]
Brazil and B. Ayres			
America	} First Wednes. do.	H.M.B. Alert, Mar. 4	H.M.B. Sheldrake
{ Jamaica, Leewrd.			
{ Islands, & Hayti	} First Day in every month	H.M.B. Lyra. Mar. 3	H.M.B. Mutine, Mar. [20]
La Guayra			
Mexico & Havannah			
{ Jamaica, Leewrd.	} 15th ditto . .	H.M.B. Briseis, Mar 17	H.M.B. Lapwing [Mar. 24]
{ Islands, & Hayti			
Carthagena	} 15th ditto . .	H.M.B. Opossum, [Mar. 17]	H.M.B. Pandora, [April 12]

NEW BOOKS.

BRITANNIA, or the Moral Claims of Seamen stated and enforced. By the Rev. John Harris. Ward, London. 27, Paternoster Row. 1837.

This is an excellent and powerful appeal in aid of the objects of the *British and Foreign Sailors' Society*, and we congratulate the Society on having found so able an advocate as Mr. Harris proves himself to be. The subject we consider as particularly belonging to ourselves; and it is want of time and space only that prevents our giving it the attention which it deserves at our hands. This, however, it shall assuredly receive, and we recommend the work to the serious attention of those who know the value of seamen to this country, as well as to those who do not, and who wish to see them raised from their present too-often degraded condition.

DIRECTIONS for ascertaining and counteracting the Local Attraction of the Mariners' Compass, &c. &c. By Thomas Fotheringhame, Master, R.N. Taylor, 103, Minories.

It is gratifying always to find the important subject of "Local Attraction" brought forward, and we are pleased to see that Mr. Fotheringhame has not considered his hand too enfeebled by years to grapple with it. In our present number will be found an essay on it; and if the seamen follow the simple directions we have therein given, we shall rejoice that Mr. Fotheringhame has preceded us, and succeeded so well in pointing out the dangers of neglecting them.

LIVES OF THE BRITISH ADMIRALS, *with an introductory view of the Naval History of England.* By Robert Southey, LL.D. Vol. IV. Longman and Co.

We can do little more at present than notice the appearance of this volume. The work carries with it its own recommendation, but we shall speak more critically of it in our notices of the succeeding volumes. The lives of those celebrated commanders, the Earl of Essex and Sir Walter Raleigh, occupy the present volume; and it cannot therefore be otherwise than rich in the narrative of interesting scenes and events.

CAPTAIN MARRYATT'S NOVELS.—We observe that the third volume of "*Peter Simple*" promises an improvement in the illustrations of the future works of this author. We shall be glad to see it carried into effect, and that the publishers will shew themselves in earnest in "*Jacob Faithful*," which we find is to appear on the first of April.

NEW CHARTS.

A CHART OF THE MOUTH OF HOOGLY RIVER, *and of the Roads of Balasore and Piply, from Point Palmyras to Lacams Channel.* R. H. Laurie, 53, Fleet-street, London. 1836.

This is a very valuable little chart. It is on a scale sufficient for all the wants of the seaman, and distinctly shews the approaches to the river, with the various channels at its mouth. The interior is also well filled with information, and we consider it one that no person should be without who is about to visit the seat of government of our East Indian possessions. In fact, such a chart as this is most desirable to any one going there, in order to give him a correct idea of the geographical feature of the lower part of this magnificent river.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Lieutenants.—H. Eden, J. E. Katon, G. C. Adams, G. D'Eyncourt.

Surgeons.—J. C. M'William.

Pursers.—J. W. Nicholls, R. Hayes, J. Pead.

APPOINTMENTS.

Captains.—J. Leith, 1; J. Lillicrap, 38; G. Sayer, 38;

Commanders.—J. C. Wickham, 18; T. Ogle, 21; Hon. P. P. Carey, 31; Z. F. Hol-
linworth, 32; N. Corry, 13; P. Blake, 34; E. Boys, agent for packets, Dover.

Lieutenants.—W. Lowcay, 2; H. Ilworth, 3; J. J. Loney, Semaphore, Portsmouth; L. J. Jones, F. G. Forbes, A. Murray, H. H. Bingham, 4; E. Bevan, 8 to command; Colpoys Dickson, flag L. to R. Adm. Warren; R. W. Otway, 4; T. Hills, Semaphore at Midhurst, J. H. Murray, 12; T. Forrester, 15; M. Allen, 1; C. Gayton, to command, 20; H. Church, 21; J. S. Ellman, 10; R. Lowcay, 2; F. Tulloch, R. Hospital, Plymouth, N. Williamson, 22; W. C. Burbidge, 24; J. Lash, 25; F. Coffin, C. D. Warren, J. Gutzmer, 26; W. Winniatt, 28 to command; W. Oldham, 29; H. D. Rogers, 31; E. Truscott, 22; P. B. Stewart, 34; C. Knighton, A. Plymsell, 38.

Masters.—T. Elson, 4; J. Henderson Asst. Mast. Attdt. Chatham; W. Purdoe, late Chatham to Mast. att. Sheerness; R. Easto, 24; J. Napier, M. attdt. Malta; T. A. Wemyss, 31; S. Lark, 32; H. Mapleton, (act.) 30; W. Larby, (act.) 7; J. Batcombe, (act.) 34; G. Parsons, 35.

Surgeons.—R. Douglas, 3; J. R. Nation, A. Johnson, 13; E. Scott, 10; T. H. Williams, 31; M. Thompson, 32; J. Stevenson, 32.

Pursers.—W. G. Mason, 4; T. Woodman, Sec. to Adm. Hon. Sir C. Pagett, E. Brown, 31; E. F. Roberts, 32; G. Sheppard, 34.

Chaplains.—P. Somerville, 21; E. J. Paget, 10.

Mates.—J. H. Cockburn, 4; F. Campbell, 5; R. St. Aubyn, 5; T. Lysaght, 9; J. H. Cockburn, C. L. Hocker, C. H. Johnson, R. Reid, M. S. Kirkes, J. H. Kay, M. Kerr, L. R. Place, J. F. Warre, 4; H. L. Cox, 11; W. B. Miller, 14; W. Crawford, 7; M. Knox, 13; A. Wiseman, 16; J. C. Pittman, 18.

Second Masters.—D. Duncan, 4; W. T. Scott, 2; C. Tozer, 20; W. Dutton, 2; J. H. Cook, 17; A. J. Samwell, 20; E. C. Hamersham, 16; D. Craigie, 28.

Assistant Surgeons.—A. R. Bradford, C. Priaulx, W. Kent, 4; G. D. Steel, 5; J. Thompson, M.D., Haslar H., P. Reilly, 7; W. H. Forster, 16; W. T. Rogers, T. Fraser, J. G. M'William, 10; F. Charlton, M.D., C. D. Steel, 5; J. Bower, 23; W. Orr, 29; R. M'Clay, 20.

Midshipmen.—H. C. Jeffrey, G. Cleveland, J. Simpson, J. Ovenden, H. L. Hillyar, A. Vansittart, 4; G. Greathead, 10; G. Graham, (coll.) 30.

Volunteers, 1st Class.—G. T. Hornby, 4; F. P. Warren, (coll.) 10; F. O. Reilly, F. P. Warren, 10; W. T. F. Jackson, 17; T. Gresham, 18; P. Osborne, 13; A. J. Forrest, 18;

Clerks.—G. Hopkin, 2; J. King, 7; A. Gilbert, 20; J. D. Primrose, 27; J. H. Archer, 33; S. Giles, 12; W. Bone, 28.

Boatswains.—J. Fox, 4; W. Bunce, 31; W. Andrews, 32; W. Powell, 34.

Carpenters.—W. Hindmarsh, E. Andrews, 31; J. King, 32; W. Sedden, 34.

Gunners.—J. Briggs, 4; T. Norman, 34.

Schoolmaster.—W. Bates, 4.

[Vessels' Names to whom Officers are Appointed.]

1 Seringapatam.	11 Harlequin.	21 Hercules.	31 Comus.
2 Sparrow.	12 Tweed.	22 San Josef.	32 Sappho.
3 Stag.	13 North Star.	23 R. Adelaide.	33 Speedy.
4 Princess Charlotte	14 Leveret.	24 Victory.	34 Larne.
5 Thalia.	15 Lyra.	25 Howe.	35 Asia.
6 Mastiff.	16 Britannia.	26 Coast Guard.	36 Dolphin.
7 Pelorus.	17 Samarang.	27 Russell.	37 Excellent.
8 Pincher.	18 Dido.	28 Viper.	38 Greenwich out pension.
9 Salamander.	19 Beagle.	29 Scylla.	
10 Cornwallis.	20 Scorpion.	30 Snake.	

Births.

In George-street, Devonport, the wife of Lieut. Shapcote, R.N., of a son.

In January, the lady of Lieut. F. Collins, R.N., chief officer of Coast Guard, Bantry, of twins, still-born.

At Buchanan-street, Glasgow, N.B. on the 20th Feb., the lady of Lieut. James Inglis, R.N., of a son.

On 20th Feb., at Red Cross, the lady of Lieut. G.M. Donlevy, R.N., of a daughter.

At Plymouth, the lady of Sir Henry Blackwood, Bart., of a daughter.

Marriages.

On the 16th Feb., at Wickham, John Blatherwick, Esq., to Eliza Amelia, daughter of the late Captain Mosse, R.N., who fell in the action at Copenhagen.

At Kingston, near Portsmouth, Lieut. T. P. Brown, R.N., to Louisa, daughter of the late Peter Breton, Esq., of Calcutta.

On the 16th Feb., at Eastchurch, Kent, George Augustus Callaway, Esq., to Louisa, daughter of the late Lieut. Napier, R.N., of Stonehouse.

In Glasgow, Francis Logan, Esq., Sur-

geon, R.N., to Janet, daughter of Captain R. Wallace.

At Athlone, Rear Admiral the Hon. Wm. Le Poer Trench, of St. Clerans Galway, to Margaret, relict of the late A. Hancock, Esq., of Belfast, and niece of Viscount Castlemaine.

On the 3d Mar. Mr. J. T. Crout, Jun., R.N., to Sarah Elizabeth, the daughter of Mr. Ohlyssen, R.N., of Portsea.

Deaths.

At Upper Deal, Kent, Admiral Sir John Harvey, K.C.B.

On the 8th Feb., at Exmouth, of influenza, Adm. Sir M. Dixon, K.C.B. aged 67.

On 16th Feb., at Warminster, aged 65, Rear-Admiral Wm. D'Urban.

Feb. 16th, at his residence, Summerland Place, Plymouth, Captain Joseph James, R.N., aged 77.

On Feb. 16th, in London, George Peard, Esq., Commander R.N., of Exminster, in the county of Devon.

In Chapel-street, Devonport, Mrs. Sarah Shrapnell, relict of the late Lieut. Edward Shrapnell, R.N., aged 67.

On the 1st March, at Roberts Cove, Ireland, Lieut. Wm. Dunnage Masters, on the Coast Guard Service.

At Bridgewater, Commander Thomas Boys, (on the retired list.)

Lately, Com. Andrew Baird, (1826).

On the 12th March, at Crewkerne, Dorothy, widow of the late John Draper, Esq., Captain, R.N.

Lately in Portland-place, Stoke, Plymouth, Mrs. Wharton, wife of Lieut. John F. Wharton, R.N.

At his house, Denmark Cottage, Tamerton, Lieut. F. Sparrow, R.N.

Lately, at his house, in Princes-street, Devonport, aged 70, Commander Henry Hutchins Birkhead, R.N.

Lately, Mrs. Wolfe, aged 52, widow of the late Captain George Wolfe, R.N.

In Dorset-place, London, Lucretia, widow of Admiral C. P. Hamilton.

At Haslar Hospital, Mr. Charles Cameron, Surgeon, R.N.

At his residence, Poole, in Dorsetshire, aged 89, Mr. Wm. Price, Master, (1777) R.N., who had been the father of the list upwards of 20 years.

At Campbeltown, N.B. aged 80, Mrs. Morris, widow of the late Capt. George Morris, R.N.

At Valparaiso, William, eldest son of the late Capt. Campbell, R.N., of East Looe.

Lately, Commander James Manderson, (1806).

At the Royal Naval Hospital, Malta, Mr. J. F. M. Little, second master of H.M.S. *Vernon*, aged 27 years.

METEOROLOGICAL REGISTER,

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

FEBRUARY, 1837.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	W.	30.00	30.04	39	43	37	45	S.E.	S.E.	2	2	Of.	Of.
2	Th.	30.29	30.27	40	45	39	46	S.E.	S.E.	2	2	O.	O.
3	F.	30.32	30.31	41	47	38	48	E.	E.	1	1	O.	O.
4	S.	30.35	30.34	32	37	28	38	E.	E.	2	2	Bc.	Bc.
5	Su.	30.39	30.39	35	36	32	37	S.E.	S.E.	2	2	O.	Bc.
6	M.	30.36	30.32	30	36	25	36	S.E.	E.	2	2	B.	B.
7	Tu.	30.27	30.34	30	40	25	41	S.E.	S.E.	1	2	B.	Bc.
8	W.	30.14	30.14	36	45	29	45	S.	S.	4	5	Bc.	Or (4)
9	Th.	30.28	30.23	45	47	41	48	S.	S.W.	3	3	O.	O.
10	F.	29.92	29.76	47	50	42	51	S.	S.	5	7	O.	O.
11	S.	29.27	29.14	48	49	44	50	S.	S.	9	10	Qr (1) (2)	Oqp (3)
12	Su.	29.50	29.56	37	43	35	44	S.W.	S.W.	5	5	B.	Qr (3)
13	M.	29.28	29.25	48	50	37	52	S.W.	S.W.	5	7	Qr 1)	Qr (3)
14	Tu.	29.37	29.46	39	47	35	51	S.W.	S.W.	3	3	Bc.	Bcprh (3)
15	W.	30.00	30.06	37	47	31	48	S.W.	S.W.	3	3	Bc.	O.
16	Th.	30.13	30.13	46	54	43	55	S.W.	S.W.	4	5	O.	O.
17	F.	30.27	30.32	43	48	41	50	S.W.	S.W.	2	2	B.	B.
18	S.	30.01	29.83	44	50	34	51	S.W.	S.W.	5	6	Od (1) (2)	Qr (4)
19	Su.	29.70	29.43	41	43	33	48	S.	S.	6	7	Qr (2)	Qr (5)
20	M.	29.48	29.68	40	45	38	47	S.W.	S.W.	4	5	B.	Bc.
21	Tu.	29.53	29.57	45	51	40	52	S.W.	S.W.	6	7	Qbcp (2)	Qbc.
22	W.	29.85	29.91	39	47	36	48	S.W.	W.	5	6	Qb.	Qbc.
23	Th.	29.61	29.26	43	50	37	50	S.W.	S.W.	8	9	Qor (2)	Qor (3)
24	F.	29.73	29.82	40	43	33	42	N.W.	N.W.	7	8	Qbc.	Qbcphs (4)
25	S.	30.07	30.11	34	38	31	39	N.W.	N.	6	7	Qb.	Qbc.
26	Su.	30.20	30.18	32	38	28	39	N.	N.	3	4	Bc.	Bc.
27	M.	29.98	29.93	35	38	31	41	S.W.	S.W.	2	2	O.	O.
28	Tu.	30.06	30.08	37	39	33	41	N.W.	N.	3	4	O.	O.

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

ORIGINAL PAPERS.

MAY, 1837.

NOTES AND OBSERVATIONS MADE DURING A VOYAGE ROUND CAPE HORN TO THE COAST OF MEXICO, by *Captain Peter Masters, of Liverpool.*

As an abstract of a journal, with the remarks made during a voyage to the Pacific Ocean, may contain some useful information to seamen going there; and as all information concerning places little known is desirable to strangers visiting them, I have considered it my duty so to employ my experience there, that others may benefit by it.

On the 5th July, 1835, we sailed from Liverpool, and on the 12th got clear of the channel. When off Cape Finisterre, we had but a very slight easterly current, although the wind had been some time from the westward. After doubling the cape, it set a little to the eastward of south, averaging eight to ten miles per day, the winds at the time veering from north-east to north-west, generally moderate. In approaching Madeira, the current was more rapid and variable; and on the day before we made Porto Santo, we were set twenty miles E.S.E., and the following day, the 26th, being amongst the islands, the set was twenty-five miles south; we had a fine breeze from the north-east; the following day we were set a little to the northward.

As we approached the Cape de Verde Islands, the current was more irregular, both in its velocity and direction. At noon of the 5th of August, the north end of Brava bore east sixteen miles, and as it was very clear weather, we had a fine view of this island and Fogo. The two rocks which lay north of Brava and west of Fogo, were also distinctly seen. By angular measurement the height of Fogo is 9,494 feet, and Brava 2,810 feet; the variation of the compass $16\frac{1}{4}^{\circ}$ west. Here the current was setting from E. to E.N.E. from ten to twelve miles per day.

On the 6th and 7th we had a fresh breeze from the E.N.E., with squally weather, and heavy rain, thunder, and lightning; there were rippings in the water, indicating a strong current.

On the 8th August, in lat. $11\frac{1}{2}^{\circ}$ N., long. $23\frac{1}{2}^{\circ}$ W., the wind hauled to the southward, and shortly after to the S.W., and continued with moderate and light winds until the 14th, when it became variable from S.S.W. to S.W. We now found the current setting to the north and east, averaging eighteen miles daily; we kept most of the time standing to the south-east.

On the 16th, in lat. $13^{\circ} 40'$ N., long. $4^{\circ} 50'$ W., we tacked to the westward, and, although making a very bad lay-up, I considered it better than getting close inshore, as we made some southing. It was blowing a moderate fresh breeze from S.S.W. to S. by W. until the 19th; (lat. $3^{\circ} 15'$ N., long. 19° W.) We had a short irregular chop of a sea, and the wind hauled to the eastward of south; the current had also shifted, and set from W. to N.W. about ten miles per day.

We crossed the equator on the 20th, in long. $21\frac{3}{4}^{\circ}$ W., with a strong south-east trade-wind. On the 27th the wind hauled more to the eastward; and at six P.M. the next day we passed within a mile and a half of the north-west end of the island of Trinidad; when abreast of it, the wind veered round to north-east, with moderate and clear weather. We had now lost the south-east trade: the variation when abreast of the island was $7\frac{1}{2}^{\circ}$ W.

Nothing can present a more bold and barren appearance than the north-west end of Trinidad. The mountain, broken in every direction into deep gullies, is nearly surrounded by high-pointed rocks, towering up to rival it in height; steep cliffs of several hundred feet high rise abruptly from the sea, all destitute of verdure. There is a beach immediately under the highest part of the west end of the island, from which there is no appearance of access to the interior. A boat might have landed there with safety, as there was no surf of consequence. On the south-east and eastern part are some small plots of green in the valleys, and close down to the water, with a few bushes. About half-way up to the highest part of the island, on the north-east side, is a declivity, on which were a great number of small trees, but the whole of them were lying on the ground, apparently in a decayed state, presenting an appearance as if a hurricane had passed over the island, and torn them up by the roots. On the western part, about two-thirds up the mountain from the shore, is a sloping piece of ground, covered with dry parched grass, and a great number of small trees, also lying on the ground, like the rest.

August 30th, at midnight, a fresh gale sprung up from the south-west, with a high cross sea which constantly broke on board. The barometer had been gradually falling for twenty-four hours before from 30.14 to 29.94, the thermometer only lowering one degree. A few hours after the gale had sprung up and was at its height, the barometer rose to 29.98, and the thermometer fell from 74° to 67° . Towards noon it moderated, with fair weather, which continued until the 4th of September, when the wind gradually hauled into the south-east, with clear weather. The barometer rose to 30.24, thermometer from 65° to 67° . Towards noon the wind came from the eastward, with dark gloomy weather. The upper strata of clouds was very heavy, and came rapidly from the north-west.

On the 5th and 6th of September the breeze had increased to a strong gale, with squally weather, and a very high broken confused sea running. This obliged us to run under close-reefed main-topsail and foresail; and by keeping the wind two points abaft the beam, we made from seven to eight miles per hour. This breeze gave us a good lift to the southward.

On the 7th the wind moderated, and hauled into the north-east at noon, lat. $35^{\circ} 55'$ S., long. $46^{\circ} 53'$ W.; the current had been setting during the breeze about N. by W. ten miles per day; the barometer had fallen to 29.94, thermometer $63\frac{1}{2}^{\circ}$.

The 8th September the wind was north-east; towards noon it blew in sudden gusts, and baffling with thick hazy weather and constant heavy rain. The barometer at noon 29.46, thermometer 59° . The wind suddenly shifted to south-west, and increased towards noon of the 9th to a gale, with squalls of wind, rain, and hail, which obliged

us to lay the vessel to the wind. The barometer rose in the height of the breeze to 29·83, thermometer $52\frac{1}{2}^{\circ}$. Shortly after noon the wind moderated, and the sea went down, so that we could make sail.

During the breeze we caught several fine specimens of the albatross with a hook and line. The wings of some of these birds when spread were upwards of eleven feet from the tip of one wing to the tip of the other. We also caught several Cape pigeons, but their flavour was nothing equal to the albatross, which proved excellent eating, and very much the flavour of hare. If kept a day or two, the meat becomes tender. Our plan was to kill them immediately they were caught, strip the skin off, cut the meat from the bones, and separate the sinews and fat from it; then salt it for a few hours, and afterwards hang it up. When required for use, it was well soaked and parboiled, to remove any rank flavour that might remain. It was then fit for cooking.

September 13th, from 4 P.M. to 4 A.M., it was calm, with hazy weather, when a light breeze sprung up from the south-east. The barometer had been gradually falling during the night and previous day from 30·00 to 29·38, and although the sky had no appearance of a gale, I considered it best to prepare for one. Whilst shortening sail, the weather got thick and rainy; and by the time we had the ship ready for lying-to, a heavy gale came on from the southward, with a high confused sea, and constant heavy rain. I am convinced, had it not been for the barometer, which gave us timely notice on this occasion, that several sails must have been blown to pieces. At 8 A.M. the barometer stood at 29·20, thermometer 52° . Towards noon the barometer began to rise, although at the height of the gale. It kept blowing strong until 5 A.M. of the next day, the 14th, when we made more sail; the barometer had risen to 30·05, thermometer 51° . At noon we had strong breezes and cloudy weather, lat. $41\frac{1}{2}^{\circ}$ S., long. $52\frac{1}{2}^{\circ}$ W., barometer 30·38, thermometer 49° —no current perceptible.

September the 15th it was calm, the barometer 30·57. A breeze sprung up from the northward towards daybreak, which increased considerably. During the previous calm the dew fell heavily, and continued so whilst the north wind lasted. The barometer fell when it first sprung up to 29·49. We found the current setting during the breeze to the eastward, and about twelve miles per day.

On the 19th we made the coast of Patagonia, about Port Desire, the ship being in lat. 48° S., long. $65\frac{1}{2}^{\circ}$ W. On the 21st the wind hauled to the south-west, with a fine breeze and a strong easterly current, which continued the day following. On the 22nd we stood to the westward to get hold of the land. At 4 P.M. we had soundings in thirty-five fathoms, fine brown and black sand, and at five we tacked to the southward, the shore at the time being one mile and a half from us. Cape San Francisco de Paulo bore N. N. W.; sounded in ten fathoms, black sand; barometer 29·70, thermometer 39° . The wind hauled more off the land as we neared the shore; and when we tacked at 5 A.M. the water was quite smooth; at noon, lat. $49^{\circ} 42' S.$, long. $67^{\circ} 40' W.$, the current setting about E. N. E. fourteen miles per day.

The land about Beachy Head, of Patagonia, is nearly the same height for several leagues (by estimation 300 feet) both to the north

and south of it, with a steep white cliff rising from the beach to the highest part. It very much resembles chalk in appearance, and has three or four small strata of a light brown colour running through it, in general horizontal. The surface, or upper strata, about six to ten feet in depth, is a deeper brown, and uniformly the same height from the beach. Small valleys are seen extending from the highest part of the land; a few of them communicate with the beach, but none more than a third of a mile in length. A few stunted bushes, and a brown kind of grass, was all we could perceive where there was any soil. The whole coast had a more barren and miserable appearance than even Tierra del Fuego, about San Diego, or the coast to the north-west of it. We remarked, that as we neared the land, the sea birds left us, and when close inshore not one was to be seen.

We had now fine clear weather, with the wind in general moderate, veering from south-west to north-west. On the 25th, at 6 P.M., we saw Cape Virgins bearing S. 30° W., six leagues; and at eight we sounded in thirty-five fathoms, fine yellow and black sand. Towards midnight it fell calm; our soundings were forty-five fathoms, with the same bottom as before, with the addition of a mixture of black gravel.

We were now in a position to be influenced by the indraught of the Straits of Magellan, if such existed. I paid particular attention to ascertain whether there was any such current; the deep-sea lead was kept on the bottom, with the line remaining slack on deck; and for an hour together the vessel did not move more than her length, and that in the direction in which her head was. This was tried from midnight to 8 A.M., when a light breeze sprung up from the north-west: our soundings at the time were forty-eight fathoms, fine gravel. As it was a day after the full of the moon, had there been any indraught independent of gales of wind, we must have felt it; by this it appears that the strong tides which run through the eastern entrance of the Straits of Magellan do not affect the sea outside Cape Virgins, and Cape St. Vincent, of Tierra del Fuego.

During the last few days the weather could not be finer; and in the whole course of the night, when we were off the entrance of the straits, there was not a cloud to be seen; the barometer 29.91, thermometer 51½°. The motion of the vessel at the same time was scarcely perceptible; the sea was so very smooth, that, had she been in dock, the sails could not have hung more quietly; but a heavy dew was falling, which foreboded a north-wester. At 8 A.M. of the next day it sprung up with a light breeze, and kept increasing. On the 26th the wind hauled to the W. N. W., with clear weather; the barometer at midnight stood at 29.95, thermometer at 52°, the ship going, under every inch of canvass we could set, with a light breeze, from six to seven knots. At 10 A.M. we saw the snowy mountains of Tierra del Fuego. I was in great hopes, as the weather had set in so fair at the full of the moon, at least it would hold out the quarter, so that we might get round the Horn, and well to the westward, before we had a gale. At noon fresh breezes, and clear; the table-land of Orozeo bore S.S.E. ½ E. five leagues. The barometer had fallen to 29.80; but as it had been lower occasionally during the fine weather the few days past, it was not much noticed.

September the 27th, at 3h. 30m. P.M., Cape San Diego bore W. S. W. one mile and a half, the vessel running nine knots per hour. We gradually hauled round the cape, to pass through the Straits of Le Maire at the same distance from the shore; half an hour before we were abreast of the cape, the tide changed, the flood began to set to the northward, and the race which is off the cape rose, and broke furiously, forming a complete whirlpool. In the course of the first half-hour that we entered it, we did not make a quarter of a mile progress. I considered it best to haul farther off the Fuegian shore, towards Staten Land, but found at the distance of five miles the tide nearly as strong; and as the wind had hauled from N. W. to W. N. W., I did not like to run to leeward, to ascertain how it was farther off the cape, particularly as the breeze was freshening, and a number of dark clouds were gathering on the high lands of Tierra del Fuego. As we again neared the shore, we found the tide had slackened to about seven knots per hour. Immediately on hauling round Cape San Diego, we had the straits open, and Cape Good Success was seen rising boldly up from the sea, with its summit covered with snow. We could only see the southern part of Staten Land; the northern parts were covered with a dark heavy haze. As soon as we had reached to the southward of Cape San Diego, we found the tide setting off shore towards Staten Land, so that we had to haul up S. S. E., keeping Cape Good Success under the lee-bow. Towards 8 P.M. the wind hauled to west, with squalls from S. S. W. to W. S. W., and dark cold gloomy weather; the flood-tide at the latter part set S. by E.

At midnight light winds from the S. S. W., and cloudy, the ebb-tide when we were running not more than four knots per hour; about S. S. W. sounded in thirty-eight fathoms, coral bottom. Cape Good Success bore about west five to six miles.

Towards daylight the breeze increased from the W. S. W.; we had to reef the courses, and double-reef the topsails—the sea rose very fast. At noon it blew a strong gale, with hail and snow; the barometer had fallen to 29.62, thermometer in the cabin stood at 53°.

September the 28th, at 4 P.M. the wind had increased to a heavy gale; we had to heave the ship to: there was a tremendous cross sea running, which constantly broke over the vessel, knocked the galley to pieces, and washed the cabouse to leeward. At the time of shortening sail we lost a man overboard. The gale continued until the next day, at 4 A.M., when we made sail. At noon light winds from the W. N. W., and clear weather; latitude 55° 48' S., long. 63° 45' W.: a current had been setting to the eastward.

When this breeze first sprung up the barometer stood at 29.62, and had fallen one-tenth of an inch the four hours previous; when the gale was at its height it stood at 29.59; it then began to rise: when it was at 29.80 the wind moderated.

In running down from the northward to make the coast of Tierra del Fuego, in clear weather the high snowy mountains in the interior will first make their appearance; several of them are very high, particularly the Campana or Bell Mountain. This may be easily known by its singular shape; its north-west part is steeper than the south-east, which falls with a longer slope to the lower part of the range. On the top of it is a part of the mountain, the side of which rises

nearly perpendicular about one and a half of its own diameters, the upper part of it nearly flat; in a few places the dark rocks of the mountain could be seen, where the snow had either melted or fallen from it. To the north-west of the Bell Mountain is the Saddle Mountain, its north-west peak being the most elevated. These are connected by an irregular portion of the same chain, but it is not so high.

As far as I could judge when we were running along shore, this chain of snowy mountains extends from Cape Good Success to the north-west, broken and irregular. The upper part of Cape Good Success, and two other mountains to the westward of it, covered with snow, were plainly seen over the land to the westward of Cape St. Vincent. When we were running down the coast opposite the Brothers, we did not lose sight of them, except for a short distance when rounding Cape San Diego. In clear weather Staten Land can be seen before Cape San Diego, in coming from the north-west. Near the coast, with the exception of that on Cape Good Success, I saw no snow.

The table-land of Orozeo is near the coast high and elevated above the adjacent land. The table is a long piece of level land, but near its north-west end there is a small rise; it then again runs parallel for a short distance, and falls towards the lower land with rather a quick descent. To the south-east of Orozeo are the Two Brothers; and when the Bell Mountain is seen to the north-west of them, their appearance is very much alike, having a gentle slope from the north-west, but steeper to the south-east. When the table-land of Orozeo bears S. S. W. $\frac{1}{2}$ W. and Cape San Diego S. E. by E., the Bell and Saddle Mountains are seen about a third the distance from the south-east to the north-west Brother. The appearance of the north-west Brother is also changed; its south-east part forms a steep curve to the highest part, the upper part being extended and irregular. The coast about Cape St. Vincent is low, and when abreast of it, it forms like a small treble head, the centre one being the highest. On each is a small patch of bushes growing. Its appearance is a little bolder than the land on each side of it. Between Cape St. Vincent and Cape San Diego, the land is lower than any other part of the coast in this direction; and about half-way between them there appears to be a snug bay, from which the land rises gradually to the highest part of Cape San Diego. We estimated its height at 270 feet. From thence the cape extends to the eastward, forming a long tongue of land, with a regular descent, excepting a very slight rise half-way between the highest part and the extreme point. When close inshore, it can be seen that the lower part of the cape terminates with a black cliff, but its height from the beach cannot be twenty feet.

When Cape San Diego bore W. S. W. one and a half to two miles, we had a good view of the line of coast from Cape Good Success to the table-land of Orozeo; Cape St. Vincent appearing with a long low point running out to the E. N. E., Cape San Diego with a gradual slope to the sea, both to the north and south, with a number of small trees or bushes, forming a belt round it, about a third the distance from the beach to the summit.

The highest point of land to the southward of Cape San Diego (in the straits) is Cape Good Success, which rises from the sea at about

an angle of forty-five degrees. To the north of Good Success Bay is a bold point, and also high, to the north of which is another bay; but this is by no means deep. The north side of this bay is formed by a point of less elevation than that of its southern side, but more than Cape San Diego. Between this bay and Cape San Diego is another small bay, the bottom of which is close round the south side of the cape, and about a mile within the run of the headlands. To all appearance, it would never be advisable to anchor in either of the last mentioned bays, particularly when Good Success Bay is so near at hand. As night came on before we had reached opposite Good Success Bay, I can say but little about it; but, judging from the appearance of the land, it must be well sheltered from all but an easterly wind.

I consider from the observations I had the opportunity of making, that with the wind northerly, or even N.W. and a steady breeze, that the straits of Le Maire would be preferable to pass through by day, than going to the eastward of Staten Land, as the water would be smooth and the advantage is gained of being so much more to windward, for if a ship bound to the Pacific, should, in coming to the southward, pass inside the Falkland Islands, a better land-fall cannot be made to ascertain the position of the ship, than the north coast of Tierra del Fuego. Even if it were intended to pass round Staten Land, by passing through the straits the ship would run the distance of Cape Horn, nearly by the time she could get round Staten Land, and in a fair direction for hauling up towards the Cape, and as every mile of westing is of consequence there would be so much distance saved.

I can see no difficulty whatever in making the straits of Le Maire, for should it be cloudy so that the Bell Mountain cannot be seen, the low land about Cape San Diego and Cape St. Vincent is a good guide, and farther to the N.W. are the Brothers and Table land of Orozea; and if the straits are open, the land to the eastward and Cape Good Success will plainly shew the position of the ship. With the wind to the westward it would be preferable to go round Staten Land, than to get entangled in the straits, and in a strong tide way, unless a supply of wood and water is wanted; when daylight can be taken, and entering the straits with the first of the ebb, a vessel would soon beat up to Good Success Bay, where it appears is good anchorage, and both wood and water can be procured. Should the land be made in the evening, too late to run through the straits, about Cape St. Vincent and to the westward of it, is a snug place for dodging about under easy sail during the night.

Staten Land, is high and has a far more desolate appearance than the north eastern coast of Tierra del Fuego.

From the 29th of September to October the 5th, we had very severe weather, the wind veering from W.S.W. to W.N.W. the greatest part of the time; we had reached the lat. of $60\frac{1}{2}^{\circ}$ S. long. $66\frac{1}{2}^{\circ}$ W. the wind hauling into the S.W., we tacked and stood to N.W., with the expectation of weathering Cape Horn, but a heavy western swell and a strong current prevented our making any westing.

October 10th, at 9h. 30m. A.M., we made the Cape bearing N.W. $\frac{1}{2}$ N. 12 leagues from aloft, we could also see the Great Hermit and Cape

Eugano covered with snow, and clouds hanging over them, (variation per amplitude $20\frac{1}{2}^{\circ}$ E.) the whole of our sails, and a great deal of our rigging were in such a damaged state, (although in good repair before we entered the straits of Le Maire,) and the people by having been constantly wet, had fallen sick, a few of them were also slightly frost-bitten, that at times we had not more than half the crew to work the ship. I had determined to run either into Nassau Bay, or the Bay of Good Success, if I could get hold of the land, both to repair damages and recruit the men's health; for independent of their sickness, they were fagged out, by their services being almost in constant request. A few hours before we made Cape Horn, the wind which had been unsteady for some time before, chopped round to N.N.W. with an increasing breeze, and as it would be difficult to get hold of the coast with this wind, and in hopes it would last, we tacked to the westward with fresh breezes and heavy snow showers. At noon we had to shorten sail.

October 11th, at 6 P.M. the largest island of the Diego Ramirez group, bore N.W. by N. eight miles; the wind had now hauled into the N.W., and as it increased it kept westing: at midnight it blew a tremendous gale; we had already laid her to under the close-reefed main topsail, and boom mainsail. At 2 A.M., the main topsail split; the sea was in such a state, that I don't recollect ever seeing it run higher or more confused; the gale lasted the two following days of the 12th and 13th, before we could make sail. During the gale the weather was very thick, with sleet and violent squalls, accompanied with rain, snow, and hail; this drove us to lat. $58^{\circ} 12'$ S. long. $66^{\circ} 12'$ W.

As the wind kept to the W.N.W., with squalls, and heavy showers of hail and snow, we kept standing to the southward, and on reaching lat. 60° S. we found the winds more moderate, but still very squally disagreeable weather.

October the 19th, we fell in with some pieces of loose ice, the weather very thick, and almost a constant fall of snow; we had light winds, and at last fell a calm; our lat. then $62^{\circ} 25'$ S., long. 73° W.; at midnight a breeze sprung up from the S.S.W., which hauled into south and lasted two days: this ran us into long. $78^{\circ} 5'$ W. when the wind veered again W.N.W.

October 26th, at noon, lat. $53^{\circ} 13'$ S., long. $76^{\circ} 57'$ W. The 27th the wind hauled into the S.W., then S. and S.E.; we now made pretty good progress to the N.W., and on the 28th we passed the lat. of Cape Pillar, with variable winds from the S. and E. The weather now began to improve, on the same day we shook out all the reefs, which had not been done for some time before.

In getting round Cape Horn, we found the weather equally as bad, with the wind to the northward as to the southward of west, and that it very seldom changed suddenly. The finest weather, we found in high latitude after passing through the straits of Le Maire, was from lat. 61 to $62\frac{1}{2}$. The first time we stood to the southward, we reached to lat. of $60\frac{1}{2}$, and then had gales of wind.

With respect to standing so far to the southward as is generally advised, I do not think it quite requisite, but if the wind is west, or to the northward of it, it would be better to make a long board of it than to

make short tacks in shore and be entangled with the land. But supposing the wind to be north, or N.N.W., with a breeze, that a ship can carry a fair quantity of canvass to, it would be absurd, in my opinion, to run to the southward, merely for the sake of getting into high latitude. Previous to my sailing from Liverpool, I was advised to run into 60° S. at least, keeping nearly in that parallel of latitude, until I had reached the long. of from 80° to 82°; but the main point is, to make westing, and in doing so, a person must be governed by the wind. I should not have stood to the northward of Cape Horn, if I could have avoided it, until in long. 80° at least, as it is best to give the S.W. coast of Tierra del Fuego a wide berth. In getting round the Horn, we had several gales of wind besides those I have already mentioned, and with weather nearly the same.

The average rate of the current, we found, to be sixteen miles per day, setting to the eastward, but neither in its velocity nor direction was it regular. At times we experienced a very strong current, and the following day there might be none; when well to the southward, we found but a very slight set to the eastward, with the exception of the heave of the sea.

In getting the lat. by double altitudes, I found it of more benefit here, than ever I did before; we were six days following without a chance of a meridian altitude. As to getting lunar distances they were entirely out of the question, I had not a single opportunity.

The following table was drawn up to show at one view what winds we had, and their duration, and also the height of the barometer at the point of the compass the wind was from, taken every four hours, from September the 25th, in lat. 52° 20' S., long. 67° 25' W., to October the 20th, in lat. 62° 25', long. 73°.

WINDS.	No. of Observations.	Means of the Barometer.	Barometer at the Highest.	Barometer at the Lowest.	Difference.
North	1	28·64	28·64	28·64	....
N.N.W.	4	28·97	29·39	28·63	0·76
N.W. by N.	12	28·50	29·95	28·62	1·33
N.W.	4	29·24	29·95	28·64	1·31
N.W. by W.	7	29·41	29·78	28·66	1·12
W. N.W.	25	29·02	29·87	28·56	1·31
W. by N.	14	29·14	29·76	28·62	1·14
West	11	29·13	29·78	28·63	1·15
W. by S.	19	29·07	29·45	28·62	0·83
W. S.W.	12	29·36	29·79	28·70	1·99
S.W. by W.	21	29·54	29·90	29·04	0·86
S.W.	9	29·56	29·80	29·17	0·63
S.W. by S.	1	29·85	29·85	29·85	....
S. S.W.	3	29·64	29·72	29·49	0·23
S. by W.	1	29·30	29·30	29·30	....
Calms	3	29·14	29·91	28·72	1·19

The barometer never gave less than four hours' notice before a change took place, and in general more. The rise and fall of the mercury was not so great as in a lower latitude, but sufficient to put a

person on his guard. The thermometer was broken, and the barometer also shared the same fate, or the remarks on it should have been continued.

Cape Horn, at the distance we passed it, (12 leagues,) had a bold high appearance, at its south western part. The N.E. part of the island is very low in comparison to its S.W. end; we could just discern Cape Engano, and the Great Hermit, the latter completely covered with snow.

The large island of Diego Ramirez, is high; we saw this group when five leagues from them, (although the weather was dark and hazy.) When near to the group, a number of small islets show themselves, scattered round the larger islands; they have a very rugged and broken appearance, with no vegetation on them, that we could see; our nearest approach to them was eight miles.

November 2nd, in lat. 44° 10' S. long. 80° 30' W., we spoke the bark Ann, of London. Her boats were out after whales: we saw a great number, but they were chiefly of the hump-backed species. We had not seen a whale, or indeed any fish, when to the southward, even in the straits of Le Maire. The Ann had been five weeks in getting round the Horn, and experienced the same weather nearly as ourselves in coming round, but had fallen in with several large islands of ice.

LIGHT VESSELS AT PORT JACKSON, NEW SOUTH WALES.

IN our December number we informed our readers of the establishment of a light vessel on the Sow and Pigs shoal in Port Jackson. The following is a more perfect statement concerning it, although the former sufficiently answered the purpose which we intended; namely, of apprising seamen of its having been placed there.

Harbour Master's Office, Sydney, 22nd August, 1836.

Notice is hereby given, that a floating light is now placed near the rocks called the Sow and Pigs, within the heads of Port Jackson. It is moored in twenty-two feet (low water spring tide) at the distance of one hundred and ninety yards N.W. (by compass) from the beacon on the dry part of the Sow and Pigs shoal, and at about sixty yards outside of a rock detached from the shoal, in the direction of the beacon, over which there is only seven feet water, and will exhibit two lights placed one over the other.

Directions for entering.

With a Southerly Wind.—Being at half or three quarters of a mile from the shore under the light house, steer N.W. until the light vessel is seen over the extremity of the inner south head, then haul up to W.N.W. until it bears S.W. which will lead clear of the inner south head; haul to the wind, keeping the light vessel on the larboard bow, pass her on the larboard hand, and in turning to windward between the shoal and the land, come no nearer the former than to bring the flat roofed house (being the third to the right or to the westward of the windmills) in sight over the bluff of Point Bradley. When the light house bears S.E. by E. $\frac{1}{2}$ E. a ship is to the southward of the shoal. Another mark for having passed the shoal is, the rock called

the " Bottle and Glass," under a conspicuous road on the hill. By night, the mark for turning up the channel, between the Sow and Pigs and the shore, is to keep the light vessel to the east of N.E. $\frac{1}{2}$ N. ; but on approaching George's Head, vessels should stand no nearer the three fathom knowl than to get the light to bear N.E. until the light house bears S.E. by E. $\frac{3}{4}$ E.

The least water on the knowl is sixteen feet at low water.

With a fair Wind.—Enter as before directed, pass the light vessel as close as convenient, and steer towards George's head until the westernmost windmill is over the bluff of Bradley Point. This mark will lead over the deepest channel. In entering by night, after passing the light vessel, steer S.W. $\frac{1}{2}$ W. until beyond the line of bearing, between the light house and George's Head, or until the former bears S.E. by E. $\frac{3}{4}$ E.

JOHN NICHOLSON, Harbour Master.

PHENOMENA AT SEA.

To the Editor of the Nautical Magazine.

DEAR SIR,—Should you consider the following worth noticing in your Journal, for the use of scientific gentlemen, I think it may produce some little speculation as to the cause of it.

On Saturday 11th Feb. 1837, at 4 P.M., in lat. $4^{\circ} 20' N.$ and $23^{\circ} 20' W.$, we had a very heavy squall from the S.E. accompanied with heavy rains, which gradually cleared away towards sunset and the wind veered to E.S.E. Towards midnight it became settled weather, the wind continuing to veer east-northerly. On the next morning (the 12th,) we had the regular N.E. trades, but they were not strong, the weather became very hazy, something resembling a fog, which increased all day, and at noon the horizon was scarcely visible. The sky above our heads was overcast with an upper stratum of clouds passing rapidly from the S.W. On Monday, 13th, the haze so much increased at noon that the horizon could not be distinguished, and the upper stratum of clouds was more dense than the day before. On examining the sails, I found them all covered with red dust resembling that from red bricks, such as the streets of Calcutta produce so much of in the dry blowing season. Where the canvass was new, or had been repaired with Bengal canvass, which has a rough surface, the dust was more plentiful ; all the ropes likewise, exposed to the action of the wind, were covered in the same way ; even the masts were marked with it. The 14th continued the same, the sun being still more obscured than before, the upper stratum of clouds still from the S.W. On the 15th the haze at day light cleared away considerably. We had now reached the 8th degree of north latitude in $27^{\circ} 20' W.$; at noon the horizon was quite distinct, and at sunset the haze had entirely cleared away, the upper stratum of clouds coming more from the west. The nearest land during these four days, was the western coast of Africa, distant about 600 miles. I have noted this for public enquiry, not having seen any notice of it hitherto. I observed the same phenomenon last year in nearly the same situation, but not to the same extent, and

nearly two months later. Query, Can this be produced by the tornados on the coast? perhaps some of your readers will favour us with their opinions. In Laurie's Memoir, accompanying the chart of the North Atlantic, Captain Andrew Livingston gives a description of what he thinks must have been a bank to the S.W. of the Azores. I have crossed that spot twice since I saw that notice, but could see no discolouration of the water, or other signs of sounding. On my voyage out to India, in 1833, I passed over such a spot as he describes, near the Cape de Verd Islands, from lat. $19^{\circ} 46'$ to $19^{\circ} 33'$ N. and long. $24^{\circ} 27'$ to $24^{\circ} 36'$ W., but in looking over the stern in the ship's wake I could perceive it was only a partial discolouration on the surface, caused probably by some species of animalculæ, and I have seen the same phenomena several times in the Indian Ocean, and even this voyage when St. Helena was in sight at 8 P.M., two large patches appeared ahead, and when the ship passed through them they turned out to be shoals of mackerel. I have no doubt but many of the shoals marked out on the charts a great distance from land, have been something of the same kind, or parts of wreck, which will give a phosphorescent appearance in the night time, when covered with the tube shell that we see adhere to ships' sides on a long passage. None of these, nor the Devil's rock, so often said to have been seen, have ever been so minutely examined as to show soundings near them, and their assigned position is directly in the way of vessels bound towards India and the West Indies, and even home from the Southern Ocean, that it is scarcely possible they could remain to this date without being ascertained beyond a doubt. I should place the Eight Stones in the same light. I am &c., &c.,

At Sea, 17th Feb. 1837.

JOHN BURNETT.

[Captain Burnett's remarks are interesting as well as useful. With respect to the Devil's rock, the position of which renders it most dangerous to vessels crossing the Bay of Biscay, we caution seamen to beware of it, as there is not a doubt of its existence.—ED. N. M.]

COMMANDER MORGAN, ON MORGAN'S WHEELS.

To the Editor of the Nautical Magazine.

SIR,—In Hiram's last attack upon me, dated 23rd of August last, and contained in the 57th number of the Nautical Magazine, he states that he knows that the discussion between us has "obtained notice in the right quarter;" and you express your desire, in a note appended to his letter, that the truth may be elicited, and the "public good" thereby secured.

I trust, therefore, that you will allow me once more to trespass on your pages, with a brief recapitulation of the main points in dispute; and I shall then leave the controversy in the hands of such of your readers, as will take the trouble dispassionately to examine Hiram's three letters of aggression, and my replies thereto.

I will, however, first dispose of one or two new assertions on which Hiram has ventured, and in making which, he appears to be in as great ignorance of real facts, as I have already shewn him to have been on former occasions.

Of all his new assertions, there is only one which has any foundation whatever; namely, that which relates to the Pluto.—True it is, that while this vessel was proceeding from England to Malta, on her voyage to Trebisonde, it was discovered that the main centre, or nave of one of her wheels had cracked, (a circumstance which has happened with the common wheel,) and that the bearings and bushes had worn rapidly.

If Hiram had been as diligent in enquiring into the real causes of failures, as he is in numerating, or, as we shall presently see, in sometimes imagining, the failures themselves, he would have discovered that the defects in the case of the Pluto, arose entirely from injudicious attempts at improvement on the wheels, as previously made by my brother.

These attempts, consisted in an alteration of the form and proportions of the main centres, which were thereby too much weakened, and in the substitution of chilled cast metal, in the bearings and bushes, for case hardened steel, of which, they therefore had been, and now again are made. I shall not enter into further detail on this matter, as the attempts proving unsuccessful, have been abandoned, and therefore cannot interest the public.

I have just said, that Hiram imagines failures; in proof of my assertion, I refer to vol. v., p. 682, where he has the hardihood, to write "The Tartarus started in Sept. 1834; came home, and had a *new pair of wheels* in January, 1836!"—The italics and note of admiration are Hiram's, not mine!

Now, Sir, this statement is not true.—The Tartarus returned to Woolwich for the purpose, I believe, of general repair, and certainly had the steel bushes of her wheels replaced, in January, 1836, by others, of chilled cast metal, which it had not yet been discovered was less enduring, when exposed to the action of sea water, than either case hardened iron, or steel. But the original wheels, with this alteration, were refixed to the vessel, and she has them on her now.

Anonymous writers, trusting to their incognito, are very apt to imitate a larger class of mankind, of whom the poet has said, that

"—— rush in where angel's fear to tread."

I have abstained from quoting the whole line, for I think Hiram is no fool;—and yet I cannot but hope, that in this instance, at least, he has been imposed on.

For to be serious; is it decent, is it decorous, Sir, either as regards yourself or the public, to make the pages of your widely circulating Magazine, a vehicle for the diffusion of gross mis-statements, such as this, which I have just laid bare?

The next attack, to which I shall advert, is in the safer shape of an insinuation. It is contained in a short passage immediately preceding the above mis-statement: "The Blazer is laid up to have her power increased; the wheels are removed, in what state I know not."

Hiram knew, that *too many* positive assertions would be startling in the "right quarter," where their incorrectness would be known, though *one* perchance might escape.

It so happens that I can relieve his mind on the subject of the Blazer, by telling him, that the wheels were removed, not from being

defective or "miserably inefficient," as he would insinuate, but because her engines, a pair of fifty-horse power were to be replaced by a pair of *sixty-horse power*; and when the vessel returned from the Mediterranean for that purpose, the official report was, that the wheels were in *perfectly good order*. And as to their efficiency, I have but to refer to the report made respecting them, by the commander of the vessel, than which, nothing can be more satisfactory

I turn, now, to the recapitulation, and shall take the points in the order of their dates, as Hiram has, either purposely or accidentally, so mixed up different subjects, that I cannot follow him.

My brother's wheels were fitted to such of H. M. steam vessels, as Hiram has thought fit to select for his purpose, in the following order: *Confiance*, *Flamer*, *Columbia*, *Pluto*.

First then *Confiance*.—It will be recollected that Hiram stated, (vol. iv. p. 663,) that a diagram, which he had given in a former number, (vol. iv. p. 292,) of the path of Morgan's wheel as "from actual experiments," was, "a diagram of the *Confiance's*, in its improved state; that wheel which cost, when perfect, (will it be believed?) £3,891!"

To this I replied, (vol. v. p. 407,) that I happened to know that the cost of those wheels had not exceeded one-third of the sum he named, and, (at p. 409,) that I suppose I must pass by his diagrams, or be again accused of "taking an unfair advantage of a hand sketch," (vol. iv. p. 664.)

Hiram now produces an affidavit of Mr. Samuel Seaward, as to the cost, (vol. v. p. 679); and also (p. 682,) "*defies*" me to prove that his diagrams are "incorrect, i. e. either that of the *Confiance* as in 1830, (p. 293,) or of the *Pluto*," (p. 670,) adding, "the former was sketched by me from the vessel in December, 1830, and if that was not the *improved wheel*, perhaps he will tell us *how many she has had*."

Now, Sir, Mr. Seaward's affidavit sets the matter at rest as to cost, for, at p. 679, vol. v. we see the following words:

"1834, up to June, repairs and removal of the wheels, £1,256."

These, Sir, were the only "improved wheels" the *Confiance* ever had, and their cost was £1,256, or less than one third of £3,891. How the word repairs found its way into this line I know not. A counter affidavit was made by my brother, in which he stated the real facts; which were, that the cost of the first set of wheels was £1,750, exclusive of the expense of lengthening the crank shafts, and refitting the crank shaft carriages, &c., making altogether, the amount stated by Mr. Seaward's first item, £1,857. This affidavit was not filed, because my brother's counsel treated this whole matter, merely as one of the fringes of the case, which could not bear upon its merits. Moreover, my brother went to the Court of Chancery, not to advertise the prices of his wheels, but to seek protection against an infringement of his rights, and obtained it, as far as the practise of the court allowed, in the shape of an order, for an account to be kept by the defendants, Messrs. Seaward & Co., and empowering him to inspect their works from time to time.

As regards, however, the expense and repair of the first set, it should be borne in mind, that, in all new inventions, the first experiments are necessarily more expensive, and less perfect, than the subsequent productions. I will now tell Hiram "*how many sets*," the

Confiance has had; that is, how many my brother has been paid for. *Just two*, and in order to account for the necessity of improving on the wheels originally fitted to the Confiance, and paid for by the government, I must put your readers in possession of some facts, which possibly were known to Hiram, when he made his statement, or which he at any rate ought to have made himself acquainted with, before he attacked the property of another person; for they were facts within his reach.*

The wheels which were eventually fitted to her in the summer of 1830, and which, after a lengthened trial, were paid for in 1831, were constructed in conformity with an Admiralty order, in such a manner as to fit paddle boxes made for the common wheel, in order that, in the event of their failure, the vessel might suffer the least possible detention.

This mode of construction involved a departure from that form, or arrangement, which my brother had recommended, and which he has followed in subsequent wheels; and when, in 1834, the vessel returned to Woolwich, for the purpose of undergoing a general repair and re-fit, her officers and engineers made a representation to the Admiralty of the great detriment to her behaviour in a sea way, which resulted from the great width of these very paddle boxes, and from her rolling their outward framing into the water. Orders were therefore given, that her wheels should be replaced by a set which would obviate the faults complained of, and the paddle boxes were accordingly altered to meet my brother's view, and a set of wheels, considerably narrower than the first, were fitted to the vessel; for which, as I have already said, the sum of £1,256, and *no more*, was the price charged.

Having thus disposed of the question of cost, I come to Hiram's defiance. He "*defies*" me to prove that his diagrams are incorrect. I accept his challenge, and I pledge myself to prove that of the Confiance to be incorrect, from the facts, as well as from the diagram itself.

I have just shewn that the "improved wheels," to which Hiram alludes in his letters of the 12th August, 1835, p. 663, were not fitted to the Confiance till the summer of 1834.—How then, could a diagram of the path of a wheel sketched in 1830, be, as asserted, a correct diagram of the "improved wheel" of the Confiance?

This diagram, if not intended merely to mislead, must have been intended to shew the several positions which any one of the floats takes in one revolution of the wheel, at assumed velocities of wheel and vessel; and it is evident that the float as well as the lever by the instrumentality of which it is made to vibrate, must continue of the same length in every part of the curves described by them. It follows therefore, either that they must be incorrectly placed, or, the curves incorrectly given.

Next as to the Pluto.—A very cursory inspection of this diagram

* I have carefully distinguished between the number of sets she has *had*, and the number *paid for*; because the first wheel made for her, being too small, and the second set having proved defective in workmanship, were neither of them paid for by the government: the Admiralty, (who thought highly of the invention,) merely allowing him the use of the vessel, that he might conduct his experiments at his own expense.

(vol. iv. p. 671) will suffice to show the injudiciousness of the *defiance*. It will be seen, Sir, that the ascending float which is just leaving the water on the *left* of the diagram is made to be vertical, its point only being immersed, whilst the other floats *in* the water, are nearly parallel to each other. On the *right*, however, of the diagram, there are *two* floats, (in place of *one* as at the left) *partially* immersed; these two are nearly parallel to each other, as well as to all the other immersed floats except the bottom float, which is vertical.

All this is obviously incorrect; since the merit of my brother's wheel is, that whatever its diameter may be, any practically useful angle of immersion and delivery in *opposite* and *contrary* directions can be obtained with it, thus marking its essential difference from Mr. Buchanan's wheel, which still seems to have a strong hold on Hiram's imagination.

In these cases Hiram cannot now take refuge behind the inaccuracies of "hand sketches," since he maintains their accuracy after publication, with the prints before him.

I cannot be expected to know what Hiram may have in his cabinet. My task is to deal with that which he has given to the world, and to prove that it is incorrect. In order, however, that Hiram, or rather your readers, may be convinced that it is not so very difficult to make correct "hand sketches," I enclose a diagram of the path of a float of both the common wheel and my brother's wheel fitted to the Pluto, from which the superiority of the new over the old wheel will be manifest to any intelligent observer. But a correct diagram would not have answered Hiram's purpose. To acknowledge its incorrectness now would be equally fatal, and so he has recourse to defiance. I have answered him, and I trust redeemed my pledge.

We now come to the Flamer.—A comparison had been instituted between this vessel and the Soho, and Hiram now pledges his correctness, (vol. v. p. 680) as to the Flamer's displacement being at eleven feet drft. of water 467 tons, and not 635 tons as stated by me.

If, Sir, I had been in error, it would have been more my misfortune than my fault, since I did endeavour to obtain the most correct information by applying for it at the fountain head. I enclose you the reply which I received to my application, stating the displacement to be what I asserted it, namely, at eleven feet drft. 635 tons,* and from another letter from the same quarter, and which I likewise enclose, you will see that her launching displacement was 300 tons. Nor can there be any but the most trivial error in the calculation; for I find, on referring to Mr. John Edye's able work on the "Equipment and Displacement of Vessels," &c., that the mere hull of an eighteen-gun corvette, measuring 456 tons, weighs 282 tons nearly; and although the corvette is about four feet broader, she is nearly fifty feet shorter than the Flamer.

Let us now enquire into the Soho's displacement, stated by Hiram to be, (vol. iv. p. 666,) *when light*, 641 tons.

To ascertain her launching displacement I will compare it with that of H. M. steamers Firefly and Spitfire, by giving, after his own example, the dimensions of the respective vessels.

* I beg leave to correct a typographical error, at p. 411, vol. v. where "567 tons" is inserted instead of "467 tons."

Vessels.	Length.		Keel for tonnage.		Breadth.		Burthen in tons.
	ft.	in.	ft.	in.	ft.	in.	
Soho, according to Hiram	151	.. 3			27	.. -	510 ¹⁸ ₉₄
Firefly and Spitfire, from their constructor	155	.. -	138	.. 9½	27	.. 6	550

I have ascertained the launching displacement of the Firefly and the Spitfire to be 320 tons, and this will surely be a liberal allowance for that of the Soho, (which, upon a reference to the dimensions, will be found to be the smallest of the three,) even supposing her to be built upon as heavy a scantling, and to be as heavily rigged, as the king's steamers usually are.

Launching displacement,	320 tons.
Engines for 120 horse-power, the same as the Flamer, } and by the same eminent makers, &c., }	130 "
Masts, Yards, Anchors, &c.,	30 "
Provisions and water for a trip to Edinburgh, crew } and effects, about }	8 "
Coals for the voyage,	50 "
<hr/>	
Displacement,	538 "
Wanting only!	103 "

To make up Hiram's, *when light*, 641 "

So much for Hiram's figures. But we are told (vol. iv. p. 295) "she was ready for the voyage with stores on board," and she is there compared with the Flamer, which was, (in no quibbling sense such as Hiram's) actually ready for the voyage, that is, *laden*.

We are next told (vol. iv. p. 666) that she had a displacement of 641 tons, "*was light*, and her wheel had not a sufficient hold in the water, consequently insufficient resistance was obtained for the power of the engine, and the throttle-valves were obliged to be shut, to restrain it within bounds." And now we are again told, (vol. v. p. 680,) "Soho had, as stated, her *stores* on board, though not her cargo; she was also ready for sea, had it been required"—evidently quibbling on the words "ready for sea," and "ready for the voyage." Now which of these statements are we to believe? Will any reasonable man be persuaded that a vessel of the size of the Soho could displace 641 tons, if she was *so light that her wheels had not a sufficient hold in the water?*

I cannot quit the Soho without drawing the attention of your readers to another instance of Hiram's pertinacity in error.

It will be found that I stated, (vol. iv. p. 473,) that my brother had been applied to in the spring of 1835, to fit wheels on his system to the Soho, and would have done so had not the removal of the paddle-beams become necessary, and extreme difficulty of placing them, without sacrificing berth-places, arisen.

Hiram insinuated (vol. iv. p. 667) that they were not rejected from the causes stated; and after asserting that the removal of the fore-beam would not injure one berth-place, said, "No, no, perhaps the cause might have been the enormous price, I have reason to know,

£1,600, or thereabouts," and he still persists (vol. v. p. 679) that "it was the price which caused the directors to feel they could not be justified in expending so much money on a thing of such questionable efficiency:"—and this too he writes without any acknowledgment of an error of which he must have been aware, since he has produced to you my brother's letter which bears out my contradiction of his pretended price of £1,600, and proves that the price demanded was, as I said, many hundred pounds less than he asserted it to be, namely, £1,100, instead of £1,600, a difference of *only* £500!! As to the reason why the wheels were not fitted to the vessel, I enclose for your perusal a letter addressed by the company to my brother, from the P.S., to which you will see that it *was* owing to the expenses of the "alterations required" that the tender for the Soho was not accepted, and that the company wished very much to adopt the wheels in their next new vessel. But I may here state, for the information of some of your readers, that this company did not build another vessel, before it was dissolved. Whilst on this subject, I beg leave to call the attention of your readers to another typographical error which has crept into your pages. In the note (vol. v. p. 407) "It is not" is substituted for "Is it not," &c., whereby the sense is altogether obscured.

The Columbia.—Hiram asserted (vol. iv. p. 669) with respect to her comparative trial with her old and new wheels, that her mean speed, when fitted with my brother's wheels, and at a mean drft. of 11ft. 10½in. was no more than 7·50 miles per hour, that she was started about the year 1825! and that it was unfair to compare the state of knowledge then with it now; adding, "we have materially improved the application of the common wheel since that time." He now admits that he knows the official accounts bear out my statement, and contradict his own. But he chooses to disbelieve the official returns, adding a perfectly gratuitous insinuation of want of capacity amongst those who hold civil offices under government.

Now, when he chose to repudiate the official returns, which stated a gain of one mile per hour with the new wheels over the speed which, at the self-same immersion, she had obtained with twenty horses' more power and the common wheel, ought he not, in common candour, to have assigned his reasons, if he could not give up his authority? Had he done either the one or the other, he might have raised some doubt; but it will be clear, from the precise information that I have furnished, and from an inspection of his own figures, (vol. iv. p. 669,) that he has confounded the times with the speed, for he tells us—"Velocity obtained was,

	Miles.	Miles.
" Against tide, with wind	9·50	} 7·50."
With tide, against wind	5·50	

Could any one but Hiram have represented a steamer as going *against the tide faster than with it*?

In further proof that the official returns have not overrated the velocity which the vessel acquired in smooth water, I enclose a letter from the officer who originally commanded the Columbia, and who commanded her both when she had her old wheels and her new ones, fitted in the spring of 1833, stating her average rate, with the new

wheels, to be from seven knots to seven four-eighths, (equal to eight, and eight and a half statute miles,) which, he adds, "is what I could not do with the old paddle-wheel." And it must be borne in mind that the old wheels were impelled by one-fifth more power than was exerted with the new wheels.

This will, I trust, be a sufficient answer to Hiram's pretending to prove her mechanical performance "very, very bad," (vol. iv. p. 669.)

Again, sir, if it is to be considered unfair to criticise a piece of machinery, which, even in 1825, Hiram's assumed date, had been in use for so many years as the old wheel then had been, how much more unjust is it to attempt to run down an invention which may be said to be yet only in its infancy? and, for his criticism and condemnation, he selected the very first pair made, namely, the *Confiance's*.

But Hiram is certainly very unfortunate, whenever he has to deal with figures, for any purpose whatever; for the *Columbia*, so far from being started, as he asserted, (vol. iv. p. 669,) "about 1825," was not launched from the king's dockyard at Woolwich until the 1st July, 1829, and was tried for the first time (and then only in the shell, to prove her engines) on or about the 27th January, 1830.

I was about to say, too, that Hiram had been very unfortunate in his selection of the *Columbia* at all for his attacks, since she had afforded so decisive a proof of the superiority of the new system over the old, as was evinced by her doing so much more with a pair of fifties, and the new wheels, than she could do before, at the same immersion, with a pair of sixties, and the old wheels. But I should have been very wrong; for he would have been equally unfortunate, if, instead of the *Columbia*, he had selected any of those vessels to which my brother's wheels have been applied, and which, or sister-vessels to which, had previously had the common wheel.

For instance, the *Confiance*, *Echo*, and *Carron*, were sister-vessels, each fitted with two 50^s, and both the two former, with the old wheel, had always been faster than the *Carron*; but the *Confiance* having had the new wheels fitted to her, became a faster vessel than the *Echo*: as for poor *Carron*, she had no chance with her.

The *Flamer*, with two 60^s, and the new wheels, was faster than her sister-vessel the *Firebrand*, with two 70^s, and the old wheel.

The *Spitfire*, too, a sister-vessel to the *Firefly*, was faster with two 70^s and the new wheels, than the *Firefly*, with engines of the same power, and by the same makers, and the old wheel.

The *Firebrand* herself affords a remarkable instance, as the following table will shew:—

WHEELS.	Horses' Power.	Length of Stroke.	Number of Revolutions.	Immersed Area.	Mean Draught.	Mean Speed.
Old Wheels	{ 140 H.P. But- terly & Co. }	ft. in.		ft.	ft. in.	
		4 3	24	187	10 6	10·12
Morgan's ..	120 H.P. Maudslay	4 0	28	187, and a fraction	10 6½	10·55

It will not fail to be observed from the table, that, in the trial with the old wheels, nearly the full power was exerted, and the float was in a

most advantageous position; whereas, on the other hand, in the trial with the new wheels, the power was not exerted as fully as it might have been in engines, which, like these, work their steam expansively; they consequently were overrunning their velocity, and the throttle-valves were partially closed. This arose from the vessel drawing less water than was anticipated.

We now come to the last point in dispute, namely, the mechanical performance of the Pluto.

Hiram has all along been very sore at my having proved the incorrectness of his figures in so many instances, and, by way of a set-off, is charitable enough to suppose (vol. v. p. 681) that I was not acquainted with the rule there given by him for finding the *required power*.

I was aware that such a rule, amongst others, had been laid down by some writers on mechanics; but I had nothing to do with any of them, for I knew by a sure mode of calculation (see vol. v. p. 408) what the power exerted really was.

If I were now to adopt Hiram's "rule of thumb," which I venture so to call, because I have not seen it popularly or clearly explained by any writer; (although it is so eagerly adopted by Hiram as suiting his purpose;) and if I were to assume, as the basis of my calculation, that the power required to drive a body through a fluid is as the cube of the velocities, I should have the following figures:—

$$\begin{aligned} 10 \cdot 05^3 \times 129 &= 130944 \cdot 691125 \\ \text{and } 9 \cdot 035^3 \times 166 \cdot 66 &= 122918 \cdot 102725 \end{aligned}$$

Now, by dividing these products by the power actually exerted in each instance, in order to ascertain the performance per nominal horse-power, I obtain

$$\begin{aligned} \frac{130944}{100} &= 1309 \text{ nearly; not } 1290, \text{ as Hiram states by another mistake against himself.} \\ \text{and } \frac{122918}{81 \cdot 48} &= 1508 \text{ nearly;} \end{aligned}$$

which is a result far more favourable than I have ever claimed before.

I certainly did not for one single moment contemplate that any dispute as to the quantum of power exerted in the two instances could arise.

From the oracular style of my opponent, I concluded that he must have been aware, that, in the former instance, namely, when the old wheels were tried, the engines ran to the speed of twenty-seven revolutions, and the vacuum was twenty-seven inches and a half, and that, in the latter, when the new wheels were tried, the engines ran to the speed of only twenty-two revolutions, and the vacuum shewn by the same barometer was only twenty-six and a half. I was therefore far from anticipating any objection on his part to what he courteously terms my "rule of thumb," and to my having omitted to notice the "actual pressure" on the piston as a co-efficient, since, had I taken it into the account, the difference would have been still greater in my favour. For, so far from the vacuum having been improved (as Hiram would now have your readers believe it was) on the trial with the new wheels, (vol. v. p. 681,) I have just shewn that it was impaired; and, as I had to deal with facts, which must have been known to Hiram when he gave the experiment, (vol. iv. p. 671,) I felt myself justified in taking

the power to have been, *at the least*, in the proportion of the velocity of the piston in each case.

I may here shortly state, that a piston with a three feet six inch stroke is calculated to travel at the rate of about $192\frac{1}{2}$ perches per minute, or, that twenty-seven revolutions of the crank is generally allowed to approach very nearly to the greatest useful velocity which can be practically obtained in such engines as these now under consideration. I therefore laid my calculations before your readers in the simple form of *resistances overcome*.

But if the rule given by Mr. Robert Wallace, M.A., of Blythswood Hill, Mathematical Academy, Glasgow, in his "Practical Mechanic's Pocket Guide," at page 22, art. 29, be correct, I am afraid both Hiram and myself must plead guilty to following "rules of thumb," and must be content to go to school again.

Mr. Wallace says, "When the velocity is given in miles, per hour, the rule is—multiply the area of the surface in feet by the square of the velocity, and double the product, increased by one-twentieth part, will be the force required in pounds nearly."

Now, as I, though not very learned in these matters, know, that which it would seem Hiram does not, namely, that when a body in a resisting medium moves with a uniform velocity, it can only be in consequence of a force uniformly acting on it, exactly equal to the resistance, I must admit my calculations to be as erroneous as Hiram's; and if Mr. Wallace's rule be correct, the resistances overcome will be represented as follows:—

$$2 \left(129 \times 10 \cdot 05^2 + \frac{129 \times 10 \cdot 05^2}{20} \right) = 27361 \cdot 57725,$$

$$2 \left(166 \cdot 66 \times 9 \cdot 035 + \frac{166 \cdot 66 \times 9 \cdot 035^2}{20} \right) = 28569 \cdot 78591285;$$

and subjecting these results to the same test as before, we shall have

$$\frac{27361 \cdot 57725}{100 \text{ H.P.}} = 273 \cdot 61577 \text{ perf. per horse-power,}$$

$$\frac{28569 \cdot 78591285}{81 \cdot 48} = 350 \cdot 635565 \text{ perf. per horse-power.}$$

Thus, by whatever rule tried, the performance per horse-power, with my brother's wheels, is proved to be superior to that with the old wheels.

I regret to be under the necessity of intruding so largely on your valuable space. But so it is, one single line of an unscrupulous and groundless attack may require a page to refute it. This is my only apology for the length of my letter generally, and of this part in particular.

If we now examine the various results, and the circumstances under which the trials were made, we shall find that on the trial with the old wheel, the performance of each horse-power under the advantage of calm weather, good trim, the best possible position of the float, was, by Hiram's "rule of thumb," about 1309, (Hiram says 1290,) by my "rule of thumb" about 13029; by Mr. Wallace's rule 273.—Whilst on the trial with the new wheels, notwithstanding the disadvantage of strong S.W. winds, the *excessive* immersion of the floats, the vessel

being so much deeper, and swimming at worse lines, and being several inches out of trim by the head ; the performance was about 1508, 1364, and 350 respectively.

Hiram says, (page 681, vol. v.) "Mr. Barlow proves their (the new wheel) best effect at *deep* immersions." Be it so ; but there is a great difference between *deep* and *excessive* immersions.

Would the Pluto have obtained the speed of 10.05, or, even 9.035 miles per hour with the common wheel, if she had been 18½ inches more immersed, or in other words, at least 14 inches *over immersed*? I say *never* ; and I will only refer your readers to the joint letters of Lieut. Symonds, and Lieut. (now Commander) Otway, (vol. iv. p. 462) where they state, "Meteor, on first starting, with her wheels over-immersed, will only go five and six knots, according to weather, the second day will go six to seven, and then seven to eight as she got lighter ;" and this, in a vessel with engines of the same power and by the same eminent makers as the Pluto's ! and built by the same talented constructor.

But Hiram, either through ignorance of his subject, or trusting to the carelessness of your readers, when he ventures to deny that the difference, (in the power actually exerted I suppose he means,) was half so great as I have stated it to be, says, (vol. v. p. 681,) "But I waive this, for Mr. Morgan states, and is backed by Sir P. Malcolm, that his wheels give a power of sixty to a fifty-horse engine, or twenty per cent. this would make up the difference."

Why, Sir, this is the very point in dispute ; all that I contend for is, that the new wheels diminish the waste of power ; that is, increase the effective power actually exerted, and, therefore, if by the use of the new wheels, a difference of twenty per cent. be made up in the relative power of the engines employed, I ask no more ; and Hiram has proved my case.

As for his sweeping observations about the durability of my brother's wheels, when he says, (vol. v. p. 682,) "It appears their durability is about three years with one-third of their original cost laid out in repairs, in eighteen months after their starting ! few have equalled it, none exceeded it." I shall content myself, Sir, with giving you two out of many instances which I could advance by way of refutation. For I feel I have trespassed already too long.

The Lightning was employed on active service with these wheels during nearly three years, from the month of August 1833 ; during which period she has been several times across the Bay of Biscay, and in the most tempestuous weather, has been much in the North sea, and Irish channel ; and was broadside on the rocks on the Danish coast, when she beat off her false keel and part of her main keel. But in no one single instance did her wheels create any trouble or inconvenience, or require one sixpence to be expended on them in repair. They have now lately been repaired, at one-fifth of their original cost, and with a continuation of such care, as has hitherto been bestowed upon them, will no doubt last another three years.*

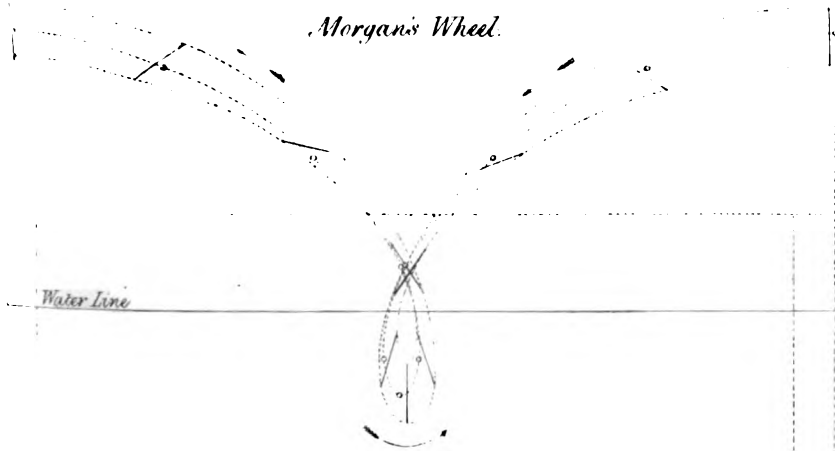
* I will here add an extract from the Naval and Military Gazette, of the 17th ult. p. 311 : "The Lightning is the only vessel that has been successful in getting to the westward since our last, the wind blowing strong from the W."—*Ports. Correspondent.*

And why ? she has Morgan's Wheel ; which their strongest opponents reluctantly admit as most effective in heavy weather.

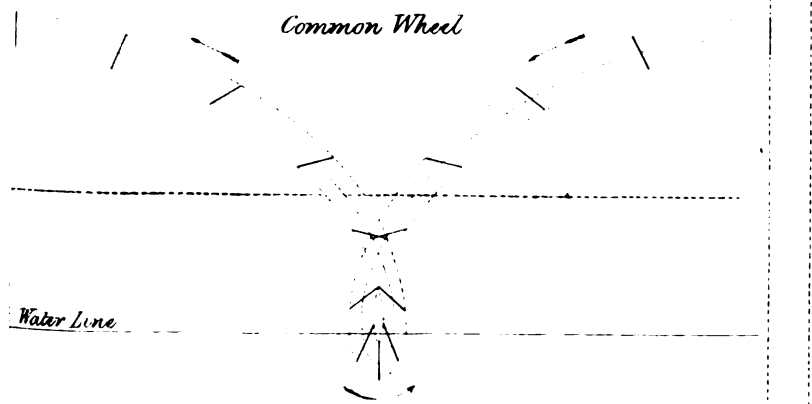
H.M.S.V. Pluto

Diagram of the performances of Morgan's Wheels and of the Old or Common Wheel during the several Mile Trials made of the Vessel's Speed the former on the 1st May 1835 and the latter on the 6th August 1831.

Morgan's Wheel.



Common Wheel.



Horizontal distance travelled by the Vessel in the Mile Trial in each revolution of the Common Wheel.

Horizontal distance travelled by the Vessel in the Mile Trial in each revolution of Morgan's Wheel.

	<i>N^o of rev^s minute</i>	<i>Vacuum</i>	<i>Midship Area</i>	<i>Speed of Vessel</i>
<i>Morgan's W.</i>	22	26½ in ^s	166 66 ft	9.65 miles
<i>Common W.</i>	27	28½	129	10.05

The Firebrand has been running nearly, if not quite, three years ; during which time the repairs of her wheels have amounted to £10 and a few shillings, if I except £36 of damage produced by her drifting against a dolphin, whilst being towed through the canal of Helveotsluys, when conveying to this country H. S. Highness the Duchess of Saxe Weimer.

So much for Hiram's unfounded and disingenuous observations, who, under the shelter of his incognito, assails all persons alike.—Witness his gratuitous insinuation, (vol v. p. 662,) against the *employers* under Government ; and lower down, against the employers themselves ; where he talks of some persons having been guilty of a shameful expenditure of the public money ;—witness too his attack on one of the directors of the late Edingburgh Company, (vol. v. p. 680.) His attacks may well, therefore, be disregarded by my brother, as his personalities are by me : nor should I have answered his last letter, but that I feared my silence might be misinterpreted. I have now brought my unpleasing task to a close ; I have exposed Hiram's perversion of facts, his perseverance in misstatements, and his blunders in calculations ; and I take my leave of him for ever.

I am, Mr. Editor,

Your obedient humble Servant,

RICHARD MORGAN, Commander, R.N.

Un. Service Club, 13th Jan., 1837.

TYPHOONS* OF THE CHINA SEA.

AN extract from the journal of an officer of his Majesty's ship Raleigh, giving an account of a *typhoon* experienced by that ship in the China Sea, and information from another source, admit of the following remarks being made. They will shew that the operation of the eastern storm is similar to that of the West Indies—a wind gyrating round a centre, from right to left—with this difference only, that in the first instance the tempest progresses to the south-west, and as it recedes from the land curves to the W. S. W. ; whereas the West India hurricane advances first to the north-west, and afterwards curves to the northward, and ultimately to the eastward.

It appears from the extract, that on the 4th August, 1835, at 7h. 30 m. P.M., the wind veered round to the N. N. E., when the typhoon commenced. At 8, typhoon increasing ; at 10, wind veering round to the E. N. E. ; midnight, typhoon increasing. 5th August, 3 A.M., wind veering round to the E. S. E. ; typhoon still increasing in violence. The barometer had fallen as low as 28° 20'. At 8, typhoon increasing. At 9h. 30 m. A.M. the ship was thrown on her broadside : in twenty minutes after, the masts went. At noon, the barometer ceased to fall ; at 6 P.M. more moderate.

From these concise, but clear observations, we find that the wind shifted *apparently* round from *left* to right, whilst it was pursuing a

* *Ty-foong*, a compound Chinese term, signifying a great wind.

Typhon, or *typhoon*, from the Greek τυφων.

Tuffoon, from the Persian *toofan*, a whirlwind or tempest.

contrary course. And the direction of the changes proves, that the typhoon was progressing to the south-west, which we consider the general course these storms follow near the land; for, had the advance been towards the north-west, as is the case with the western hurricanes, the wind would have veered to the north and north-west, and have appeared, as in reality it would have done, to shift from right to left. By tracing the successive changes of the wind with the assistance of a diagram, it will appear, that at the time the Raleigh was thrown into the perilous position described, at half-past nine of the forenoon, (or it may have been perhaps at the time, or little before, when she had the wind at east,) she had made her nearest approach towards the centre; at noon she had evidently passed it, and, by six in the evening, was drawing near the posterior verge, the wind lessening.

This practical illustration bears out the assumption in the notes on the West India hurricane, that there is always a maximum in the strength of the wind, and that this is experienced on the nearest approach of a ship to the centre of the circle of operations. These facts, too, clearly inform us that the only difference between the typhoon and the hurricane of the west, is in the direction of the course pursued by the meteors. It is very desirable, that in future statements of these violent tempests in any part of the world, the point whence the wind blows previous to the shift at the commencement of the storm be given, as also that where it settles after the storm lessens in violence, the successive changes, and the hours when these take place in the interval should likewise be carefully noted.

As the limit of alteration in the progressive course of the typhoon is at present undetermined, and it is quite uncertain, in fact we may say unknown, whether these storms, as they proceed, curve to the northward or west, it may be as well to state here, that the actual route of any particular typhoon in the position where encountered may be arrived at, after the wind has veered several points, by consulting the diagram, (the moveable circle,) as in the case of the Raleigh; and this with perfect confidence, as it is obvious, that from the peculiar mode of operation of the aerial current, (the changes, except near the centre,* being regular, and the wind preserving an unchanging direction under every point of the horizon,) consequently becomes an index to direct us to the path pursued by the storm.

With your permission, Mr. Editor, we will enlarge on the subject, not only as it is a very interesting fact in meteorology, but as being one also of importance in navigation; and, although unwilling to occupy your limited space with our own private feelings, yet we cannot resist this opportunity of expressing the satisfaction we derive from the consideration that it should be reserved for the *Nautical*, from a *clue* given in your pages by Mr. Redfield, at last to define the character of two of the mightiest perils which the seaman has been liable to encounter, hitherto without a particle of information from which his judgment could receive assistance, and his mind tranquillity. Experienced navigators in the China Sea, † from collected observa-

* The effect on the line of progression will be explained by and by.

† See Nav. Chron., vol. xxx. Horsburgh, Capper, &c.

tions, inform us that typhoons near the coast generally commence at N.W. or N. N. W., the wind veering very suddenly to north-east and east, from which quarter it often blows with inconceivable fury. From east the wind veers to the south-east, and to the southward of that point, when it abates in violence.

This is quite in consonance with the explanations already given of the West India hurricane—the reader bearing in mind that the route of the typhoon is to the south-west, instead of the north-west. The reason why the wind shifts suddenly to the north-east and east may be thus satisfactorily explained. If a ship experiences the first shift of wind from the north-west, it will be evident (by consulting the diagram) that she would be precisely on the anterior line of the progression; and if she lays to in that position, she must eventually approach very near to, if she did not fall into, the centre of rotation, or vortex, where the changes in the direction of the wind take place in rapid succession. Under these circumstances, the north-west wind would continue, without material wavering, until the centre approaches near to the ship's position, when it will shift suddenly to the north, and soon after to north-east and east; and with one of these she will experience the *crisis*, the wind being at its maximum strength, (a farther confirmation of remark on this head,) after which it will veer to the south-east, and perhaps southerly; but the intervals of change, as the posterior verge advances, will be lengthened. The inclination of the progression in this instance will be rather southerly of south-west; for if it were at all westerly of that point, a ship getting her first wind from north-west would subsequently experience the changes from west, south-west, and south.

The information goes on to state, that this rotatory motion does not always observe the same regular progress, especially at a considerable distance from the coast. In such cases, after commencing as before in the north-west quarter,* they frequently veer to the west and south-west, blowing very severely from thence; still veering southerly, they become moderate about the south-east quarter, as in the former case. Those who are *au fait* with the subject, will at once perceive, that in this latter instance the progression of the storm must be more to the westward, about W. S. W.; and by a reference to the diagram, (the moveable circle,) it will be seen that the *crisis*, or nearest approach of the centre must be arrived at when the wind becomes south-west, agreeable to observation, and which confirms once more our former remark. When the wind is felt from the south, and to the eastward of that point, the posterior verge will be drawing near, and of course the violence of the wind will gradually abate.

Thus, Mr. Editor, we trust that we have satisfactorily, by the present investigation, confirmed Mr. Redfield's theory, and the general correctness of our former observations on the West India hurricane, based on that gentleman's clue, as given in your fifth volume.

It only remains to be stated, that typhoons generally happen (as the hurricanes do) in the months of August, September, and October,

* This, as well as the former case, bears out our opinion in a former paper, that ships are most likely to fall under the anterior verge of these storms. All the instances we have investigated are agreeable to that opinion; but we by no means mean to say that this is invariable.

but that they have been known to take place sometimes in June and July; in this also agreeing with the storms of the Carribbean Sea.

We would cheerfully, Mr. Editor, "overhaul" the Bengalese and Mauritius hurricanes,* but we have not data sufficiently clear and explicit to warrant us in undertaking it at present. We may express a hope, however, that as the eastern trade has been thrown open, that there will be found sufficient love of science in the minds of some of the many commanders of ships who voyage in those seas, to induce them to make careful notes on the hurricanes experienced there, should they encounter them, in order that their mode of operation may be investigated for the benefit of navigation.

STORMY JACK.

PERMANENT DIFFERENCE OF LEVEL IN DIFFERENT PARTS OF THE OCEAN CONSIDERED.

THE subject of a permanent difference of level in different parts of the ocean, has occasionally attracted attention, but it does not appear to have received the close consideration that it deserves, otherwise we should not hear of opposite opinions being entertained upon it. In a commercial point of view, especially at the present time, when projects are forming upon a scale of such magnitude as to be really surprising, it may be considered well worthy of discussion. Any endeavour, therefore, that is made to place it in a clear light, will perhaps prove acceptable to those who may take an interest in the projects of canals from one sea to another; the practicability of which has been doubted, from what will probably turn out to have been a misconception. The subject, however, cannot fail of being attractive to professional readers, in as far as if it connected with the hydrography of the world, and relates to that mighty ocean, which is the familiar scene of their most active pursuits. It must by no means be considered, that the following statements are intended to decide the question, whether in reality there be, or be not, a permanent difference of level existing in any two parts of the sea; for although such an anomaly will not be strenuously supported here, the point at issue may be safely left for the decision of philosophers.

It is an axiom in hydrostatics, that the surface of a fluid becomes level by its own gravity when no external force prevents it being so.

Our first inquiry will be, to ascertain whether there are any principles in nature sufficiently powerful and unceasing in their action, so as to produce the effect of retaining any particular portion of the ocean on a *permanently* higher or lower level than any other part.

1st. Will a permanent current running into an inland sea, gulph, or other inlet, necessarily produce a higher level?

A permanent current setting into an inclosed sea, where there is but one strait of communication with the ocean, whatever may be the cause of the stream, is not likely to affect, permanently, the general plane of the surface; for, where the water pressed in, has no other opening to

* In our next number will be found the particulars of the late hurricane at the Mauritius.—Ed. N. M.

escape by, it will to a certainty return* under the surface-stratum in motion, the same way, of course, being the only one, it came in, whilst a portion escapes on either side of the main stream.

This fact may be proved by experiments and observations in any parts of the ocean, under the given circumstances, by any one who would be at the pains to investigate it. It has been verified in several instances where currents prevail, in the Baltic, the Strait of Gibraltar, the Estuary of La Plata, and the Mediterranean. From the nature of the fluid, it might not be going too far to state, that such is invariable wherever oceanic running water meets with abrupt resistance to its further course, a reaction immediately takes place, as well below as above the surface. If the super-current be permanent, the sub-reflow will likewise be so; for, as long as the globules of the fluid are reflected by any obstacle, the counter action must be continued. It is probably this admirable arrangement that prevents the overflowing of lands which have not a high sea margin; and it is in perfect accordance with the nature of the fluid, and the laws which govern its motions. How beautiful is the whole design, arrangement, and progressive increase of the coralline fabric of the great ocean, by which the vicissitudes attending the weather, and producing the most violent effects on the ocean's surface, are guarded against! And how perfectly does this counter action of the fluid neutralise the boisterous efforts of the uplifted and foaming surge, and save the incipient island from being washed away altogether from its resting place! Perhaps, to the reflecting mind, this proof would in itself appear of sufficient force to confirm the truth of what is here advanced, if other indisputable circumstances were wanting for its support.

2nd. Will a perennial wind produce the effect?

The only perpetual wind is that of the Torrid Zone, and even this ranges nine points from a steady course; (that is to say, in each hemisphere, to the extreme limit of the wind, four points from the cardinal.) The effect produced upon the surface-waters of the inter-tropical seas by this wind, seems to be inadequate to the production of a *permanent* elevation of the water in any inlet facing the east, above that of the ocean generally; as it is reasonable to believe that the principal law governing the fluid, is incessantly exerted for the prevention of such an anomaly. Popular opinions stick by us, in spite of reason and common sense; and though such opinions may be often refuted by a little careful observation and reflection, such is the perversity of our nature, from sheer indifference, want of activity in the mind, or other cause, both are neglected, and we remain with the error attached to us. This is observable every day, in matters, perhaps of little importance, but it is as well to get rid of it if we can. The commonly received opinion as to the amount of water thrown into an enclosed space of the ocean during high winds, is at variance with the truth. The idea, that when a storm is blowing up an inlet, and the waves are risen, that a vast accumulation of water must necessarily follow, is one founded on misconception. The proportion of fluent water (technically, the *drift*) pressed forward is comparatively trifling, when compared with the force

* This sentence, and others similar are so expressed for the sake of brevity: the identical water will not immediately be returned, but an equal portion from the inclosed sea.

of the wind, and the violent action of the waves themselves. From the *form* of the wave progressing at a rapid rate, we are impressed with the notion, that, volume after volume is thrown forward, and that such an accession must create a great accumulation at the head of the inlet; this, however, would be found on examination not to be the case; the *doubling* action alone of the wave propelling the particles forward, and the proportion thus driven in, as was observed before, is comparatively trifling, although the resistance offered to the fluid may create a very high surf, and the spray thrown to a considerable distance over the land.

Observant seamen are aware of all this; but there is still reason to think, from opinions which have been advanced, that there exists an erroneous impression as to the amount of water thrown into inlets by the action of the wind; and it is probable, that without knowing the depth of a current, we should be deceived in estimating the amount conveyed into any opening, by taking the velocity and width of the stream as a guide. The idea of a difference of level seems to have been entertained theoretically in the abstract, and the truth of it has no where been practically confirmed clear of all doubt. A single attempt at measuring a series of levels to ascertain the fact, although such may give a semblance of reality to the opinion, seems more than useless, because it is very likely to mislead and to perpetuate error. The finding a higher level of the sea on one side of an isthmus than the other, may appear conclusive to the operators; but to any person who will extend his thoughts on the subject, it would perhaps be anything but satisfactory, as the circumstances which gave rise to the elevation or depression on either side at one time may change, and so produce an opposite result upon another trial; besides other incidents difficult to overcome. The accuracy with which surveys can be made, is fully acknowledged and appreciated, as well also the nicety in striking levels; yet it is found expedient, and often necessary, to have a coast re-surveyed, without this implying any want of skill in the former surveyor; and we are not supposing that allowances are neglected to be made by the engineers, for contingencies that happen or may happen on either side; yet, it may reasonably be acknowledged, that with all attention to these, difficulties beset the operation.

It is assuredly not an easy matter, even when a lengthened stay has been made in the locality, and multiplied experiments adopted, to arrive at the true water-line level of the starting place, and that on the opposite side of the isthmus, an unavoidable error in this particular would of course upset the calculation. The incidental circumstances which are frequently occurring to interrupt the tidal action, more or less upon every coast, so as to alter the low water and high water marks, and which almost defy precision in the determining of the line that shall be regarded as the true one, will justify the above remarks. In some straits, such as those of Florida, Gibraltar, and Ore-sund, (or Baltic Sound, as it is usually called) for instance, at certain times when the currents are at their full bearing, risen convexly above their ordinary elevation and that of the annexed sea, the activity of nature is exemplified in preserving the general level, by the fact that the action of the stream in some straits, probably in all, where the current is strong as well as permanent, is increased with an opposing

wind. And when a lateral gale presses the water over the leeward side, as is sometimes the case in the narrow part, or strait of the Florida channel, the very low cays and sand banks become flooded, to the extent of about thirty feet; the in-shore or counter currents being turned into the passages between the islands, rush impetuously into the sea of Mexico; and the waters there spread abroad and are ultimately brought back to their parent stream by the Mississippi *set*.

Some writers on geography, entertained the opinion of the Mexican sea being on a higher level than the Atlantic; from the supposition, that the water of the Carribean sea was pressed into it by the constancy of the trade wind. It would occupy too much space here to argue the point, but those who will be at the pains to investigate the case in all its bearings, and not allow themselves to be caught by the mere abstract theory of the matter, may perhaps, become satisfied that the most apparent plausible reason that could be assigned for the opinion,—and the one upon which it is based, and to catch the unreflecting—is, the particular position occupied by the sea of Mexico, with reference to the direction of the perennial wind; which by-the-bye, does not bear that character therein. And, as to the supposed “gulph stream” revolving round that sea, (which the edifying analogy of water in a wash-hand bason, acquiring a rotary motion from the breath of the experimentalist gave rise to) such, if ever detected, has no *permanent* existence at this day. Currents there are, no doubt, as there are in other parts of the ocean’s surface; and, perhaps, the strongest and most constant is that induced by the Mississippi stream. The Mexican sea—about six hundred and fifty miles in diameter—affords ample room for an interchange of waters, without causing disarrangement of level; and if we bear in mind the laws of the fluid, we shall be warranted in concluding, that in this interchange, which is necessary for the preservation of the waters in an incorrupt state, nature regulates the movement in accordance with the harmony which reigns over all her works, so that the amount of supply thrown in at one point, shall not exceed the quantity capable of being discharged at another; combining also the consideration of evaporation, with the accessions from rivers, from rain, and from the melting of snows, which, however, may be included in the former.

3rd. Will a permanent current setting across the entrance of an inland sea, gulf, or other inlet, keep the water heaped up in it?

To imagine, because a permanent current is running, whether near or afar off, across the entrance of an inlet, that the water within will be dammed up so as to attain and preserve a higher level, would be to imagine a circumstance that cannot occur.

It does not even seem likely that any effect of a permanent nature could result from such an event, whilst the molecules retain their mobility, for even in the most profound calm their restlessness is apparent. Let the engineer who constructs embankments, or the Dutchman who has more experience in such matters, be asked, wherein consists his greatest anxiety, and what calls forth the fullest exercise of his ingenuity—and he will assuredly answer, to restrain the fluid from undermining or from percolating through the barrier. Would it not then be a fallacy to suppose that water would or could act as a barrier to water, so as to keep one portion heaped up permanently above the

other, when the most substantial substances, and those which are cohesive and stubborn in a great degree, cannot, without much art and skill be made to retain it, so powerful is the law which urges the fluid to attain its natural level. If it be asked "what is meant by the natural level of the water?" the answer is—"the lowest possible surface it can settle to." In tidal harbours, exposed to such a circumstance, great irregularities may take place, but nothing of a permanent nature; the superfluous water will be discharged although that discharge may be delayed by its having to pass *under* the current water. Observation has proved this; and it is not uncommon for the water in a river to be lifted bodily upwards, without the action of the flood-tide being perceptible, whilst the *fresh* of the stream is pushing on its turbulent course towards its final goal; observation again has proved this. It sometimes also happens where two rivers are so peculiarly situated relatively to each other, that the one shall, from deriving its supplies in a different direction from the other, though it be the lesser, by an overpowering *fresh*, so impede the gravitating impulse of the larger, as to flow *upwards* over its current, and is only subdued by the failure of its own energy. Observation has likewise verified this. All are extremely interesting examples of the pertinacity of the active principle of the fluid, which nothing short of the most skilfully applied artificial means can subdue; and although they may not be new to most readers, they are nevertheless, very curious, and may serve to bear out our inferences.

4th. Would the tidal operation, where land intervenes between seas, produce a permanently higher (although variable) level on one side, and a lower one on the other?

It would be injudicious, perhaps, to attempt to reason on this part of the question in the present state of our knowledge of the tides, as our information is imperfect; yet that the action of the tides is perhaps so regulated by natural laws is probably the timing of the reciprocations, as to prevent one portion of the sea from being permanently elevated above another. The isthmuses are not so numerous as to preclude the possibility of determining the point in a few years, if the matter were taken up spiritedly. If observers were to note carefully the times of high and low water at the following places for twelve months, we should become possessed of data sufficient to warrant us in drawing just conclusions as to the probability of such irregularity, happening from peculiarly combined circumstances in any other parts of the world:—

Suez, and Pelusium; Akaba, and El Arish, for the Mediterranean and Red Sea. Chagres, and Panama; Vera Cruz, and Tetwantipee; San Blas, and Tampico, for the Atlantic and Pacific. St. Augustine, and the opposite bay of Vacasausa, for the Atlantic and Mexican sea. Bay of Mines, Gulf of Fundy, and Bay Verte, Gulf of St. Lawrence, for those two arms of the Atlantic. Madras and Bombay for the Gulf of Bengal, and the Gulf of Sind.

With respect to the level of the ocean,* or perhaps it would be more properly expressed—the true plane of the convexity, and that corresponding to it on a coast, a few words may be said. It appears upon a due consideration of the point, that on a tidal coast, the line

* See Professor Whewell's *Queries*, N.M. Feb. p. 100. (No. 8 query.)

which is marked by the *lowest* tide that takes place at any period, is the *true level* corresponding with that of the ocean, for these reasons : that the *standard level* of the mid-ocean must be found at that period of time when a calm prevails, and at the interval when the tidal wave has passed the given space,—or in other words—when no external causes disturb its natural state of quiescence. If, therefore, these premises be just—and how can they well be disputed?—it will follow that, upon every coast where the tide reciprocates, the level to correspond with this standard, one of the ocean generally, must be precisely at the time of the utmost possible depression of the water occasioned by the cessation of external influential causes. As, however much the fluid may be risen, it never can be depressed below the standard level of the ocean ; for, as the particles press with equal forces on all sides when in a state of rest, it follows that that state cannot be arrived at until the external causes which act upon those particles with unequal pressure, cease ; and their entire cessation can only happen at dead-low-water whilst the air is calm. This may be called the true natural level of the ocean, but as causes are in constant operation on some part or other of its surface, to interrupt the continuance, it can occur only when and where the circumstances above stated are coincident ; on which account on any two coasts separated by an isthmus, where there are unequal and irregular tides, the obtaining that level would be attended with great difficulties ; and unless all the circumstances which happen on the coasts are watched with the greatest possible care before the measurement takes place, the result must prove unsatisfactory.

If we were to take the mean water-line between the highest spring and the lowest neap tides as the one corresponding to the standard level of the ocean, we should be in this dilemma—we should be applying a portion of the effect of external causes in the one case, without making any allowance for similar causes operating on the ocean's surface ; and though willing—unable—as not knowing the amount to be allowed, as the elevation is variable, from a few inches to twelve or thirteen at most.

The unequal rise of the tide wave, in the ocean and in localities along coasts, from an inch to seventy feet, does not affect the consideration of the general level, which in fact we must at last be content to estimate as a nominal plane,* as it is physically impossible, from the existing constitution of the world, that it can be continuous over the whole ocean's surface ; although it may be appreciable for the purpose required—the fixing a value on the line of any sea coast. To render this more intelligible, it will be admitted that the moon acts with a single force : that is to say, her attraction affects the *rise* only, to a certain amount, in any two opposite points on the earth's surface—the *ebb* or fall being the result simply of the gravity of the fluid. All, therefore, above the amount which the sun and moon are capable in conjunction of effecting, must be attributed to local and adventitious causes ; (which being well known need not to be enumerated here,) so

* It appears reasonable, and agreeable with common sense and the laws of fluids, to conceive that when water is in a state of rest, it will be at its natural level : and whilst external causes continue to destroy the equilibrium, this level is obliterated, therefore, as a standard it can be but nominal.

that *every where*, let the amount of rise be what it may, the line of the *lowest tide* will be found on the *same level*, although at intermediate tides the lines may be different.

It appears obvious that upon a continuous coast of an inlet, even where the successive rise of the tides is regular, there can be no proper *level* until dead-low-water, but rather an *inclined plane*, and it may follow that before low-water is attained at some intermediate spot between the extremes, the flood may be making at the entrance: indeed, in some places peculiarly situated, there is not always what is termed *dead-low-water*, the ebb continuing to run on until met by the flood. This may be seen within the needles at the Isle of Wight. If therefore the surface be an *inclined plane* at half-tide, or indeed at any period when either action of the tide continues, would it not only be a misnomer, but be erroneous, to call and to consider the mean line between high and low water, the true *level*? The ocean being an undivided whole, must be everywhere subject to the same general laws of nature with respect to its true level; and if that can be found only when all external circumstances leave its surface in a state of quiescence, every particular part where that level is sought for, must be precisely in the same condition; and as the circumstances which produce this condition are not always coincident in tidal waters, or indeed anywhere, they should be watched for with diligent attention. To embrace the critical periods, six months, at least, would be required for the preliminary observations.

It appears that all accession of water above the line of the lowest tide, is brought in, from the more open ocean, upon a coast, by the acquired fluency of the water from its being compressed laterally between the shores of a channel or other inlet, and that such is therefore *extraneous to the coast*, and ought to have no reference to the natural level of any locality; to arrive at which, it becomes necessary to await the return of the accession whence it came.

It may be urged as an objection to this, that as the *form* only of the wave progresses, and not the *body of water* risen, it must follow that wherever the tidal wave does rise, the body of water which is drawn up must be *local* and not *extraneous*. Although true with reference to the open ocean, yet such an objection will not apply in narrow inlets; if a mere wave were formed, which only rose and fell in successive undulations, no fluency could be expected; and although the tidal wave rises in broad channels, its progressive velocity must be considerably checked, and in narrow inlets, it will be nearly, if not quite, obliterated, and the amount of the rise extraneous.

It appears that it is the water risen *without*, which, acquiring fluency, is directed up the inlet; and that the water which has risen upon the shore of an inlet, and subsequently lowers by *ebbing*, cannot belong to the identical spot, for it absolutely *departs*, leaving the land dry to a certain extent, and for a long interval of time; and although it may truly go no farther than just beyond the entrance, yet that *very distance* (the attracting power having *ceased*) proves it to have been *extraneous to the inlet*. We have in this instance the direct evidence of our senses to certify to the *fact* of the water which may have risen—say twenty feet—at any given spot on the coast of an inlet, having to a *certainly* receded far away from it, and therefore does not

belong to it *naturally*—the *natural level of water being independent of external circumstances*. We may confirm our eye-sight by turning a boat adrift, when we should find that she would be carried out to the open ocean, and it is probable she would never return to any part of the coast she departed from.

It may appear somewhat venturesome to offer these opinions; but a sense of the duty of a seaman has called them forth, and in accordance with a notice in the pages of the *Nautical*; and whether they be right or wrong, no harm can follow. The subject of the tides is in the hands of a master. He is fully equal to the task of detecting error; and if he approves of the zeal and esprit-de-corps which has produced them, it will be sufficient. This question may be closed by remarking that the chances are, that no incidental circumstances could *invariably coincide* so as to produce a permanent difference of level in any two parts of the ocean, as connected with the tidal operations; and it is more than probable that nothing else unconnected with the tides can produce such an anomaly.

5th. Can excess of evaporation, considered with reference to the ocean, be admitted as influential in causing a Mediterranean sea to be kept permanently at a lower level than any other part?

It should be borne in mind, when reasoning on this subject, that however narrow the communication may be between the open ocean and a Mediterranean sea, the latter is "part and parcel" of one vast expanse of water, and that, whatever may permanently affect the level of that sea, must also affect the surface of all the rest: it seems quite impossible that it can be otherwise; but as the merits of this question will be examined in the sequel, little more will be added at present.

There is scarcely a doubt that evaporation has performed many changes on the earth's surface—that there are many depressed levels which were once filled with water; and now, occasionally, there are some, which, from their geographical positions coming within range of countries subject to periodic rains, are formed into temporary lakes, nay even to extensive seas of fresh water. In Paragua, for instance, hundreds of leagues of low lands are annually inundated; and the novel spectacle is presented of the wild inhabitants of that extraordinary part of South America (extraordinary both in a physical and moral point of view) reaping their harvest (of rice) in canoes!

[To be concluded in our next.]

REPORT OF THE COMMITTEE ON SHIPWRECKS.

To the Editor of the Nautical Magazine.

London, 3rd April, 1837.

SIR,—In January, 1834, a paragraph went the round of the papers, assuming the loss of merchant shipping in the last quarter of the year 1833 to be about 100,000 tons, which loss had cost many hundreds of thousands of pounds. It stated also, that whether this loss fell on underwriters or ship-owners, it was frightful, though far less so than the loss of life with which it had been attended.

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Now, although there might have been cases of individual loss, neither underwriters nor ship-owners, as distinct classes of society, lost a single farthing; but the whole loss, in that and all subsequent cases of shipwreck where the vessels are *insured*, fell on the public. Honest "John Bull" is at last beginning to rouse from his long sleep, and slowly rubbing his eyes, as becomes so grave and lethargic a personage, he begins to perceive the iniquities of that system, by the operation of which, I aver it to be fact, that merchant vessels are built with as direct an intention and design that they shall be readily lost, *when they are exposed to danger*, as an undertaker makes a coffin with an intention that it is to be put in the ground, and that he, "honest John," and not the owners of these vessels, has, by means of *sea insurance*, the pleasure of paying for them.

That the result of the system is a sacrifice of the lives of at least 750 British subjects yearly, and a tax of at least two millions sterling yearly, on "honest John's" pocket, as a condiment to sweeten the loss of life; and which losses, both of life and property, might to that extent be saved with the greatest ease, he has never, until lately, bestowed a thought upon; and even now, he is only beginning to perceive it. And, that the only cause which hinders this saving being effected, is the interests of those classes of society who flourish by sustaining the present system.

Mr. Buckingham, in his speech in parliament, as recorded in this month's *Nautical*, has laid open the real working of the system; and, let those interested deny his positions as they may, I defy them to disprove them. They are as solid, as solid bottoms would prove advantageous to merchant ships. But it is not likely that Mr. Buckingham, or any member of either house of parliament, can carry a bill curative of the evil, unless Government take it up. Already has hostility been expressed to his bill at a meeting of the General Ship-owners' Society. It is clearly control that is wanted to remedy the abuse; and it is vain to think the parties to be controlled will submit to it, until they are forced. The short question to be asked is, Are the lives of British subjects to be sacrificed to any interests whatever? Even the ship-owners themselves prove they are so sacrificed at present. They say, we do not deny that ships can be made greatly stronger and safer, and many shipwrecks be thereby prevented; but such ships would cost more money, and we cannot afford it. Now, if, owing to the shipwrecks, human life be lost, which might have been saved, had the shipwrecks, by means of stronger and safer vessels, been prevented, is not this sacrificing human life for money, even by their own shewing? But the working of the system cannot be more strongly exposed than by their own shewing, in their Annual Report. In their Report for 1833, read in 1834, they say, "Even the production of new ships is proved, from the peculiarity of many of the circumstances by which it is induced, to be by no means inconsistent with the same apparently interminable depression." What is this, but their own admission that they do not lose by the loss of their ships, but order new ones in place of them, with the means to pay for which they are provided by means of insurance paid for their old ones.

The ship-owners cannot escape the position they have chosen, and tacitly admit that human life is sacrificed for money. Whilst a ship-

owner, too, either gets his freight or passage money paid in advance, or can insure them, as well as his ship, to the full value, and too often exceeding it on the ship, the seaman, whose life and personal effects are at stake, is not allowed by law to insure his wages. The design of the law, that freight being the mother of wages, to give the seamen a strong interest in the safety of their vessels, was excellent, and would be attended with the best effects, were owners prohibited from getting freight or passage money paid in advance, or, what is the same thing, insuring them, and thereby giving *them* as strong an interest in the safe conveyance of the passengers or goods as the seamen. As the law at present stands what is it, but one law, an oppressive one, for the poor man, who *does* risk his life, and another law, a fraudulent one, and which cannot avoid leading into abuses, for the rich man, who does *not* risk his life?

I had intended to have said a few words on the remarks of your most able correspondent "Mercator," but my paper gives me warning to be brief. I do not know a greater benefit that any person could render to his country, I may say to mankind, than to reprint and widely circulate "Mercator's" letters on the construction, and means of improving the construction, of merchant shipping, whether the good to be effected related to the saving of life or property. Of the ten heads of shipwreck enumerated by the committee as the operating causes, I think there can be no difficulty in reducing the whole of them, indeed to me it is obvious, into *the abuse of marine insurance*, as the remote, but real and efficient cause of above three-fourths of shipwrecks. Without a little reflection bestowed upon it, I admit it is not at first sight apparent, but I do not believe it to be the less real. Marine insurance, as now in practice, is in my opinion neither more nor less than a cunningly-devised system of gambling, by which human life is *victimised* to an inordinate love of gain. Were the system and its effects *understood* by the public, I have already expressed my opinion elsewhere, and again repeat it, that it would not be tolerated for forty-eight hours. If it did, the public must knowingly justify murder. The only difference between "Mercator," whose talents I highly admire, and me, on the effects of marine insurance, is, that he seems to think that ship-owners and underwriters wish to reduce sea risk to a *minimum*. I do not think this, or they would adopt the palpable and obvious course to do so; and they cannot allege, by "Mercator's" able shewing, that the method to do so is unknown to them.

JAMES BALLINGALL, Surveyor of Shipping.

ON STEAM EXPRESSIONS.

It was probably Professor Barlow's intention to consider the steam pressure in lbs. per square inch, shewn by the mercury gage as nearly equivalent or at least proportional to the *gross power* of the steam exerted on the piston.

No doubt, the lessened pressure arising from expansions into a larger space, should have been taken, but in all estimates of gross power of steam the whole atmosphere $14\frac{3}{4}$ lbs. per square inch is most

properly included : since the resistance of the uncondensed steam, proportional to the imperfection of the vacuum, must be overcome by an equivalent expenditure of steam, on the acting side of the piston ; consequently, the resistance of the uncondensed steam, varies in no respect as regards the engine, from the resistance due to friction, &c. and when it is alone deducted from gross power, a partial and useless approximation is made towards neat power, the latter, being commonly expressed by engineers, as horse power

In investigations of locomotive engines, (Wood partially, Pambour, and Whewell's *Mechanic's*, 4th edition,) another element has been introduced, the evaporating power of the boilers, on which their velocity chiefly depends, and although the boilers of steam vessels generally afford a full supply of steam, still, an enquiry conducted by an union of practical and scientific men, into the relation between the quantity of water evaporated and used as steam, and the cubic feet of steam expended in the cylinders, of the pressure shewn by the indicator or otherwise ascertained on the closing of the steam valve, might afford means of determining whether the coal evaporated its due proportion of water ; whether the steam produced is applied to the best advantage, and whether the limits of steam power have been approached.

A distinct understanding of terms employed is essential, and a fixed and unalterable starting point is required for this purpose ; which, perhaps can be best obtained by the statical power of the steam, at the closing of the steam valve, due to its temperature, and the water contained in each cubic foot. If this pressure be taken as unity, then the steam in the boiler becomes unity plus the force required to produce motion through the pipes and steam apertures, and by this means the difficulty arising from steam, more or less throttled, is avoided.

The deductions of the difference of statical and dynamic pressure, due to the velocity of the piston, of friction, and of the imperfect vacuum, should then be made from the mean average pressure on the piston ; which last in many cases must be obtained by the addition of the amount due to any expansive action in the cylinder, whether arising from the common excentric, or from closing the valve and cutting off the steam before the end of the stroke.

An example is added for comparison of gross and neat power, founded on the practical opinions of your correspondent Vulcan, but without any deduction for the excentric ; its effects are trifling as regards pressure, though of more importance in water consumed as steam.

lbs. per sq. inch.	atmosphere.	
$1\frac{1}{2}$	+	$14\frac{3}{4}$
} = $16\frac{1}{4}$ lbs. per square inch.		
} = 2340 ,, per square foot.		
Cylinder $40\frac{1}{2}$ inch diameter	} cylinder = to about 34.5 ft. capacity.	
,, 4 feet stroke		

25 rev. = 50 strokes \times 2 = 100 cylinders of steam per min.; consequently

3450 ft. of steam \times 2340 lbs.	} $807300 = 244$ horse efficiency, or gross pr.

The gross power is that exerted by the steam on the piston.

The neat power is that of the engine on the connecting-rod.

Yours respectfully,

S.

NAVAL PATENTS AND PATENTEES.—PERING'S ANCHOR.

To the Editor of the Nautical Magazine.

SIR,—The method adopted in his Majesty's yards of making anchors, and to which are trusted the safety of our men-of-war, I have stated "to be defective." If anything had been required to convince me of this, even supposing I had known nothing of the matter on which I had written, the very lame reply which "An Observer" has found himself called upon to make to my letter, inserted in your August number, would have sufficed.

There is so much of "the dockyard style," and that sort of "Esprit du Corps," in the letter of "An Observer," that, were it not for the enormous statements which he so boldly puts forth, namely, that a "properly made anchor of Mr. Pering's had never been broken," and which could not be made from such a quarter, without charging him with wilful falsehood, that one might otherwise have really supposed the letter to have been written by an officer of one of the establishments, and which would give it some sort of authority. As some may be inclined to attach such weight to it, I think it necessary, in justification of what I have stated in my letter alluded to, to repeat, that there is not a king's yard, nor a naval store, where abundant instances are not to be found of broken anchors returned from his Majesty's ships. That all these are made upon Mr. Pering's plan, and that, moreover, they are "properly made," as "An Observer" very savingly remarks, I will not presume to say, but this I will say, and so must "An Observer" admit, that they must either be presumed to be made upon "Mr. Pering's plan," or else Mr. Pering's is not the plan adopted in his Majesty's yards; and in this case our naval authorities would be liable to the charge of being very negligent indeed of the public interest, in not having availed themselves "of so valuable an invention."

Although "An Observer" is evidently one who cannot comprehend how it is possible for a man to expose abuses and errors, without at the same time writing under the influence of interested motives, yet I am so entirely free from such motives that I care not whose invention succeeds, so long as that inferior ones are not palmed upon the public service. The spirit exhibited by "An Observer" clearly convinces me, that if he is not interested in Mr. Pering's anchor, he very much dislikes any one to find fault with it. In addition, he expects me to shew great courtesy when speaking of his (Mr. Pering's) anchors, which I condemn, because, forsooth, Mr. Pering had some notions upon other points of naval affairs of which I highly approve. In plain terms, I repeat that the failure of anchors in his Majesty's service is as I have stated it to be in my letter of August last, and I defy this to be *disproved*. I also repeat, that common sense must convince any unprejudiced man, by merely looking at it, that the method to which I have alluded of making anchors, by riveting them together, is the very best ever conceived. But I do not make myself the advocate of the parties to whom I have alluded, as "having bethought themselves of so simple a plan," nor do I either care for, or know anything about, their pretensions to invention, which "An Observer" would impeach,

by saying, that some half century ago a Spanish anchor, constructed on the same plan, was landed in one of his Majesty's yards. If this was the case, I have only to reply, that the greater fault would lie with the dockyard officers, in not having had the good sense to copy it.*

With respect to the remarks of "An Observer" about the anchor with the small palms, I will plainly admit to him that I am not aware of what he states as a fact, namely, "that such anchors have been tried in the dockyards, and have failed." For my part, I cannot believe that any fair trial has ever been made upon them, either in the king's yard or in king's ships. My opinion is, that "the less palm an anchor has the better;" and "An Observer" may satisfy himself on this point very easily—let him take a common pickaxe, (to which, by the way, he sarcastically likens the making of the anchor before alluded to, as though its similarity to such a tool should in the smallest degree detract from its advantages,) and let him exert upon a piece of clay, or any other penetrable ground, his utmost force in driving said pickaxe into it, first with its *broad* end, and then with its *sharp* one, and he will prove to himself immediately that a small increase of *depth* much more than compensates for a considerable quantity of *surface*, in resisting the breaking out of his pickaxe.

A word in respect to the expense of Mr. Pering's anchor, and others copying the same. It will require something more than a bare contradiction to shew, that these anchors are not made *at a very considerably increased cost* over any others; and as for their being copied, as a proof of their excellence, which would indeed be a fair criterion to prove the public opinion of them, if it were true, I should like "An Observer" to state when such piracy upon Mr. Pering has occurred. I will tell him, that out of his Majesty's yards no such anchors have ever been made, (except for mere experiment,) and for the reason, that the expense is very great, and the advantages not seen by any one out of the limits of those national establishments.

"An Observer" must enter a little more into particulars, if he means to controvert my statements, and which I challenge him to do. If it is said that the mere assertion of an anonymous writer may be met by contradiction from another, I reply, that a writer on matters affecting the public interest has a right to make (for brevity sake) any assertions he may think proper, and that he has a right, before such statements are to be considered as answered, to something more than mere contradiction. When details and proofs are attempted, to overthrow such assertions, the person taking up the cudgels may expect to have his arguments, proofs, &c., replied to; in this case they are wanting altogether.

I am, Mr. Editor,

Your most obedient servant,

London, 1st February, 1837.

MERCATOR.

* The sarcastic notice taken of the observation I made about the chain-cable in my letter, as "the perfect cable," convinces me that "An Observer" is not of a very enquiring turn. I repeat, *that it is perfect, and that it can easily be demonstrated to be so.* If it is capable of improvement, let it be shewn how.

PROPOSED SETTLEMENT OF DAVIS STRAIT.

WE are glad to perceive by the following letters that the proposal of Captain James Ross, R.N., conveyed in his letter to Captain Beaufort, appears to have attracted attention in a quarter, from which the best information may be looked for. Our correspondents, whose letters are annexed, seem to take different views of the subject; but agreeing, as we do, with the latter, that a fair discussion will assuredly either show that advantages will arise from the formation of one or more such settlements, or that any such measure would not be advisable, we shall be glad of those opinions which experience may dictate, and will give them that immediate attention to which the importance of the subject entitles them.—ED. N. M.

To the Editor of the Nautical Magazine.

Hull, 31st March, 1837.

Sir,—A letter having appeared in your useful publication, written by Captain James Ross, and addressed to Captain Beaufort, on “The expediency of a Settlement on the Western Coast of Davis Strait;” and this communication having doubtless been published for the purpose of inviting a fair discussion on this interesting subject, I take leave to state my observations to you on the reasons given by that experienced officer, for his conclusions in favour of the undertaking, having no doubt, however, that he has been actuated by those motives of humanity to which every “sailor’s friend” should do justice.

The first reason given is “The natives to the southward are more numerous than to the northward.”

The Captain seems *not* to have taken into consideration, that, in proportion to that number, a greater establishment would be necessary for the security of the settlement, and that, by all accounts about the latitude of 64° the natives are by no means a harmless race. But if he imagines that because the inhabitants are more numerous, “the merchantable products would be greater,” he is very much mistaken; for the fact is, that where the inhabitants are numerous, the animals they hunt are always scarce, if not extirpated, which they would soon be, if the demand became greater; and as the captain must know from experience, that skin clothing is best for that climate, he will admit it to be probable, that that very article would be most suitable to take from *England* for the use of the natives, instead of taking it from *them*; and I can moreover inform you, that the reason why Mr. Kahl could not succeed in establishing himself on the west coast, was because it was too numerously inhabited; his friend Mr. Owen, a respectable merchant of Copenhagen, having tried both in England and there, to raise a joint stock company; but in vain, because it was evident that it must be an unprofitable concern. The second reason given is, “the great fall and rise of tide.” This advantage is equally applicable to the Greenland side, as we know that at Baal’s river there are eighteen feet; and a ship damaged off Cape Walsingham, if even near to it, could, generally speaking, more easily get to the east than to the west side of Davis’ strait, because the wind is, five days out of six, westerly; besides, the harbours in the east side are then sure to be clear of ice, and are already inhabited by a friendly people. Every

captain of a whaler in this town, knows it is a common thing when their ships receive damage, to run over to the east side, and find the harbours open, while those on the west are entirely shut by ice. Captain Ross's third reason, requires no other observation, than that the known "accumulation of ice," may, as it has done before, continue and occasion another "long lost colony."

I come now to the fourth and "most important reason:" "The great probability of being useful to whale ships which may be beset and frozen in the pack in unusually severe autumns."

I perfectly agree that a settlement to the northward, at Ponds bay, or Coutts inlet, might occasion the abandonment of many ships by the crews that might otherwise be extricated; but I must contend that any settlement to the southward of Cape Walsingham would be useless; for, if a ship beset is once carried to the southward of that latitude where the strait opens wider, she is sure of getting out altogether. Again, if wrecked by the collision of the ice in that position, it would be impossible for the crew to reach the land to the westward, over broken and hummocky ice; they must therefore trust to the boats, and it would certainly be easier to reach Greenland in boats, than a settlement between Cape Walsingham and Cumberland strait. Yea, even if a ship, (as in the case of the *Active*,) was frozen in, or blocked up in a bay between these places, the nature of the ice is so rough, and the land so mountainous, that the crew could never get ten miles from the spot, and therefore a ship might be wrecked or blocked up at a very short distance from the settlement, and yet the crew would inevitably perish, because they could not reach it. In short, a station there would in all probability be useless, while it would induce parsimonious owners to send on board a lesser quantity of provisions for the crew. Captain Ross says, that "vast quantities of Eider-down, furs of land and sea animals, oil, and ivory, might be obtained there. Now, if he has never been on shore there, (which is probably the case,) that can only be a conjecture; but I can positively assure you that the quantities which he says "it is not easy to conceive" of these articles collected in Greenland, have been for many years a losing concern to the Danish Government, who go to work very economically, if we may believe Captain Parry, who says that the Governor General of the whole colony had no more pay than one of the *Hecla's* seamen; and I am sure that the King of Denmark would be happy if any respectable company of merchants would take the whole settlement off his hands. Should our Government commence the undertaking recommended by Captain James Ross, (for no wise company of merchants will do so) they must make up their minds to send out two ships every year, (in case one should be lost) to supply the settlers with farinaceous food. But alas! should two or three unfavourable seasons prevent the arrival of the necessary supply, adieu, for ever, to the unfortunate colonists!—But, admitting complete success to this enterprize, or mercantile speculation, a question of policy and expediency has yet to be considered: and here it cannot be successfully argued that it would increase the number of seamen, or even give them additional employment; but on the contrary, for if whale and seal oil could be obtained by employing the natives, and common merchant ships sent (as would be the case) with

few hands to bring it from the depôt, there would be no use for fifty or sixty seamen on board a whaler;—in other words, if settlements were established on the west coast which could obtain oil and whale-bone, there would be no use for whale ships at all, and consequently no annual employment for six or seven thousand seamen. The only sure way to encourage the whale fishery, and secure the safety of men employed in it, is to re-establish the bounty, and by an act of parliament *oblige* every ship to carry *twelve* months' provisions for her crew; this would effectually prevent all the calamities attendant on a severe season. All other schemes that I have heard of, and particularly that recommended, (with all due deference to Captain James Ross be it said,) would, in my humble opinion, only add the misery of a few more unhappy individuals to that which has been already suffered in that dreary and forbidding climate.

I am, Sir, your obedient servant,
A. B.

Hull, 5th April, 1837.

Sir,—In your valuable periodical for last month, I read with much satisfaction the letter of Capt. James Ross, addressed to Capt. Beaufort “on the expediency of establishing a settlement on the west side of Davis Straits,” to serve as a depôt for merchandise, and a port of refuge for whalers. Truly, Sir, it is high time that some such energetic measure be adopted by the government in order to secure to our country those important advantages which result from the north whale fishery, and to prevent the recurrence of such distressing and disastrous events, as those which have lately attended its prosecution. Every humane and generous mind must rejoice that the subject has at length been seriously taken up; and now that so practicable a scheme has been set fairly before the public, I sincerely hope that it will be followed up with energy and spirit to its successful accomplishment.

Being myself deeply interested in the success of the whale fishery, and having been, on several occasions, to Davis Straits, I trust that I shall not be considered presumptuous in offering a few remarks on the important subject under consideration, which I am chiefly induced to do from a belief, that by fair and open discussion, much information may be elicited as to the most proper position and character to be adopted by the proposed settlements.

Captain Ross recommends that the settlement be placed “between Cumberland Strait and Cape Walsingham,” and in this opinion I most cordially concur, if it be determined that only *one* settlement is to be established; but surely Captain Ross does not consider that *one* such establishment would be adequate to the purposes in view. In order to obtain the most extensive good, both in a philanthropic as well as a commercial point of view, it would be necessary to have settlements at some other places along that coast, and not too far distant from each other, so that on whatever part a ship may chance to be wrecked, the crew might, without any great difficulty, reach some one of the following places, which appear to me most suitable for the contemplated purposes:—

1. Ponds Bay.
2. Coutts Inlet, or River Clyde.
3. Home Bay.

These three are to the northward of the principal station as proposed by Captain Ross; but if a good harbour can be found either in Resolution Island to the southward, or in any of the intermediate islands, I consider *that* would also prove a most desirable situation, as well for the advantage of the whalers as for the Hudson Bay Company's ships.

Captain Ross expresses an apprehension that a settlement placed far to the northward of Cape Walsingham might be the occasion of the crews of the whalers abandoning their ships without making any adequate exertions to extricate them; and with this view of the case he very judiciously proposes to place the establishment just to the southward of what we must all admit to be the most probable place of escape, if escape be at all possible, and to the south of which position the probability of destruction becomes so great as to justify the abandonment of the ship.

But I have no hesitation in stating my belief that Captain Ross's apprehensions on this point are perfectly groundless. The sailors employed in the whale fishery are *individually* far more deeply interested in the preservation of their ship than those of any other vessel, for reasons which I need not now enter on; and are, therefore, not likely to desert her so long as the smallest hope of saving her can be entertained.

But if there were to be only *one* establishment, and that placed far to the northward, it might certainly prove an inducement, if a ship were to be beset at a very late period of the season, and the chance of escape appeared hopeless; and, on the contrary, if settlements were formed at several points along the coast, the crew would be encouraged to persevere in their exertions to the last, even, in some cases, until they were driven down to the southernmost settlement.

It is well known to all who have been to that country, that the whole of the western shore of Baffin's Bay and Davis Straits is an archipelago of islands, and that to the end of August the whales usually make their way up the numerous large inlets and fiords, which doubtless lead to some extensive beach, where, undisturbed by the persecutions of the whalers, they bring up their young; and it not unfrequently happens, when the ships have been late in crossing to the western shore, that not a whale is to be found; so that I am pretty certain, that before many years shall have passed away, it will become necessary to follow the whales up these inlets, or else to abandon the pursuit entirely. Indeed nothing has prevented our adopting that measure on many occasions, but our total ignorance of the nature and extent of the inlets, the set of the tides and currents, and the likelihood or otherwise of getting hampered therein by ice. Now, Sir, in addition to the reasons that Captain Ross has advanced for the establishment of settlements on that coast, it appears to me that no more effectual means could be adopted for the survey of these intricate places, and arriving at a proper knowledge of the tides, &c., than the plan proposed; because, in the frequent communications that would necessarily take place between the several establishments, as well as the various

excursions in boats and sledges, for the purpose of collecting fms, oil, and other products, from the natives, much valuable geographical information would assuredly be obtained, and eventually the whole extent of an (at present) almost unknown coast accurately surveyed.

Permit me, further, to remark that a correct survey of a coast upon which so many of our ships are annually employed, is a desideratum of much importance, and ought to be immediately commenced, whether the establishments be formed or not. A surveying vessel (properly fortified) ought to be stationed there during the summer months, with powers to act as a kind of commodore to the whaling fleet, compelling the ships to sail for England at a proper period of the season, under penalty of losing their insurance if subsequently wrecked, and to afford relief to any ship that might be unavoidably detained in the ice, the cost of the supplies to be paid by the owners.

The wise policy of our naval administration in so considerably extending the surveying department under the present indefatigable hydrographer, has already been productive of much benefit, and the approbation of this by parliament is echoed in every part of the kingdom. To such objects, which tend so materially to the preservation of life and property, the people, of every political party, are ever ready to contribute, and justly to consider them the most permanently beneficial application of the public money.

This, is, however, only one of many collateral benefits likely to result from the proposed establishments; and if you consider this communication worthy of a place in your magazine, I may, perhaps, on a future occasion, trouble you with some further remarks on this most interesting subject.

Captain Ross's letter has been copied into some of our newspapers, and has occasioned much conversation amongst the merchants of this place. His plan is highly approved of, so far as it goes, but the general opinion appears to be, that it is of too limited a character to be so extensively useful as it would become on a more enlarged scale, such as I have now ventured to propose.

BAFFIN.

Naval Chronicle.

By the following recent observations in the House of Commons, our naval readers who feel an interest in that establishment which was "the play place of their former years," will see the fate of the Royal Naval College:—"Mr. HUME then entered into a long argument, to prove that the right hon. member for Cumberland had taken an unwise step in putting down, as he had done, the School of Naval Architecture, which had existed for more than twenty-eight years. Those who came after the present generation would have cause to regret the mischief done to the naval service by the suppression of that school.

"Sir J. GRAHAM, in reference to the observation of the hon. member for Middlesex, remarked, that he had on a former occasion, when he was in office, shewn from official documents, that from the time of William III. down to the time when he was speaking, there was never

a smaller number of ships in ordinary in time of peace than now. He then proceeded to defend his suppression of the School of Naval Architecture, and begged to console the hon. member for Middlesex, by assuring him that if any mischief arose from that measure, it must be very distant, as there were many gentlemen who had been educated in that school now in the dockyards, who were capable, if they were elevated to the situation, of fulfilling the duty of surveyor of the navy. He would now avail himself of the opportunity to ask the Secretary of the Admiralty a question respecting the suppression of the Naval College. He thought that the decision to which the Admiralty had come on that subject was, upon the whole, a wise one. It was necessary, however, to consider how the naval youth were in future to be educated, to whom the honour of the British flag, and the lives of British seamen, were to be confided. He had himself unquestionably contemplated the suppression of the Naval College; but, contemplating that measure, he had always felt the importance of supplying some scheme of naval education in its stead. He was of opinion that that scheme ought to blend both the theory and the practice of ship-building, and, being of that opinion, he also thought that the cockpit of a man-of-war would be the best school for carrying that scheme into execution. It appeared to him to be expedient, that in every man-of-war, except they were small craft indeed, there should be a schoolmaster appointed, after a stringent examination into his qualifications for the situation, and paid liberally, as his qualifications deserved. He thought that by the instrumentality of such schoolmasters, an uniform system of education might be introduced into the navy. He would now ask whether that subject had been taken into consideration by his Majesty's Government. He had no doubt that it had, and he therefore expected to receive a satisfactory reply from the Secretary to the Admiralty.

“Mr. C. WOOD observed that two questions had been asked. The first question related to the number of ships which were at that time building in the dockyards. To that question he should reply, by stating that there were at present seven line-of-battle ships building, the same number of frigates of the first class, nine of smaller dimensions, together with three armed steam-vessels. The second question related to the system of naval education, and to that question he should reply, by stating that the Government had considered a plan for the future education of the navy. The Admiralty were of opinion that a better education would be given to our naval youth by blending their scientific education with that general system of education which it was desirable that every gentleman who entered the navy should possess. They had therefore decided, that to every ship-of-war there should be attached a competent schoolmaster, with an adequate salary, and that he should be well qualified for his duties, by being taken either from an English or a Scotch university. They had in consequence obtained an order of council, raising the pay of all schoolmasters in the naval service to the amount given at present to a schoolmaster in a first-rate. The Admiralty likewise proposed, that as each youngster now paid a certain sum to the schoolmaster, and as all who had been at the Naval College paid certain fees for the instruction which they received there, the schoolmaster on board our ships-of-war should in future receive

£5 a-year from all persons who received his instruction. This regulation would enable them to pay the schoolmasters' salaries, varying from £160 to £300 a-year. Another regulation which it was intended to make, was, that there should not be a greater number of schoolmasters appointed than we had ships in commission. The Admiralty were at present considering the best mode of examining into the qualifications of the future naval schoolmasters. Though he could not state at that moment the precise nature of the qualifications which the naval schoolmasters would be required to possess, or of the examination to which they would be subjected, as a test of those qualifications, he hoped that he should in a very short time be able to make a statement on both points which would be satisfactory to the house, and to the public.

“Sir J. GRAHAM observed, that what had just fallen from the hon. Secretary to the Admiralty appeared to him to be in the main most satisfactory. He thought that there should be one definite and uniform system of naval education which the qualified schoolmasters should all be bound to teach. In a matter of such importance to our naval service, there should be no stickling about such paltry economy as the saving of £50 or £60 in the salaries of the schoolmaster.

“Admiral ADAM had only one observation to make to those which had fallen from his hon. friend the Secretary of the Admiralty. It was intended that the schoolmaster should have a separate cabin, and should mess with the other officers.”

Appointments of schoolmasters have already been made, and we are glad to find that this gentleman is placed among the *officers* of the ship, and provided with a cabin. The good effects of such measures can best be appreciated by those who have seen him in his former condition in the navy, and will be attended with the best possible results.

THE WEATHER.—A winter season so severe and protracted as that just past, we must expect to be attended with similar vicissitude of weather at sea, and corresponding effects on navigation. The ice-lands which are found in the Atlantic by the early Quebec ships, may be expected to abound in greater numbers, and we cannot help anticipating some painful increase of the annual disasters produced by them.

We find by the maritime extracts in the *Shipping Gazette*, that the ship *Samson*, having been driven on the banks of Newfoundland by S.E. gales in lat. 44° N. and long. 50° W., was lately surrounded by ice, some of which was very mountainous. It appears also, that H.M.P. *Lapwing*, from Mexico, met with large quantities of ice drifting for full twenty miles, extending north and south in lat. 43° 42' N. and long. 50° W. The weather at Halifax, in March, was more severe and boisterous than any part of the winter; and when the extreme severity of the winter is considered, the utmost vigilance will be required by seamen to avoid the increased risk to which they will be subject from these floating dangers.

These remarks were scarcely written when we received the following accounts from Quebec, dated 16th March:—“We have had snow till we have been obliged to dig ourselves out of our houses. The ice is

stationary, and packed in an extraordinary manner opposite the city, which always delays the spring. We have had very much sickness—measles, and small pox in defiance of vaccination, scarlet fever, influenza, and worse than all, low and typhus fevers.” We say again to our Quebec traders, beware of icebergs and fogs.

NAVAL DISCIPLINE.—We congratulate the service in general on the abolition of a practice which had found its way into it from time immemorial, but founded on no other authority than that arbitrary exercise of power which delights the generality of mankind. We allude to the custom of mastheading midshipmen, which the following memorandum, issued by the commanders-in-chief of naval stations, has effectually prohibited:—

“The Lords Commissioners of the Admiralty having had under their consideration the practice which is occasionally resorted to in some of his Majesty’s ships, of sending young gentlemen to the mast-head as a punishment, and their Lordships being of opinion that this practice ought to be discontinued, such opinion is hereby made known, and the practice is to be discontinued accordingly.”

In our opinion, the practice was degrading, not to the midshipman alone, but to the uniform he wore, and therefore affecting the dignity of the whole profession.

FOREIGN AID.—We have much satisfaction in recording the following extract from *Galignani’s Messenger*:—

“We mentioned a few days ago, the saving of an English ship of war, by the Minos, French steam vessel, in the bay of Gibraltar. The following are some particulars:—The English ship was the *Pembroke*, of seventy-four guns. She had been driven from her anchors in a violent gale of wind, and was on the point of striking against the ramparts. The captain requested the assistance of the steam vessel, which was immediately granted, and continued till the *Pembroke* had got another anchor out, and her commander believed she was safe. The storm, however, continued, and during the night of the 10th March, she drifted on the rocks. At daybreak she threw out signals of distress, part of her false keel having been torn off, and she was obliged to throw all her water-casks overboard, in order to lighten her. She would have been inevitably wrecked at the fall of the tide, had not the *Minos* again hastened to her assistance, and towed her off the rocks. The governor of Gibraltar expressed, in the warmest terms, his acknowledgments for the promptitude, good will, skill, and judgment, with which the French vessel afforded this great service to the British navy.”

We take the same opportunity of expressing our gratification at the noble conduct and sentiments of Commodore Elliott, of the United States Navy, in saving an English vessel in December last. The particulars will be found in the annexed letter which appeared in a recent number of the *Shipping Gazette*; and we cordially agree with the editor of that journal, that “the generous sentiments which it breathes will be duly appreciated and responded to by every British heart.”

“United States Frigate *Constitution*, Dec., 1836.

“Sir,—At sea on the 22nd instant, I fell in with a vessel, crippled

and entirely dismasted: she proved to be the schooner *Perseverance*, of Dartmouth, Captain Adams, who had left Cadiz on the 7th, laden with wine, and bound for Liverpool. It blew a strong gale, and I was unable to communicate with her by trumpet or by boarding. I veered her a hawser, the prompt acceptance of which on the part of the captain cannot but be approved of by all who are interested. A strong east wind prevailing I took her in tow for Lisbon. The wind came out adverse, the gale shifting, and the sea making a high breach over her, a flag of distress was hoisted; the wind proved more adverse within thirty miles of Lisbon. I bore up for this port, and now take pleasure in bringing the vessel here without further injury, since she was taken in tow. The persevering industry of the captain, entitles him to the kind consideration of the owners. It affords me pleasure, sir, to deliver her into your hands, and the more so in being the providential instrument of rendering assistance to a vessel bearing the flag of a nation to whom we are allied by the ties of language, and the many pleasing recollections of mutual intercourse.

“ I am, very respectfully, sir, your obedient servant,

“ J. D. ELLIOTT,

“ Commanding the United States forces in the
Mediterranean and adjacent islands.

“ To J. M. Brackenburch, Esq. His Britannic
Majesty's Consul, Cadiz.”

THE *ATALANTA*.—In page 256 of our last number, we gave a summary of each day's proceedings of this vessel as far as Teneriffe. From that statement, it will be seen that the total quantity of coal consumed was 117 tons, the average quantity per hour 12·2 cwt., or 6½ lbs. per hour to the horse-power. The engines are of 210-horse power, and the vessel is 630 tons, built at Blackwall by Messrs. Wigram and Green.

HOW TO KNOW A MAN-OF-WAR.—Our nautical readers will fully appreciate the nature of our allusion, which, since the accident has passed off without loss of life, may be admissible. We read in the *Shipping Gazette* the following intelligence from Falmouth:—“ The barque *Elizabeth*, Kelly, of Newcastle, from Falmouth for Miramichi, put back to-day; was run foul of by a ship supposed to be a man-of-war, [reported in yesterday's *Shipping Gazette* to be H. M. ship *Wasp*,] on the 4th inst., in long. 13° 0' W., lat. 48° 40' N., lost mizen mast, quarter stove in, boat carried away from the stern, with other damage. The mate, and three men of her crew, supposed to have got on board the man-of-war, which vessel lost her bowsprit, cut-water, and figure head. The reason for believing her to have been a man-of-war is, that a sheet of copper, marked with the broad arrow, from her cutwater, was left on the *Elizabeth's* deck; there was also a part of her figure-head, a woman's bust.”

The collision indeed must have been awful, for a piece of copper on a ship's *bottom* to be left on the *deck* of another! We have yet to learn how it is to be accounted for.

SCIENTIFIC EXPEDITIONS.—In the Supplement of our December number we gave the outline of an expedition to be sent by the United States, into the Pacific, on scientific purposes; and for some time past we have heard rumours of another voyage round the world by the French. The *fiat* has at length passed, as our readers will see by the following sketch of its projected route.

The king of the French has, by a decision of the 26th of March, approved of a proposal for a new voyage round the world, the conducting of which is to be confided to M. Dumont D'Urville. Two vessels will be employed in this expedition; the *Astrolabe*, commanded by Captain D'Urville, and the *Zelee*, by Captain Jacquinot. These vessels will sail from Toulon about the beginning of September, and touching at Cape Verds will proceed due south into the polar sea between the meridians of Sandwich land and South Shetland, to pursue Weddel's track, who it will be remembered reached the lat. of 74° 15'. The vessels will penetrate as far south as possible, and return to Magellan Strait, where ample work is yet left in the examination of the numerous sounds and inlets in the adjacent archipelago of islands. From hence the vessels will proceed to Chiloe, and thence to Valparaiso, to refit, &c. In the spring of 1838 they will depart from Valparaiso for the Polynesian Archipelago, and in June will be at Vavoo, where M. D'Urville will finish the work left undone by *Astrolabe* in 1827. Banks Islands, to the north of the New Hebrides, and Van Icoro will next be visited, and afterwards the Solomon islands, from whence, if the state of the vessels and crews permit, M. D'Urville will pass through Torres Straits and visit the new Dutch colony on the river D'Ourga, Aroo and Key Islands, and thence proceed to Amboina. It is intended the *Zelee* shall then return to France, bringing with her the collections made. The *Astrolabe* will pursue her voyage towards New Holland, and in the latter part of 1838 will be at Swan River. She will go thence to Hobart Town and New Zealand, and make a careful survey of Cooks strait. She then proceeds to Chatham island and continues northward to the Caroline islands, afterwards to Mindanao, Borneo and Sumatra, and will then return to France by Cape of Good Hope. We look on this as a most interesting expedition, and one that will yield important results. We cannot, however, but regret to see so extensive and important an island as New Guinea, left year after year in its original neglected condition, with but little addition to its coasts since the time of Dampier.

THE VERNON.—The following was received too late for our April Number.

To the Editor of the Nautical Magazine.

Arundel Street, Strand, 29th March, 1837.

Dear Sir,—I forward you the enclosed paper, by request of a friend, on behalf of the officers of H.M.S. Vernon, with the view to its appearance in the next number of your excellent little work. I trust that its prior appearance in some of the public prints may not deter you from giving it insertion.

Your faithful Servant,
JOHN STILWELL.

“The officers of the Vernon having observed that various erroneous statements have gone abroad respecting her qualities, consider it a duty that they owe to their country, to disabuse the public mind of the prejudices thereby created; they therefore beg leave to state, that after nearly three years trial of that magnificent ship, they consider her a *perfect* man-of-war in every respect, affording ample room to stow her provisions, berth her crew, and fight her guns, under all circumstances; besides being a remarkably fast sailing, and easy ship.

“Let any unprejudiced person examine her standing rigging (now in Sheerness dockyard) that has been over her mast heads for nearly five years and judge for themselves.

“In respect to her expenses, they assert, without the fear of contradiction, that they have been less during this commission than those of any ship of her class on the Mediterranean station; and they hope that every lover of his country and friend to the wooden walls of old England, will join them in wishing to see many such ships in His Majesty’s service; there will then be no difficulty in bringing an enemy’s fleet to action in the event of a war.

JOHN M’KERLIE, Captain,
COLSON FESTING, 1st Lieut.
EDMUND WILSON, 2nd Lieut.
JOHN P. DAVEY, 4th Lieut.
PETER DUTHY,
CH. G. E. NAPIER, 5th Lieut.
M. BRADSHAW, Master.

WM. MORRIS, Mate.
J. MALING, ditto.
A. CURTIS, Midshipman.
JAMES STEEL.
J. H. ORANG, Mate.
ROBERT FULLER, 2nd. Master.
ROBERT DUNCAN, Mate.

IRON STEAM-VESSELS.—The following extract is important, regarding the progress of iron steamers:—“We noticed a short time ago the launch of the Duncannon, an *iron* steam-vessel, from Mr. John Laird’s yard, North Birkenhead. She has since been fitted, by Messrs. Fawcett and Co., with an engine of 65-horse power; and, though her size (200 tons measurement) is great in proportion to the power of the engine, still, from her superior model, and light draft of water, she was found, on trial in the river here, to exceed in speed some of the fastest steam-vessels sailing from this port. We have no doubt that iron vessels, from the many good qualities they possess, will soon be generally adopted, particularly where *great speed* and light draft of water are indispensable; and, as a confirmation of our opinion, we may add, that the builder of the Duncannon has now several large iron steamers in progress, and, among them, one of 200 feet long. By Lloyd’s List we see that the Duncannon left here yesterday week for Waterford, where she is intended to ply permanently, and arrived there the following day.”—*Liverpool Paper*.

SIR EDWARD PARRY.—We understand that Captain Sir Edward Parry is appointed by the Lords Commissioners of the Admiralty, comptroller of steam machinery and packets.

WYRE HARBOUR.—We have before us a view of the projected town of Fleetwood, at the entrance of this harbour, which, in point of taste, and elegance of arrangement, it would be difficult to surpass. We are glad to find that the measures proposed for deepening the

mouth of the Wyre will shortly be in active operation, and we confidently look forward to the establishment of a large shipping port, the progress of which we shall not fail to watch with some degree of anxiety, and communicate the same to our readers. We have always entertained a favourable opinion of this project, from the natural local advantages of the Wyre, first in its peculiarly desirable position as a harbour of refuge, and next from its having an ample depth of water to its very entrance, without any encumbrance of shoals or sands.

NORTHERN DISCOVERY.—The following extract of a letter from Copenhagen will startle some of our readers who are interested (and who is not?) in this interesting subject. For our part, we cannot look on such announcements but with a kind of sceptical feeling, and we strongly recommend that the narrative of the voyage in question be accompanied with a full statement of the original observations, with an account of the instruments with which they were made, in order to determine the geographical positions of the parts visited; otherwise we have no hesitation in saying that the bare statement will be consigned to the same oblivion in which it appears the voyage in question has hitherto slumbered:—

“Royal Society of Northern Antiquarians, Copenhagen, 13th Feb., 1837.

“I avail myself of this occasion to direct your attention to a work, which, after many years' labour, and great expense, will make its appearance in the course of a few months. That part of its contents which must interest you in particular, more than most others, is a voyage of discovery in the arctic regions of America, during the year 1266, through Lancaster Sound and Barrow's Strait, to regions first again revisited, and more accurately explored, by yourself and fellow-voyagers.”

What the original name of Lancaster Sound was, we are to learn, it appears; but, for the information of our readers, we may add, that the work containing this most memorable, but hitherto forgotten voyage, is *Antiquitates Americanæ*, or, “*A Collection of the Accounts extant in ancient Icelandic and other Scandinavian manuscripts, relative to Voyages of Discovery to North America, made by the Scandinavians in the tenth and following centuries.*” It will be printed in Latin as well as Danish, and a brief summary of the work will accompany it in French and English.

INVESTIGATION OF MR. SAMUEL HALL'S PATENT IMPROVEMENTS ON STEAM-ENGINES.—On Saturday, April 15th, Mr. Hall's patent improvements on steam-engines, as applied to a pair of 180-horse power on board the Hercules steam-vessel, were investigated by Sir William Symonds and Mr. Ewart, on the part of the Lords Commissioners of the Admiralty. Several scientific gentlemen, and others interested in steam-navigation, were also present. The party proceeded down the river in the Hercules, as far as Gravesend, and were well satisfied with the superior working of the engines, and the successful competition of the Hercules, (although laden so as to draw 12 ft. 4 in. water,) with other vessels of the finest build, and the best engines, working by injection. The Hercules has been running regu-

larly for a year and a quarter between London and Cork ; and these improvements having besides stood nearly a three years and a half trial, in a steam-packet plying on salt-water, the great and important advantages of Mr. Hall's improvements may be considered as established, leaving no doubt that injection engines will hereafter be entirely superseded. We must reserve some further remarks on these improvements for our next.

MERCHANT SEAMEN.

To the Editor of the Nautical Magazine.

SIR,—Having been a great admirer, as well as a reader of your useful little work, from its commencement, I cannot help expressing my regret at the statements made in your number for March last respecting the existing condition of our mercantile marine.

Now, every one must know, that Sir James Graham has acted from the best of motives, and with the assistance of some of the best and ablest of our naval officers, and several highly talented men of practical knowledge of the city of London ; but his measures being yet in their infancy, let us hope that time, and a strict observance of their enactments, will make them work better. Although every man acquainted with the merchant trade of this country, must observe with regret the great falling off in the character and discipline of our merchant vessels, yet, to compare our seamen (bad as they may be) with the wretches engaged in the detestable traffic of human flesh and piracy, is both unjust and unfounded ; and, although your correspondent, the "Master of a British Merchant Ship," may be a very well educated man, and have passed much of his time on shore in good society, I much doubt his having passed through the necessary degrees on ship-board, to qualify himself to keep the crew of a large trading-vessel in that state of order necessary to the comfort of himself and passengers, as well as the benefit of his owners. However, his object appears to be a good one, and his letter has been so ably replied to in your two first articles on British ships and seamen, that I hope your correspondent, and Mr. Earnest, will persevere ; for controversy on subjects of importance tends to bring the matter in its true bearings before the public.

Your correspondent's account is no doubt correct regarding the acts of insubordination on the part of the crew, and those of tyranny on that of the masters and officers ; but the bad quality and short allowance of the provisions is the cause of frequent disturbances ; and, surely, if the master of a merchant vessel (not all of them men of gentlemanly bearing) has already the power of sending a man to the house of correction for thirty days, of mulcting him of his pay, can put him in irons for four or five months, and feed him on bread and water ; he ought to be content without wishing for the power of inflicting corporal punishment, or transporting him from his native country. I much fear, until some better system of keeping up the stock of our sailors, than sending every idle and incorrigible boy on shipboard, together with the want of attention to the character for sobriety, honesty, and

seamanship, among the mates and masters, and more care in equipping, victualling, and storing of our vessels, that loss of life and property, tyranny on one part, and insubordination on the other, will still continue to disgrace the columns of our manifold nautical publications. But I hope yet to see national mercantile maritime associations formed in London, with committees at all the principal sea-ports in the kingdom, at which meetings should be frequently held, and resolutions passed, for the general government of all vessels employed in the trade of the country, whether home or foreign. The association should protect all masters and officers in the proper execution of their duty, and at the same time shield the seamen from all injurious usage, hearing and remedying all complaints.

Supposing such an association to be once formed, their first act might be to make a law, that no apprentice should be bound for less than seven years; and those only of robust healthy habits, brought up with the fear of God, and of honest parentage, (the poorer the better.) They should be under the care of, and considered as belonging to, the association, who would see that they are properly instructed in all points of duty, both professional and moral. A particular mode of dress might be established for them whilst serving their time, on completing which premiums, differing in value, should be bestowed on them; this would be a sure means of bringing forward a set of prime able seamen, attached to their profession and country, from whom excellent officers might be chosen.

The second step would be, to exclude from the sea service all the worthless blackguards that now find their way on board the vessels, through the assistance of the crimps, and landlords of lodging houses. This can only be done by obliging the master to take no man without a certificate of his good conduct, signed by the master of the last vessel he sailed in, and a sufficiency of proper clothes and bedding necessary for his voyage; (say a chest and hammock;) this would soon make the good-for-nothing try some other trade, and would be a check against desertion.

With an establishment like the foregoing we should have fifteen or twenty thousand well-disposed boys serving their apprenticeship; and if an ill-disposed man finds it next to impossible to get a berth, what remains to be done? Surely every one must perceive that a proper selection of men competent to so sacred a discharge of duty as the care of a valuable ship, with the lives of their fellow-creatures, demands the greatest possible scrutiny on the part of those interested. And how shall this be done, unless some mode of testing their ability and characters is devised. Examination should by all means take place; the honourable and competent ship-master and mate of an English ship should have a warrant for employment that will be a guarantee to his employer. The association having advanced the good work thus far, might then bestow attention on the construction and equipment of vessels, establish a scale of provisions, make bye-laws for discipline, and shew the relative obligations between officers and men, so as to ensure a prompt and cheerful compliance on the part of the latter, and a steady and becoming mode of commanding on the part of the former; to shew the seamen that they are not unthought of or uncared for by their employers.

A different system should be pursued of collecting and employin g a fund, raised among themselves, for the erection of alms-houses, or properly, sailors' homes, which ought to be local, so that the officers and seamen of every sea-port might see where and how their contributions were expended ; and I feel assured that if this should ever be the case, that a sum, *not* exceeding sixpence in the pound per month, would be cheerfully subscribed from the apprentice on his first going on board, to the master, who retires to enjoy his well-earned competence and admission to this place. Every infirm disabled ship-master, mate, carpenter, and seaman that had served his employer faithfully, should be entitled to admission therein, and a distinction of grades kept up according to their relative stations in their profession ; and towards the erection and support of these invaluable institutions, not only the seafaring part of our population, but every one in any way interested in the shipping interest, such as builders, owners, shippers of goods, merchants, underwriters, and all brokers and agents should contribute. Let but a system of this kind be once established, and we shall have fewer complaints of our ships, and not one-tenth part of the melancholy wrecks to record. Most of this, Mr. Editor, accords with your own ideas, as given in your March number, 1837 ; let me, therefore, beseech you to direct your energetic abilities and moral influence towards this patriotic end, and unborn sailors will have reason to bless the Nautical Magazine.

OBSERVER.

We quite agree with our friend "*Observer*" on this important subject, and he may be assured that where we can advance the great object he has at heart, we will do so. We have always advocated *local asylums* for merchant seamen for obvious reasons, and shall rejoice when we shall find some master hand take up the subject in earnest. It was but the other day that the following appeared in the Hull Packet. Where are such establishments, we should like to know, in London—and why are they not in existence ? We shall leave the parties on whom our Observer has called, to answer.

"We observe that the Trinity-house have commenced the erection of another almshouse, adjoining to the one in Carr-lane, some time since appropriated to masters of ships and their widows. The one now in course of building, we learn, on inquiry, is for the widows of the fore-mast classes of seamen belonging to the port. This is another proof that the Trinity-house continues to increase the comforts of the seafaring poor, as much as the increased commerce of the port enables it to do from its contributions for this purpose ; and when we see so many of these desirable establishments emanating from this corporation in different parts of the town, and consider the great relief they must necessarily be to the parochial rates, we do not envy the motives which induce the virulent attacks which are made by a certain clique, both in and out of parliament, in order to persuade the seamen of the port that the funds from which such results are derived are misappropriated, and that hucksters and pettifoggers are more fit and proper to administer to a scaman's necessities than are his brother seamen."—*Hull Packet*.

EMIGRATION SHIPS.

THE following letter of Captain Smith, R.N., appears to coincide with some others of our correspondents :

Mr. Editor,—Having for some years past, paid particular attention to the very loose method attending the conveyance of poor families emigrating to the colonies, and during that period frequently noticed the defective and unseaworthy state of ships employed in their conveyance; and being the first who called the attention of the principal secretary of state for the colonies to the subject, in the year 1831-32, I may also be supposed to be somewhat conversant with the matter, and, assuming this, I beg to state, that while I agree to a certain extent with a correspondent "F. J. R." of the Morning Herald, as it respects first and second class ships, I totally differ from him as to the motive he assigns for government taking up second, instead of first class vessels.

For it is monstrous to suppose that the very highly respectable and efficient Board of Admiralty (under whose directions, I believe, the taking up of such vessels is now placed) would, for a few shillings per ton, more or less, cause a ship, not sufficient for such a voyage, at the very worst season of the year, to round the Cape, and run a distance of some thousand miles to the eastward in a high southern latitude, where the most severe westerly gales are experienced; to be taken up for the conveyance of three hundred persons, consisting of valuable agricultural families, and such as are so much required in the distant colony of New South Wales. But on the contrary, I am sure, that if double the price was asked for a safe ship to that for an unsafe one, it would not be a question with government which should be taken, provided a safe ship could not be procured at a cheaper rate.

To wit—ships taken up for the conveyance of convicts by government, until emigration agents were appointed for the inspection of private ships conveying passengers, were always more efficient, better manned, found, and fitted, than those employed in the conveyance of free settlers or emigrants; and instances are, where ships, having been refused for the conveyance of convicts, have, after this rejection, been placed on the berth in the docks, for the conveyance of passengers to the colonies.

I would simply observe, in conclusion, that it does not always happen that A 1 ships are safer than what are termed second class; this point depends greatly on construction and materials. Cheap ship building, particularly in some of our out-ports and the colonies, have been the means of bringing a large number of ships, standing A 1 for a certain number of years on the registers, into use. Such vessels, from the defect in putting them together and the green* material of which they have been constructed, have been known to fill with water on their very first voyage, so that it does not always follow that first class ships are the safest. Again, it has been discovered, that by taking out a plank above the light water mark, three years after some such ships, standing A 1, have been launched, that the whole of the frame has proved defective, and that, if the plank had not been so removed, a ship in that state, although bearing the character of first class, might have proceeded on a voyage to Australia with passengers and foundered at sea.

* Unseasoned.

But I fear I am trespassing, not having intended to have extended these observations to more than a few lines; but you will probably pardon me for adverting to the ship *Neva*, of which much has been said since her unfortunate wreck.

I happened, while at Sydney, in New South Wales, the voyage previous, to be asked to inspect her. This was immediately after the great repairs she had undergone, and my impression was that she was in every respect a good substantial vessel, in good order, and fit for the voyage for which she had been taken up. The master of her I had met on a former voyage in South America, and he, I considered, was what may be termed a thorough bred seaman, well qualified to perform the duties of his station.

Sir your obedient servant,
EDWARD SMITH, R.N.

March 18, 1837.

In addition to the above remarks, I beg to observe that a short time since I superintended the repairs of a Quebec built ship of about 500 tons, about three years old, built under inspection, and found it necessary to replace about five thousand tree nails which are the principal means of fastening the framing and planking of a ship together, on the present system of ship building. Those taken out were in such a decayed state, that it was found necessary to bore them out, thus showing, that all first class vessels cannot be relied on; while at the same time no encouragement would be held out for good ship building, or keeping ships in a safe state, if a valuable ship is to be condemned because she happens to be upwards of ten or eleven years of age.

Law Proceedings.

SCARCELY have we expressed our abhorrence of such proceedings as are recorded in the case of Captain Cannell, in our last number, when we find similar outrages going forward at the same time: we lament much, for the sake of the character of British seamen, that we have to record such brutal proceedings; and we cordially join the Editor of the *Shipping Gazette*, in the following remarks which he has made in a recent number of that valuable journal, on the subject of our mercantile laws:

“We have given it as our opinion that Mr. Buckingham’s bill would not remedy the evils which operate against the good government of merchant vessels. Amongst other things unprovided for, there was nothing to protect the master against the acts of insubordination, or against the desertion of an ill-disposed crew, nor did it secure the crew against the inhuman treatment of a savage and tyrannical master.

“We would be understood to speak of these things as omissions merely, in Mr. Buckingham’s bill; and not in derogation of his laudable endeavours to benefit the merchant service by legislation; but legislation which fails to reach such potent evils, will certainly be attended with very trifling advantage.

“Of the inconvenience, expense, and sometimes peril, that masters of ships are often subject to at sea, and in foreign ports, from the

irregularities of seamen, enough may be gathered from the frequent letters of our correspondents to show how the remedy should be applied; and the Criminal Courts of late (we are sorry to say) have given undeniable testimony that something is wanted on the other side. What that something is, may probably be apparent from the following dreadful example.

“ At the last session of the Central Criminal Court, Richard Edwards and John Woodcock, the master and mate of a merchant vessel, were tried and sentenced to transportation for life, for the manslaughter of a lad of the name of Nance, on the high seas. This offence, which is, in all its details, utterly a disgrace to a civilized nation, was perpetrated by a system of prolonged and brutal persecution, nothing inferior in the severity of any of its repeated acts of violence, to the ancient punishment of keel-hauling, with this addition, that after the towline, the tricing-line, and the hand-spike had done their work, the victim was seized up in the weather rigging to dry, and required to give a test of his endurance by singing a song.

“ It must be supposed that the lad had done something monstrously amiss,—had been guilty of some terrible act of mutiny, or breach of discipline,—to induce so cruel a punishment, the fatal consequence of which is called a manslaughter. No,—poor fellow; he had but *spilled a pint of coffee*.

“ Will any one that reads this sad tale say that the mercantile marine of this country needs no laws to govern it? Members of the House of Commons cannot, surely, with the reports of such enormities as those of Edwards, Woodcock, and Cannel, still ringing in their ears, hesitate to entertain the subject as one of national importance. We are of opinion that neither of these cases would have occurred under better legislative provisions. We therefore invite our more powerful contemporaries, who are so zealous in crying down corporeal punishments in the army and navy, to join us in our endeavours to remove the far-greater abominations that are to be met with in the merchant service.

“ It appears that Captain Edwards and his mate are both under twenty-one years of age. Could the owner find no more experienced men of certified service and character to fill these offices? This is the natural question that arises upon a review of the case. Yes, we say, if he had been so disposed. Then the criminals were placed in their responsible situations by the influence of interest or connexion? To be sure—the owner had a right to entrust his ship to whom he thought fit; it was his property; but the lives of the crew were not his property, he had no right to peril them by the election of a person to represent his interest, who was unqualified by his professional inefficiency, or his intemperance, to have charge of theirs. He had no right?—yes, the law allows it. The crew have no voice in this, nor should they; but the law should speak for them. Again, we have a person in charge of a ship, with authority—an undefined one—to correct his crew, if necessary for the safety of his trust, himself being deficient in discretion, forbearance, and humanity, the possession of which were so essentially necessary to qualify his holding authority at all.

“ It was thus in the case of Cannel, as well as that of Edwards.

They, indeed, received characters for humanity, upon the better proof of their lacking it; but could any investigation, worthy the name of one, have preceded their several appointments? Were any testimonies given of their discretion and judgment? Certainly not:—the owners never contemplated it as probable that their captains would construe debility to be mutiny, or “spilling coffee” to be a dangerous breach of discipline; the owners never suspected that their captains considered moderate correction to be knocking men down with tail-blocks, or tricing apprentices up, head downwards, to the gaft. The captains undoubtedly understood that their crews were to obey them; and in default, that they were to enforce obedience. Who can wonder at the results?

“How different every thing is in the navy—every thing is understood there. By a late regulation, a young gentleman may not be sent to the masthead; yet in a merchant ship an English boy may be beaten, towed overboard, tied up by the heels—anything, so the punishment be short of death; but *then* it’s ‘manslaughter.’ Such acts would no longer be heard of, were the law to investigate the character of masters, define for them the precise meaning of ‘moderate correction,’ determine what amount of it they may inflict to restrain the irregularities of a crew, and instruct the crew in what they are to be obedient.

“The recorder, in passing sentence upon Edwards, and his mate, remarked with much force—‘I have thought it right to call you up apart from the other prisoners upon whom I have just pronounced the same sentence which I am about to pass upon you, because it is of importance that it should be known to those *who have the command of ships, that, under the colour of discipline, they are not to inflict unnecessary, wanton, and unlawful punishment upon those under their control, when distant from the shores of their own country, friendless and unprotected, and that rash and improper chastisement ought not, must not, be resorted to.*’ We would that every master of an English ship had been within hearing of this humane and upright judge.”

CENTRAL CRIMINAL COURT, April 7.—MURDER ON THE HIGH SEAS.

(Before Mr. Justice Littledale and Mr. Justice Coleridge.)

Richard Edwards, 21, and *John Woodcock*, 20, were indicted for the wilful murder of Alexander Nance, on the high seas, within the jurisdiction of the Admiralty of England.

Mr. Adolphus conducted the case for the prosecution; Mr. C. Philips and Mr. Clarkson appeared on behalf of the prisoners.

Jeremiah Sullivan—I was a seaman on board the ship *Ada*, which sailed from St. Michael’s the 23d February last; the prisoners acted as a captain and mate; Edwards was captain, and Woodcock mate; there were six persons on board, including the prisoners, namely, the deceased, Alexander Nance, who was about 16 or 17 years of age, a seaman named Harley Petrie, a passenger, and myself; the deceased was cook and cabin-boy; and on our commencing the voyage was in good health, but was disfigured in his face and skin; the prisoners from beginning of the voyage ill-used him by beating him with ropes, blocks, and sometimes with the glasses, and with handspikes, as well as by

towing him overboard; this was done by fastening ropes to his legs, and and pulling him through the water.

I took the wheel at eight o'clock on the morning of the 27th February, and the prisoners and Harley then went down to breakfast; after they had done they came up again, and the mate then relieved me; I went forwards, and on my going into the galley I found my coffee kettle half empty; I told the captain that the boy had drunk the coffee, or that he had suffered it to boil over, when he directly said to Nance, "That's a good towing overboard for you, my man;" he then directly took a handspike from the windlass, but I walked off with my coffee, and with the passenger went below; while we were at breakfast, I heard a screeching upon deck, and I looked up through the skylight and saw the boy hanging up by the legs to the gaff, his head hanging down; the captain and mate and the other seamen were then only on deck, but I could not see what was doing by them; the gaff is as high up as the ceiling of this court (about twenty-five feet); when I reached the deck the boy was still hanging up, and was swaying about with the heaving of the vessel, and falling against the masts and rigging; after he had been hanging about a quarter of an hour altogether, he lifted himself by his strength, and succeeded in getting his head upwards; Harley then took the end of the rope, and was lowering him down, when the mate called to him to let go the rope, and let the boy lower himself; Harley did so, and the boy was then coming down gently, when either the captain or the mate ordered him to let go the rope, but he did not do so; when the boy had reached the foot of the sail, the mate went up to him, and put him out over the side into the water; the captain at the time was on the deck, and on the lee side with the mate; the boy held on by the gunwale of the vessel, at first, to save himself from falling into the water, when, the mate went over the side, and kicked his hands until he let go his hold, and fell into the water; the vessel was on her way at the time, and was going three or four knots an hour, and the boy was towed for about five minutes; he then got on board, but while he was coming on deck, the mate took two or three buckets of salt-water, and threw them in his face.

I then went down to the cabin, to clear away the breakfast things, and on my return to the deck, saw the boy tied up in the fore-rigging, his arms and legs being lashed up to the rigging; the boy was crying out loud, and begged me to take him down out of the rigging, and I told the captain that it was a shame that he should be kept up there, when he said it was no business of mine, for the boy did not belong to me; I replied, that when we got to Falmouth some persons might take the boy in hand, as he was so disfigured, and play h—ll with him, but he declared that he did not care about it; at about ten o'clock, as I should guess, the mate ordered me to go and get the dinner, and I went away, leaving the boy still in the rigging; he remained there about an hour; while I was in the galley the blood dropped from his face and legs on me, as he hung just over me, and I in consequence refused to remain there; the mate then directly came to me, and taking the bellows from me, called me sulky, and ordered me to go to bed; the boy continued the whole time to call to me to take him down, but the prisoners declared that he should stop there until he had sung a song or a hymn; the mate told him to sing the sailor's hymn, and he did so,

and the mate then gave me his knife and ordered me to go and cut him down: I obeyed his directions, and when the boy came on deck, the marks of the rope yarns were on his arms and legs, where blood had gushed out; the boy was then ordered to go and take some oranges and some bread which were on the deck for his breakfast; the bread was green and mouldy, and was the sweepings of the locker; the boy, however, took it and sat on his bed, which was on the deck, eating it. Harley afterwards gave him some rum, and he drank it, and the captain ordered him to go to sleep; he lay down then, until about one o'clock, when he had dinner, and the captain afterwards went forward to him, and said, "I'll wake him now, and have a bit of a lark with him;" he awoke him, but when the boy got up, he staggered about the deck, and was unable to stand; the boy had before taken off his wet trousers by order of the captain, and he had nothing on but two shirts; the boy had good dry clothes, but the prisoners had refused to let him wear them, as he had at the beginning of the voyage thrown some old clothes overboard; the boy, besides, could not see with one eye, and I took a rope yarn in my hand to frighten him away from the fire, lest he should burn himself; he was, in fact, quite foolish; I had never known him so before; the captain told him to go and clean the binnacle lamp and the sconce, and he went near the fire to do so; there was soon after a smell of fire, and the captain directed me to see what it was, and on my going to see, I found the boy sitting on a bucket so near the fire that the paint of the bucket was blistering; I lifted him from the bucket, and the captain afterwards came forward and said, "That is a good towing overboard for you;" he then took him to the larboard side and made the fore-brace fast to him, and he called me to go and assist him in putting him over the side.

I told him, however, that I would not have anything to do with it, and I went to the other side of the boat, by which I was prevented from seeing what took place; but I afterwards saw the boy overboard in the water; the captain was standing by the side of the vessel, and when the boy was towing through the water he lifted him up out of the sea and then threw him in again, and he continued this for about ten minutes; the boy at length frothed at the mouth, and the whites of his eyes turned up; and I went to the weather side of the vessel; the captain soon after called for some one to assist him in taking in the boy as he was unable to do so himself, and Petrie, the passenger, went and helped him; it was then my turn at the wheel from four to six; the boy was lying on the deck, and was unable to speak or stand, and he lay there for about an hour and a half, but about half-past five the mate came and lifted him up; he was unable to stand, and the mate then took a new mop which was at the pump, and with it he beat him with both hands on the back and head, until the head of the mop fell off; the captain was along with him at the time, and called out, "Give it to him;" after the head of the mop had fallen off, the mate beat him with the handle over the jaws and back, and he called out, "You b——, I will kill you now before you get home;" he could not then move or speak, and while I was at the wheel I saw the mate take him by the leg and drag him forwards, but I did not afterwards see what happened; at about six o'clock, however, I again saw the boy, and he

was lying with his breast across the windlass bits, and was groaning; the mate was standing at his side, and said, "I hope that will be the last groaning and sleeping he will have on board this vessel;" I went below until eight o'clock, and when I came up I found the boy still lying in the same position; I, in consequence, went aft, and told the captain that he was in a bad state, and was nearly dead, when he said, "You come to tell me that, why don't you go and cover him?" I went forward, and having arranged his bed by the bowsprit, I placed him in it; I spoke to him, but he did not answer me, and I felt him all over, and he was quite cold; I heard the rattles in his throat, and remarked to one of the men that he was dead, and the captain, who was standing by, heard me; I then went forward again, and thought his skin seemed rather warmer, and I told the mate so; he desired me to go and feel his pulse, but he had none; the mate then told me to go and take off his wet shirt and put on a dry one, which I should find in the boy's bags; I was doing so when the passenger came from the forecabin, and having felt the boy's skin all over, said he was dead. The boy at that moment drew the last breath and died.

The corpse was afterwards taken down below by direction of the mate, and was covered with bed clothes: I went down to the captain afterwards, and told him that the boy was dead, but he said he hoped not, and that he would recover again; it was about nine, or half-past nine, when the boy died, and the body remained below until about half-past twelve; the mate ordered me to go and bring it up, with the passenger, but I refused, saying, I had not the heart to do it, and he and the passenger brought it up; the body lay on deck until ten o'clock the next day, when I saw that some part of his face had been eaten away by the mice; the passenger and Harley sewed him up in his bed, but the former refused to heave the body overboard until the captain had read a chapter of the Bible over him, and this having been done, the body was buried; the vessel was at the time in blue water, and we were out of sight of land; the weather was very hot; I and the boy both sailed on the outward voyage with the vessel; we reached Falmouth at the beginning of March, and the passenger went before the mayor on the 11th; the captain having heard of this, suggested to the mate that they should take the vessel and make off to sea with it, but the mate refused to do so; the captain afterwards sent Harley and me ashore to tell the passenger to go on board, but he refused to accompany us, saying that the captain must come to see him; the captain in consequence went on shore and saw the passenger; they walked together for some time, and I heard the captain say to him, "Tom, you have ruined me;" to which the other answered, "It is no more than is right;" I afterwards also saw the captain offer him a sovereign, but he declined to take it, and the captain told him not to go before the mayor again unless they should send for him; I suggested to the captain that the passenger might take the sovereign from me, and he gave me the money, saying at the same time that he would give another if he would plead in the mate's behalf; the passenger had been cast away on the Western Islands, and was sent home by the English consul; he had no property or money of his own.

Cross examined by Mr. C. Philips—I am sure the expressions I have attributed to the mate and captain were used by them; I am sure also

that the statements which I have made with regard to the state of blindness of the boy, and of my having been obliged to keep him from falling into the fire, as well as of the expression used by the captain to the mate at Falmouth, are true; I never beat the deceased boy myself, but I have, in fun, threatened to heave him overboard; the mate beat me on the voyage, but I do not dislike him for it; I bear him no ill will: he struck me often, but I never resisted; I may have disliked him at the time, but I have since borne him no malice.

Thomas Petrie—I was taken on board the ship *Ada*, at St. Michael's, in February last; I was sent home by the English consul, having been shipwrecked; I was up to that time entirely unacquainted with the captain or any of the crew; the deceased boy was ill-treated every day by the captain and the mate, and was not beaten merely gently, as for correction, but violently; one of his eyes was injured so much that he could not see with it, and had he lived, he would have lost the sight of it: the witness proceeded to describe the course of maltreatment spoken of by the last witness as having been adopted to the boy by the prisoners on the 27th of February, and, which, it was alleged, caused his death; his evidence, however, was different from that of Sullivan, in some respects; he deposed that the boy, when hung up in the rigging by his heels, never changed his position, and that subsequently, when the mate attempted to put him overboard, he did not fall into the sea, but the mate threw several buckets of water over him while he was hanging on to the vessel, after which he was called in and beaten up the main rigging, where he was tied and kept until he had sung a psalm; the rum, which was subsequently given to him by Harley, made him heady, and the captain having remarked it, beat him violently, and said he was drunk; afterwards, however, while the boy was cleaning the lamps the captain ordered that he should have more rum, which was given him by Harley, and the captain then beat him again, for drinking it, with a rope's end; the boy afterwards appeared to be stupid from the effect of the beating, joined with the liquor; after he had been immersed in the sea, as already described, and had lain on the deck for an hour and a half, the mate dragged him forward by the heels, and threw him on the windlass, after which he struck him on the face with his fist several times, threw him over the windlass on to the deck, struck him repeatedly with a large rope's end, and finally jumped upon him. The only words the boy uttered during the whole of this time were, "Oh! Jack!" meaning the mate, when he jumped upon him. The captain was by all this time, and the mate, when he last jumped on the boy, said, "There, I hope that will be your last groan."

By the jury—The boy was a stupid boy, but was beaten so; he was crippled before he (witness) went on board, from previous ill-treatment.

The witness further stated that the vessel having arrived at Falmouth on the 9th of March, he went before the mayor on the 10th; he saw the captain afterwards, who told him he had done a terrible job for him, and offered him some sovereigns in his hand, and told him to take them and say nothing about it; he, however, at first refused to accept them, saying, he had made the report, and must go through with it, and adding that he had been uneasy ever since the death of the boy;

but at length he consented to receive a sovereign, which was offered to him by the captain, upon condition that he should not say so much against him, and it was handed to him by Sullivan, whom they had met in the course of their conversation.

Cross-examined by Mr. Clarkson:—I did not see that there were any appearances of scrofula on the boy; I do not know how long he was tied in the rigging; he was cut down directly he had sung the song, and he had been up only about a minute or two before; the song was, I believe, the "Sailor's-hymn;" he sung it in his usual tone of voice, and sung it very well; he was standing in the rigging fastened to the shrouds, and he had nothing but his shirt; it was fine temperate weather at the time; I cannot tell how long he stopped in the shrouds, as I had no watch, but it was about ten minutes altogether.

John Harley, a seaman on board the vessel, deposed that the boy during the voyage out had also been ill-treated by the prisoners, having been beaten and thrown overboard several times; he deposed, with reference to the proceedings on the 27th Feb., that it was the captain who had hauled him up to the gaff with his head downwards, the witness having previously, by the captain's orders, lashed his legs together. His evidence was corroborative of that of the last witness, as to the mate having thrown the water over him with the buckets, but he declared that the boy was afterwards tied up in the rigging for an hour and a half; the witness gave him some rum, but he only drank about a table-spoonful of it. The remainder of the evidence of the witness was to the same effect as that of the other witnesses.

Cross-examined by Mr. C. Phillips—Petrie always said he meant to inform about this, but I recollect his saying that if the captain would pay him wages or give him 5s. he would say nothing about it; he, however, still meant to inform; he said this the day before we arrived at Falmouth.

This closed the case for the prosecution.

Mr. C. Phillips then proceeded to address the jury for the defence, and after a most eloquent and powerful speech, a number of witnesses were called, who gave the prisoners most excellent character for humanity and general goodness of disposition.

Mr. Adolphus then claimed his right to reply, which, after some discussion on the unusual nature of the application, witnesses to character only having been called, was allowed.

Mr. Justice Littledale summed up at very considerable length, and the jury, after deliberating for about five minutes, found the prisoners guilty of manslaughter only.

The case occupied the attention of the court for nearly eleven hours and a half.

IMPORTANT TO PROPRIETORS OF STEAM PACKETS.

S. G. 27 Mar.

IN the Jury Court, Edinburgh, on Tuesday last, the case of Dunlop and Co. against Lambert and others, owners of the steam-packet Ardincaple, came on for trial before a respectable jury.

In this case, which will be found of great interest to proprietors of steam-vessels, the following issues were sent to the jury:—"1st. Whether on or about the 31st day of August, 1833, the pursuers

shipped a puncheon of spirits on board the *Ardincaple* of Newcastle, a vessel belonging to the defenders, for the purpose of being conveyed to Newcastle, and delivered to Matthew Robson, Collier-row, Houghton-le-Spring, care of Mr. Lattimer, Newcastle? And, 2d. Whether the defenders wrongfully failed to deliver the said puncheon to the said Matthew Robson, and are indebted and resting owing to the pursuers in the sum of £75 9s., or any part thereof, with interest thereon, as the value of the said puncheon of spirits?"

The facts of the case, as they appeared in evidence, were as follow: Mr. Robson, a spirit-merchant, near Newcastle-upon-Tyne, commissioned from Messrs. William Dunlop and Company, wine and spirit merchants in Edinburgh, a puncheon of whisky, which was shipped on the 31st of August, 1833, by the *Ardincaple* for Newcastle. A bill of lading, together with an invoice of the goods, containing charges for freight and insurance, was duly transmitted to the purchaser, who thereupon accepted a bill for the amount. In the course of the voyage from Leith to Newcastle the *Ardincaple* encountered a severe gale, by which she was so disabled that it became necessary to throw overboard the greater part of the cargo, including the puncheon of spirits in question. On this being made known to the pursuers, it seems that they transmitted a second puncheon of whisky to Mr. Robson, but whether in lieu of the other or not did not appear. The present action was therefore brought against the owners of the steamer by Messrs. Dunlop and Co., who averred, that having charged insurance (though no policy was executed) the spirits were at their risk until landed at Newcastle. They relied, moreover, on the admitted fact, that the puncheon had been stowed on deck, a mode of stowage which they contended rendered the owners of the vessel liable for the loss. No evidence was led by the defenders, and from that of the pursuers it appeared that goods so stowed, if thrown or washed overboard, were, according to mercantile usage, to be made good by the ship. This proof of the usage seemed, however, to refer rather to the case of sailing vessels than to that of steam vessels, in which, as they sail on a level keel, have spacious decks, and are propelled from below, the practice of carrying large quantities of goods upon deck appeared to be universal. No evidence, as has been said, was adduced by the defenders, who contended, that as, from the fact of freight and insurance being charged against the consignee, he was truly the owner of the goods, and the pursuers were not entitled to insist in an action for recovery of the price; that, on the other hand, if the latter insisted in the action as insurers, a loss from improper stowage not being a risk for which, as underwriters, they could have been liable, they were then not entitled to recover from the defenders.

This view of the defenders as to the pursuers' title to insist in the action, was adopted by the Lord President in his charge to the jury, who, after a long consultation, returned the following verdict:—

"They find on the first issue that the defenders were liable for the loss of the puncheon of whisky, their servants having placed it on deck without authority from the shippers, and therefore find on the second issue that the defenders wrongfully failed to deliver the puncheon to Matthew Robson; they not having stowed it in the hold, as they were bound to do, prevented his recourse on the underwriters.

On the last part of the second issue they find, that the defenders are not liable to the pursuers for the value of the spirits, because they were not at the time owners of the goods in question, their invoice showing that their right to this whisky ceased at the time of shipment."

Mr. Webster, makes the following observations, on the natural productions of the island of St. Catherine, in his interesting account of the Chanticler's voyage:—

Amid the luxuriant beauty of vegetation at St. Catherine's, we perceived the loss of the coco-nut and many of the palm tribe, which had so much delighted us in the tropics. The woods, however, produced still a few species, and one of the coco-tribe happened to be in full flower; and it was an object of attraction and admiration to us all, from its grand and majestic appearance, standing aloof in character and aspect from the surrounding vegetation. From the summit of its head hung pendent immense clusters of small yellow flowers, forming dense bunches of more than a yard in length, and containing several hundred flowers. Over each elegantly drooping spadix stood an erect and stately spathe, arched and vaulted, and of three feet in length. When we consider that several of these gigantic bunches were appended to the same tree, it will readily be conceived that they formed a conspicuous feature in the scenery; and the effect was heightened by hives of bees humming round and clustering on every flower. The fruit is a small sweet and pulpy drupe, about the size of a plum, each bunch of flowers yielding about a bushel of fruit. The erect spathe, which we have spoken of, is strong, woody, and boat-shaped; and is used as a cradle for infants, and as a cart to drag little children in. The tree itself yields a gummy matter, and the kernel of the nut a fine oil. Those who visit the tropics cannot fail to notice the many immediate uses of the various products of the palm, and none more striking, perhaps, than the ready-made cloth they yield—a peculiar characteristic of this noble tribe. In some cases, as from the base of the frons of the coco-nut tree, it may be stripped off in considerable lengths, so as to afford no mean or despicable wrapper; for which purpose, indeed, it is used by the natives in the Brazils, &c.

The analogy to cloth is very great, for it has a warp and weft. Other palms yield it of a softer and closer texture, and the spathe of one is so perfect as to form small sacks, caps, and filtering bags. And this cloth-like texture affords the best illustration of the vegetable tissue, and exemplifies in a simple and obvious manner the arrangement of the fibres in the general structure of plants. The formation of wood and bark is on the same principle, varying only in consolidation; and the maceration of the bark of trees develops the truth of the assertion.

Another feature of the vegetation of these realms is their fecundity, and the struggle for existence. All is full, even to superabundance and excess: some are climbing up the loftiest trees, and pushing through every aperture to gain the light; others are sending down long stems to take root in the earth—having begun their existence at the summit, and obtained the eminence from birth, are in danger of

being starved in their aerial station; some are engrafted on the branches, and bloom and die thereon—garlands of parasitic flowers adorn the trees—parasitic ferns encumber the stem; yet, amid all the bloom and fragrance they emit, there is a deceitfulness about them—they destroy their supporting friend by their smiles.

The agave vivipara, or viviparous agave, was particularly abundant at St. Catharine's; and the ground around them was studded with the younger plants. The larger ones were loaded with bulbous buds ready to vegetate, and they were dropping from the stem with every breeze. The roots of this agave are gathered and frequently sold as sarsapirilla; the fibres of the leaves form a strong and useful cordage, but not so durable as hemp in water.

It is somewhat remarkable, that most of the plants whose leaves furnish fibres for cordage, belong to the same class as the agave, and are hexandrous, as the celebrated phormium tenax, or New Zealand flax, and several of the bromelias, which yield excellent cordage. And there is another property belonging, in an especial manner, to some of the hexandrous plants—that of being bulbiferous. Not only have we the extraordinary agave vivipara, but the allium bulbifera, the liliium bulbiferum, the large bulb bearing crenum, the ornithogalum bulbiferum, and the surprising bulbs, or air potatoes, as they are called, of the dioscorea bulbiferum, or the bulb-bearing yam. Other instances might be adduced of this tendency to bear live or bulbous buds on their stems, and thus supplying the place of seed; for which, however, no obvious reason can be assigned.

The ferns were very numerous and beautiful at St. Catherine's; in fact, I had never gathered so rich a harvest of them before—I collected fifty specimens of them in a day. I tended them with care, and put them by when I thought they were sufficiently dry. About five weeks afterwards, I had occasion to look at them, and found, to my surprise, the papers excessively mildewed; but the plants themselves appeared particularly fresh, and there appeared an evident motion in the dust, or mildew, upon the papers: thinking it might proceed from some animalcule. I took a glass and found the motion to proceed from the bursting of the capsules and the ejection of the seeds.

I stood for some time witnessing the exhibition, and I now perceived that what I had originally mistaken for damp and mildew was only the exquisitely minute atomical seeds of the ferns; nay not the seeds, but the impalpable capsules, which contained myriads of seeds. How wonderfully minute! The colours were various, some being bright yellow, others deep brown, and many sooty coloured.

MERCHANT SEAMEN'S ACT.

Mr. BUCKINGHAM's bill, through a technical informality, has been lost. In our remarks on a provision of it in our last number, (p. 257,) through typographical blunders we were made to say nonsense. What we intended to say, was simply that captains of ships have neither inclination nor time to establish *observatories*, and we intended also to add, that their examiner in navigation and nautical astronomy ought himself to be a seaman. We apprehend that the Astronomer Royal has enough on his hands without undertaking the duties of a member

of the marine Board: at least, if we may judge from the duty of Superintendent of the Nautical Almanac being separated from that office.

SIDMOUTH HARBOUR.—Active means are in progress for immediately commencing this highly important undertaking. The engineer, Mr. Price of London, has made all preliminary arrangements for widening and extending the esplanade onwards to the site of the harbour, the excavation for which in the Chit Rocks to the westward of the town have been begun. A tunnel will be carried through the Cliffs to the eastward and a temporary railway extended through the same and along the seaward side of the town, for the purpose of bringing down some of those masses of rock, which lie under the cliff at the Hook Ebb Point, for the construction of the pier and breakwater. The birth-day of the Princess Victoria, May the 24th, has been fixed on for laying the foundation stone of this harbour. A representative of her Imperial Highness the grand Duchess Helena of Russia will lay the stone, and it is expected to be done with due masonic honours.

THE IRISH HERRING FISHERY.—A complaint of the disappearance of fish from their accustomed haunts is made with respect to the herring, the shoals being said to have left, wholly or partially, several places where heretofore they were abundant. The herring is a fish of rather uncertain movements. It is known to have deserted, for a time, bays where it has for seasons abounded, and then again to re-appear in large quantities. No cause worthy of confidence has been assigned for the fact, the whole history of the herring having been involved in obscurity. It is an opinion daily gaining ground among naturalists, and may nearly be taken as established, that the imputed annual movement of the shoals from north to south is an error; and that the herrings and all (so called) migratory fish merely leave the deep waters and approach the shores for the purpose of spawning. This latter opinion rests on a strong analogy with the known habits of salmon in that particular; also on the certainty that herrings are taken on some other parts of our coast at all times of the year: and it is strengthened by the remarkable fact, that the remains of the herring are not found in the stomach of those whales which are killed in high latitudes, though they are in that of the species which are found on our own coast. While the grand facts are thus in dispute, it seems vain to attempt an explanation of the more partial and irregular phenomena. Fishermen, however, are apt to complain of the shoals being less abundant on the stations than formerly. But, though certain bays may be thus partially affected, the herring is always to be found in the open sea during its season; and boats which have stood out into the deep water have returned laden, when the bay fishery utterly failed.—*Parliamentary Report.*

LIGHT ON CAY SAL.—We understand that the new Lighthouse, lately erected by the Spaniards on the Cay Sal Bank has been blown down! We will give particulars in our next.

FALMOUTH, APRIL 23.		Last Packets sailed.	Next Packets due.
Lisbon . . .	} Every Saturday	H.M.B. Hope, April 17.	H.M. B. Nightingale, [Ap. 24.]
Madeira . . .			
Spain . . .	} First Day of every month	H.M.S. Firey, April 5	H.M.S. Fiery, May 28
Gibraltar . . .			
{ Malta, Greece, Corfu, Egypt, and India . . .			
Madeira . . .			
Brazil and B. Ayres } America . . .	First Tuesday in each month	H.M.B. Ranger, April 7	H.M.B. Spey, May 1 H.M.B. Reindeer, June 10
{ Jamaica, Leewrd. Islands, & Hayti } La Guayra . . .	First Wednes. do.	H.M.B. Reindeer, Ap. 8	
Mexico & Havannah } { Jamaica, Leewrd. Islands, & Hayti } Carthagenia . . .	First Day in every month	H.M.B. Magnet, Apr. 3	H.M.B. Lyra, May 26
	15th ditto . .	H.M.B. Seagull, Ap. 17	H.M.B. Swift, Ap. 22
	15th ditto . .	Lord Melville, April 17	H.M.B. Goldfinch, May 12

NEW BOOKS.

VOYAGE AU TOUR DU MONDE. *Voyage round the World. By order of H.M. the Emperor Nicholas the First, in the Corvette Seniavine, in the years 1826 to 29, by F. Lutke, Capitaine de Vaisseau, &c.*

We take some degree of blame to ourselves in not having before noticed the voyage of the *Seniavine*, notwithstanding the demands on our space; but our sketch of another, the projected one of the French, under Captain D'Urville, may vouch for our better intentions on these matters in future. But to the work before us. In some future numbers we shall go into further particulars, and content ourselves for the present with extracting the following summary of the results of this expedition as given by Captain Lutke.

"In Behring's Sea the positions of the most important points of Kamtchatka to the northward of Awatcka Bay have been determined astronomically; the heights of many volcanoes have been measured; the isles of Karaghinsk, previously quite unknown, also the island of St. Matthew, and the coast of Tehouktches Land, from East Cape nearly to the entrance of the river Anadyr, have been critically examined, and the position of the Pribyloff, and many other islands, have been determined.

"In the archipelago of the Carolines, the space occupied from Ualan Island to the Oraluthy group, (M'Kenzie or Egoy islands,) has been examined; twelve have been discovered, and in all twenty-six groups or detached islands have been described. The Caroline archipelago, hitherto considered very dangerous, will in future be as safe to navigate as the best known parts of the globe."

The islands of Bonin Sima have been described. Besides these, ample particulars have been obtained for the determination of the

geographical position of those places at which the ship stopped, as well as for a correct description of the currents, tides, &c.

An atlas, containing more than fifty charts and plans has been published of this voyage, all of which are got up in a very creditable style, and having the French translation of the Russian names, is thereby rendered more generally useful. We shall return to further particulars of this voyage hereafter.

A COMPANION to the *Ship's Medicine Chest*, being a short Treatise on the Diseases of Seamen, and others, in Tropical Climates. By W. G. Taddy, Surgeon. Highley, Fleet Street.

The author of this useful little volume is an experienced surgeon of the East India service, late of the *Mermaid* and *Royal George*. So satisfied are we of the value of the information it contains, that we had even contemplated a paper on a similar plan for our own pages. The author, after pointing out the danger of neglecting the medical department in merchant ships, gives a short account of the symptoms attending each disorder, followed by the best mode of treating it. He has wisely kept out of the way all technical scientific terms; and having thus rendered his advice available to all hands, we consider it as doing them a service by pointing it out to them.

THE LIFE OF HENRY THE EIGHTH, founded on authentic and original Documents, (some of them not before published,) &c. By P. F. Tytler, Esq., F.S.A. Simpkin and Marshall.

We perceive that no pains have been spared to improve the eventful history of this reign by a reference to state-papers, and other sources, including original correspondence of Henry the Eighth to the time of his death. The author has also kept in view the introduction of literature at this period into England, and considers that the light of reviving letters was intimately connected with the recovery of revealed truth. These are sterling recommendations, which, with the usual talent employed on the Edinburgh Cabinet Library, will render this volume as desirable as the preceding.

THE NATURALISTS' LIBRARY. Vol. VII. *Ornithology. Birds of Western Africa*, by W. Swainson, Esq. Highley, 32, Fleet Street, London, and Curry, Dublin.

We have already expressed our entire approbation of this little work, both in its style and quality. The plates are carefully and neatly coloured; and there is a character about it, which stamps it, as belonging to the first order. The present volume contains a memoir of Bruce, and 32 plates of specimens. When we reflect on the numerous opportunities that our naval friends have, of pursuing these studies, on the very coasts where such specimens abound; we can assure them, that they lose not only much gratification by not following them, but also, very frequently the honor of adding new specimens, to this interesting branch of science. We cordially recommend to their attention, the volumes of the "Naturalists' Library."

JACOB FAITHFUL. *By the Author of Peter Simple, &c. In three volumes. Illustrated edition. London, Saunders and Otley.*

We are glad to perceive, that the "striking improvement" promised in the illustrations of these novels has been verified, we may say, to the letter. Those of Jacob Faithful are well drawn, and handsomely coloured, and become powerful recommendations of these interesting works.

NEW CHARTS.

WEST INDIES. *Sheets 8, 9, and 10. Size 23 by 18 inches. Admiralty. 1837. Admiralty.*

THESE three sheets belong to that series of charts which we noticed a short time ago as being intended to comprise the whole of the West India coasts and islands. They are all very satisfactory, and, though based on the old Spanish surveys of the *Tierra Firme*, appear to have been greatly improved by the insertion of much and recent information. The first includes the coast from Trinidad to Los Roques, the second from thence to Cabo la Vela, and the third from Cabo la Vela to Cayo Ratones. The scales are about four inches to the degree of longitude, and each chart is enriched with a collection of small plans, so that the lover of cheap charts will find that he has got his money-worth.

In sheet 8 the coast of the main is entirely Spanish; the island of Trinidad is principally from Captain Columbine, as also the plans of the bays of Chaguaramus and Carenage; the plan of St. George's, Grenada, is from Captain Elliott's, published by the Hydrographical Office. In sheet 9, the island and harbour of Curacoa are from the Dutch surveys; Port el Roque from Lieut. Johnes's survey: and, in sheet 10 various additions to the Spanish plans have been made from Captain Tait, in the plan of Santa Martha, and from Capt. Wellesly, in that of Cartagena. The rest are entirely Spanish, excepting the harbour of Tucacas in sheet 9, which is from the survey of Mr. H. J. Ennys, of H.M. ship *Larne*, whose description of this place appeared in our last volume, (No. 54, p. 455.)

PLANS OF THE RIVER ST. LAWRENCE, *below Quebec. Surveyed by Captain H. W. Bayfield, R.N., F.G.S. 1827, 1831. Size, twenty-three inches by eighteen. Admiralty.*

We have here some of the results of the arduous and difficult survey which has been several years going forward under that valuable scientific officer, Captain Bayfield, of the Royal Navy. The two first sheets of the series, on the scale of two miles and a half to the inch, include the portion of the river between Point des Montes and the Saguenay, the Bersimis river dividing them half-way; the two next, on the scale of a mile to the inch, extend from the Saguenay to Point Ouelle, the first including the whole of Hare Island, and the three next reach from Point Ouelle to Quebec. The first of these last contain Isle aux Coudres, and part of the Seal Islands; the next contains Crane Island, with the traverse; and the last, which reaches to Quebec,

includes the whole of the Isle of Orleans. Until the survey of Capt. Bayfield was completed, our information of this river may be said to have been made up of shreds and patches; even the pilots of Quebec were in such complete ignorance of many parts, that they have petitioned for the early publication of the survey. The plans before us bear ample testimony to the zeal and ability of their author, and will prove an invaluable boon to navigators frequenting the St. Lawrence.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain.—C. Pearson.

Commander.—J. Paget.

Lieutenants.—J. G. Harrison, J. Lowry, J. T. French.

Masters.—W. J. Wood, C. Graham, A. S. Vauzetti.

APPOINTMENTS.

Rear Admiral.—F. Warren, Superintendent of Plymouth Dock-yard.

Captains.—J. Clave, Superintendent of Chatham Dock-yard, vice Sir J. A. Gordon; J. H. Plumridge, to Packet Establishment, Falmouth; E. Collier, 18.

Commanders.—J. Shepherd, 17; H. S. Nixon, 19; J. Harris, 20; J. Paget, 21; T. P. Robinson, C. Rich, J. F. Appleby, J. M. Bate, R. Morgan, C. Moore, W. Tucker, C. Frederick, R. S. Triscott, 25.

Lieutenants.—E. Roberts, 1; R. F. Bunbury, 2; T. Hope, 3; C. W. Lindsay, 7; M. Peppin, 12; R. W. Oliver, 16, to command; W. Lowrey, 17; P. White, Assist. Dock Master of London Docks; J. T. French, 22; P. Chatwode, 26; H. Stroud, 27; R. Stopford, Flag of Adm. Sir R. Stopford, W. Prouse, 30; W. Dickey, 34; W. H. Hill, 43; J. Harrison, 22.

Masters.—R. A. Newman, 17.

Surgeons.—D. P. Williams, 5; J. West, 22; P. Reid, 17.

Pursers.—J. Poad, 4; D. C. Colls, 17; J. Goldsmith, 24; J. Breaks, Sec. to Sir John Louis, 24; J. London, Sec. to Adm. Hon. Sir R. Stopford, G.C.B.

Chaplain.—E. J. Paget, 23.

Mates.—F. S. Tromlett, 10; R. Flood, 11; C. Forsyth, 13; C. F. Gorton, 14; S. G. Leigh, 15; C. F. A. Shadwell, 8; F. J. Diggins, 22; R. Duncan, 9; H. S. Hawker, 23; J. F. Coaker, 29; H. Ainslie, 6; R. Hopkins, 6; C. Taplin, 3; R. Edwards, 22; R. Floud, 11; J. Cashman, 31; J. Fitz James, 32; R. St. Aubyn, 33; W. H. Gennys, 35; A. Lowe, 2; T. H. Christian, 8; R. A. Oliver, 8; R. Duncan, 9; H. Veitch, 11.

Second Masters.—R. G. Willis, 16; D. Craigie, 22; J. Jackson, 11; H. B. Gule, 44; J. B. Cook, 44; R. Spence, 45.

Assistant Surgeons.—J. T. Metcalf, 6; E. Minchin, 11; A. B. McPherson, 11; J. S. Peddie, 13; J. A. Scott, 17; H. S. Robertson, 11.

Midshipmen.—J. R. Rodd, 8; J. Paterson, 9; Hon. J. Middleton, 22; R. C. Tatal, 6; G. Brine, 26; E. F. North, 8; E. K. Law, 39.

Volunteers, 1st Class.—Hon. F. Walpole, 22; W. C. Debere, 3; C. C. King, G. R. Lambert, R. B. Beale, T. J. Cust, H. G. Simpson, Hon. J. R. M. Byng, 8; W. J. P. Dashwood, V. J. Hickey, J. Beamish, 23; H. Parker, A. W. A. Hood, G. C. Campbell, Hon. P. F. Pillew, 2; E. H. D'Aith, F. L. Cotton, R. L. H. Warner, 10; G. O. Willis, J. H. Henderson, 38; G. W. Digby, H. Naghten, H. West, 39; R. Dew, E. W. Elton, 40; A. C. Birtwhistle, 27; E. G. Hore, 35; F. Roche, P. W. Darnell, 36; J. Wood, 2; A. Phillimore, 32; W. Amphlett, 41; F. F. Nicholson, 33; C. E. Rowley, 42; W. Wardlaw, 17.

Clerks.—H. R. Cole, 16, in charge.

Master's Assistant.—R. Crockford, 29.

[Vessels' Names to whom Officers are Appointed.]

1, San Josef; 2, Minden; 3, Sappho; 4, Hastings; 5, Comus; 6, R. Adelaide; 7, Russell; 8, Princess Charlotte; 9, Excellent; 10, Bellerophon; 11, Britannia; 12, Fairy; 13, Sparrow; 14, Seaflower; 15, Snake; 16, Fair Rosamond; 17, Sparrowhawk; 18, Castor; 19, Ringdon; 20, Brune; 21, Magnificent; 22, Larne; 23, Cornwallis; 24, William and Mary; 25, Coast Guard; 26, Pelorus; 27, Asia;

28, Victory; 29, Viper; 30, Active; 31, Thunder; 32, North Star; 33, Dido; 34, Water witch; 35, Carysfort; 36, Talavera; 37, Rodney; 38, Vanguard; 39, Seringspatam; 40, Hercules; 41, Inconstant; 42, Sapphire; 43, Saracen; 44, Royal Sovereign; 45, Howe.

Births.

On the 17th April, at Lamphey Court, Pembrokeshire, the lady of Capt. Laws, R.N., of a son and heir.

At Stakes Hill, on the 6th April, the lady of Lieut. W. N. Taylor, R.N., of a son, which survived only two days.

On the 15th April, the lady of W. F. Young, Esq., Lieut. R.N., of Hilbury Hall, near Atherstone, of a daughter.

On the 26th March, at Falmouth, the lady of Lieut. Smyth Griffith, of H.M. packet Magnet, of a daughter.

On the 17th April, at Torpoint, the lady of Mr. A. P. Brickwood, R.N., of a son.

On the 10th April, at Sheerness, the lady of Capt. Charles Paget, H.M. ship Howe, of a son.

On the 7th April, at Wilshall, near Alton, the lady of Commander George Dobson, of a son.

At Brighton, the lady of Sir Richard D. King, Bart., of a daughter.

Marriages.

On the 3d April, at Milan, Charlotte Leopoldina, second daughter of the late Admiral Sir R. Strachan, Bart., and G.C.B., to Count Emanuel De Zichy, Chamberlain to the Emperor, and Major of the Hungarian Guard, (brother-in-law of Prince Metternich). The bride was given away by her guardian, the Marquis of Hertford, K.G.

In Edinburgh, Capt. C. Dundas, Coldstream Guards, eldest son of Captain Deans Dundas, R.N., M.P., to Janet, daughter of J. Jardine, Esq., Sheriff of Ross and Cromarty.

At St. Pancras Church, Francis, son of Sir F. M. Ommaney, to Julia, daughter of T. Metcalfe, Esq., Fitzroy-square, and Lincoln's Inn.

At St. Petrox Church, Dartmouth, the Rev. John Bradford, of Newton Abbott, in this county, to Tamesin Sarah Louisa, eldest daughter of Capt. Mapleton, R.N., of the former place.

On the 11th April, at Clapham, Lieut. N. F. Edwards, R.N., to Mary, youngest daughter of the late W. Cotton, Esq., of Balham Hill, Surrey.

On the 6th April, at Grittleton, Wilts, the Rev. R. P. Jones, Rector of Cherfield, Gloucestershire, to Elizabeth Charlotte, widow of the late Capt. Kearney White, R.N., and daughter of the late Joseph Neeld, Esq., of Gloucester-place, Portman-square.

Mr. T. M. Vicary, of Bedford-street, Devonport, to Miss Jane Stones, daughter of Mr. T. Stones, Purser, R.N.

Deaths.

On the 17th April, at Fishguard, Pembrokeshire, after a short illness, Mary, the wife of Lieut. Evans, R.N.

On the 19th April, at Chatham, Capt. Edward Stopford, R.N., (1802).

At Edinburgh, on the 13th April, Dr. Alexander Moreton, R.N., (1807.)

Lately, T. J. Ley, Lieut. R.N., (1803.) Lately, at Stonehouse, Com. Powell, R.N.

Lately, Com. Henry Waring, R.N. (1802).

At Edinburgh, on the 8th April, Lieut. Wm. Jones, R.N., (1806), aged 55.

At Southampton, on the 11th April, Mr. Thomas Hewlett, Master, R.N., (1796) aged 70.

Lately, at Gravesend, Lieut. R. Turner, R.N., (1798).

At Dover, in consequence of a severe wound received in action during the American war, in his 53d year, Capt. Sir W. Howe Mulcaster, R.N., C.B., K.C.H., K.T.S., and Aid-de-Camp to the King.

On the 17th April, at Exeter, Mr. G. Peacock, Master, R.N., (1796), aged 72.

On the 26th March, in London, Elizabeth, the wife of John P. Kelsall, Esq., of Fareham, only surviving daughter of the late Rear-Admiral George Hopewell Stephens, of Ealing, Middlesex, and niece of the late Rear-Admiral John Bligh, formerly of Whitedale, Hants.

At Exeter, Mrs. Frances Stephens, sister of the late Rear-Admiral Stephens, of Great Ealing, Middlesex, aged 81.

At Valparaiso, on the 17th October last, Mr. Wm. Campbell, R.N., of H.M.S. Basilisk, son of the late Capt. Campbell, R.N., of East Looe.

Lately, at Rochester, Kent, Mr. Mark Hammond, Purser, R.N., (1806) aged 60.

At Dunbar, aged 83, Com. Andrew Lapslie, R.N., (on the retired list).

Lately, Com. Coet, R.N., (on the retired list.)

At Holyhead, on the 17th March, Anne Pelham, wife of W. K. Mulvany, of Dublin, Esq., barrister-at-law, and eldest daughter of Capt. Judd, R.N., Woodside, Plymouth

Lately, of apoplexy, at his residence, Hoe-street, Lieut. Pickmore, R. N., aged 45.

At Haliford, Middlesex, in her 31st year, Emily, wife of Capt. Parker Bingham, R.N., and eldest daughter of Major Geo. Payne, of Weybridge, Surrey.

Lately, Lieut. Matthew Buckle, R.N., (1780), an out-pensioner of Greenwich Hospital.

At Lancaster, 25th March, Retired Com. Rich. Whitehead, R.N., aged 74.

At Exmouth, on the 20th April, after a lingering illness, Elizabeth Mary, the wife of Rear-Admiral Clay.

On the 18th April, in her 15th year, Grace, only daughter of Captain Houston Stewart, R.N.

At Plymouth, on the 21st April, Anna,

eldest daughter of J. Mc. Donald, Esq., Surgeon of H.M. ship Phoenix.

At Jersey, on the 20th April, Mr. E. M. Burke, Purser, R.N. (1812.)

On the 10th April, Lieut. John Goldie (a), R.N. (1802), aged 55.

On the 20th April, in her 70th year, Martha Charlotte, relict of the late Rear-Admiral Edward O'Bryen, of Catisfield, Hants.

Lately, of consumption, at his residence, 25, Union-street, Stonehouse, Mr. George H. G. Wills, R.N.

At Lugton, near Edinborough, Lieut. G. L. A. Mc. Murdo, R.N. (1822), Mr. E. Murphy Burke, Purser.

METEOROLOGICAL REGISTER,

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

		MARCH, 1837.											
Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	W.	In. Dec.	In. Dec.	33	37	28	38	N.	N.E.	3	4	Og.	O.
2	Th.	30.32	30.26	34	39	30	40	N.W.	N.W.	4	5	O.	O.
3	F.	30.29	30.24	32	41	29	41	N.E.	N.E.	4	5	O.	O.
4	S.	30.04	30.05	30	42	36	42	N.	N.	6	6	Qbc.	Qbc.
5	Su.	30.05	30.01	37	43	33	46	N.W.	W.	3	3	Om.	Om.
6	M.	29.93	29.97	40	41	36	42	N.E.	N.E.	3	3	Bcm.	O.
7	Tu.	30.07	30.09	39	43	34	44	N.W.	N.	2	3	O.	Bcm.
8	W.	30.20	30.18	36	46	30	46	W.	W.	3	3	B.	Bcm.
9	Th.	30.06	30.02	42	49	36	49	S.W.	S.W.	5	6	Bcm.	Op (3)
10	P.	29.63	29.44	43	48	37	48	S.W.	S.	7	7	Qbc.	Qp (4)
11	S.	29.30	29.28	42	46	34	46	S.W.	S.	3	4	Bc.	Bcp (3)
12	Su.	29.38	29.44	37	42	29	43	S.W.	S.	2	4	Bc.	Bcps (3)
13	M.	29.83	29.95	35	41	34	42	N.E.	N.E.	5	5	O.	Opd (3)
14	Tu.	30.31	30.31	38	42	29	44	N.E.	N.E.	7	6	Oq.	Oq.
15	W.	30.16	30.10	37	39	33	39	N.E.	N.E.	5	6	O.	Od (4)
16	Th.	30.07	30.09	37	39	36	40	N.E.	N.E.	3	3	Ogd (2)	O.
17	F.	30.29	30.27	36	38	35	39	N.	N.E.	4	3	Og.	Og.
18	S.	30.21	30.19	38	40	35	41	N.E.	N.E.	3	3	O.	O.
19	Su.	30.03	29.99	35	41	28	42	N.E.	N.E.	5	5	Bc.	O.
20	M.	29.87	29.84	33	36	29	38	N.	N.	6	6	Bcps (2)	Bcps (3)
21	Tu.	29.84	29.74	30	32	22	34	N.	N.	5	4	Bcps (2)	Bcps (3)
22	W.	29.76	29.79	32	37	26	38	S.E.	E.	2	2	Bcm.	O.
23	Th.	29.71	29.68	31	37	23	38	S.E.	S.E.	1	2	O.	O.
24	F.	29.73	29.77	30	35	19	37	N.E.	N.	2	4	Bc.	Bcm.
25	S.	29.79	29.75	35	39	28	40	N.W.	N.W.	4	4	Bc.	Bc.
26	Su.	29.74	29.78	37	40	31	41	N.W.	N.W.	4	6	Bc.	Bcps (3) (4)
27	M.	29.98	30.02	31	39	22	40	N.W.	W.	5	5	Bc.	Bcps (4)
28	Tu.	29.96	29.92	38	46	31	48	S.W.	S.W.	6	6	Qbcps (2)	Qo.
29	W.	29.71	29.66	44	47	36	49	S.W.	S.W.	4	4	Or (1)	Or (3) (4)
30	Th.	29.76	29.76	38	44	34	47	N.E.	N.E.	2	2	Bc.	Bc.
31	F.	29.90	29.92	34	42	25	45	N.E.	N.E.	2	2	B.	B.

MARCH—Mean height of the Barometer=29.930 inches; Mean Temperature=36.5 degrees; Depth of Rain fallen=0.45 inches.

Note.—This was an exceedingly cold month, the mean temperature being a degree and a half lower than January!

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

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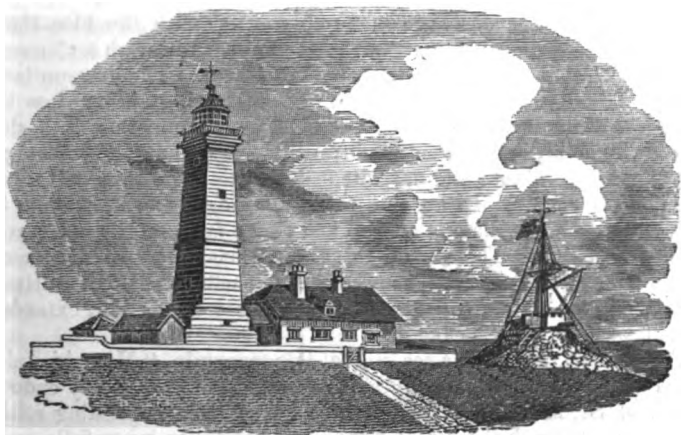
ORIGINAL PAPERS.

JUNE, 1837.

BARDSEY ISLAND AND LIGHTHOUSE.

THIS lighthouse stands upon the low part of Bardsey Island, and near the S. W. end of it, about a quarter of a mile from Pen Diban Point. It was erected and first lighted on the 24th of December, 1821, under the direction of Mr. Nelson, a civil engineer. The building is a handsome piece of masonry, composed of the free-stone from Red Wharf Bay, the same material which forms the Menai bridge, &c. The lighthouse has a neat and commodious dwelling attached to it for the residence of the light-keeper.

The tower is square, each face being about twenty-six feet broad at the base, and gradually diminishing to about half that breadth at the top, where it is terminated by a light gallery; from thence rises the lanthorn, which is of the medium size; and the whole is surmounted by a neat dome.



The base of the building is elevated 48 feet 6 inches above the level of high water; the height from the ground to the gallery is 72 feet; from thence to the centre of the light is seven feet; and the whole height of the building, from its base to the top of the vane, ninety-six feet.

The light is produced from 15 burners and reflectors, each reflector having a diameter of 22 inches, and arranged in rows as follows, viz.: in the first or upper row, are four burners; in the second or middle, are five—both these rows are fixed; and in the third or lowest row, which revolves, and makes one entire rotation in six minutes, there are six burners, so arranged that between each blaze of light, is an interval of one minute.

The rays of light extend from S. E. by E. $\frac{3}{4}$ E., or about two miles outside of Pencillan Head, to about N. E. $\frac{3}{4}$ E. in the direction of the

highest part of Braich y Pwll Head. The light is of the second order, but may be seen, under favourable circumstances, from a distance of between 15 and 20 miles; it imposes a duty of one farthing per ton on the passing trade.

Bardsey Island, or Ynys Enlli.

This little island deserves at our hands some further notice than its being the mere spot upon which a useful light is placed. Although passed and repassed by thousands of ships every year, still, with the exception of the brethren of the Trinity House, who occasionally visit it in their annual inspection of lighthouses, or the enthusiastic tourist, bold enough to brave the dangers of the strait which divides it from the main, few ever think of landing on it to contemplate over its interesting history. Travellers and poets, both English and Welsh, in many legends connected with the island, have long immortalized it as the palace of the prelate, the abode of the saint, and the sanctuary of the devotee. It is our business, therefore, merely to present our readers with a faint outline of its present state.

Bardsey Island is separated from the N. W. extremity of the county of Carnarvon, by the well-known strait called Bardsey Sound, distant across exactly one nautical mile and a half. If viewed in connection with the adjacent coast, one is forcibly struck with the idea that at some former period they must have been united, although a channel of water, 30 fathoms deep, now flows between them. The extreme length of the island is, from N. E. to S. W., measuring rather less than one geographic mile and a half; its S. W. termination is a sharp low rocky point, called Pen Diban; while its breadth, which may be measured at its obtuse and opposite end, is little more than half a mile. This end is bounded by a single mountain ridge, elevated about 540 feet above the sea, having a steep and rocky face, totally inaccessible on its water side. This narrow ridge, for it has a very sudden descent on its land side also, serves as a barrier to shelter the small cultivated tract beneath, which, commencing at the base of the hill, extends on all sides to the water's edge.

At the foot, and on the sea-side of this mountain, "Mynydd Enlli," stand the gloomy remains of the once extensive and richly endowed abbey of St. Mary; but little now is left of this interesting relic of antiquity, although the awful remains of mortality mournfully testify the vast numbers of human beings who have found here their last and quiet resting place. Some idea may be formed of this fact, when it is stated that in many places within the precincts of the abbey ruins, a compact stratum of human bones, some feet thick, may even now be found, independent of the disgusting mass of human teeth which lie scattered over the surface.

The present population of Bardsey Island may be estimated in round numbers at about 100 persons, whose habitations are confined to the foot of the mountain on its sea-side, and perhaps number in all about twelve dwellings. This small community, which may be said to consist of a single family, (being nearly all connected,) support themselves during the summer months by taking lobsters, which plentifully abound, and are of good quality; these are immediately shipped off for the

market at Liverpool. The young men, an extremely fine race, are almost all seamen, but their chief subsistence is derived from cultivating the land. The whole island is portioned out into four quarters, or farms, each quarter letting for about £30 per annum; and as the soil is particularly productive, and wholly tithe and tax free, it yields not only a fair but a highly remunerating return.

The manners of these people are inoffensive, and with the exception of what might arise from a few gallons of a very inferior whiskey which they manufacture for their own use, without troubling the government with the supervision of an excise agent, they seem to possess very few vices. Indeed there would be considerable difficulty in putting down this little whiskey-making pastime of theirs. A gale of wind is the general signal for getting the "steam up," when it is unlikely that troublesome visitors will intrude upon them. At most times, owing to the rapidity of the tides, and a want of local knowledge, the voyage across the sound is performed with difficulty, but in bad weather it is totally impracticable.

The harbour, if it may be so called, at all events the only safe landing-place, is a mere fissure in the rocks, widened a little by art, and is situated at the south part of the island, bearing from the lighthouse N. 74° E. about three-eighths of a mile. This cove is unapproachable during strong S. or S. W. winds, as there is nothing to protect it from the furious lashing of the Irish sea.

A curious old custom exists amongst these interesting islanders, that of investing one of their community with the title and dignity of king; but we have not been able to learn that his majesty enjoys any particular immunity in virtue of his "high estate." The present monarch, who succeeded his august father a short time ago, was crowned with great pomp and solemnity by the present Lord Newborough, the noble proprietor of this classic retreat, and who, by his urbanity and kind attention to these simple-minded people, seems to have rendered himself an object of affection among them. His present majesty of Bardsey is in the employment of the Trinity House as an attendant, with his boat, a beautiful little vessel of five or six tons. Those who know him represent him as an extremely intelligent and attentive seaman, and one fully deserving of every farthing of his *civil list*.

Before closing this short account, it is only an act of justice to notice the very excellent order in which the light is preserved. The whole establishment is most creditable to Mr. Vanster, in whom, it may be safely said, the Trinity Board have found a most intelligent and excellent servant, and whose hospitality is well known to every visitor of Bardsey Island.

NOTES ON THE VOYAGE OF H.M.S. JUPITER FROM THE CAPE OF GOOD HOPE TO CALCUTTA, *by Capt. Hon. F. W. Grey, R.N.*

We departed from Table Bay at 6 P.M. of the 21st December, 1835, and ran to the northward, inside of Robben Island, with a breeze which, at the anchorage blowing fresh from S.E., fell light as we passed the island; and as we got clear round, became steady at S.W. A ship which left three hours before us, by attempting to go out by

the southern channel, was becalmed, and at dark was still baffled by light and variable airs.

The wind in the morning drawing to the westward, enabled us to fetch round the cape on the starboard-tack, and at noon of the 23d we were in latitude $35^{\circ} 26'$, longitude (chronometer) $19^{\circ} 3'$, having experienced a northerly current of a mile an hour. We steered to the S.E. till in the latitude of 37° , without experiencing any more current, and then ran to the eastward in this parallel, with moderate breezes and fine weather.

After passing the longitude of 34° , we sounded occasionally, with the intention of passing over the position assigned by Horsburgh to the bank said to have been sounded on by the Brunswick, but the wind drawing to the N.N.E., set us to the southward.

It is however worthy of remark, that on the 30th, having run by the log 223 miles, with a fine breeze at N.N.E., our reckoning was,

Latitude observed, $37^{\circ} 25'$	Longitude, chronometer, $41^{\circ} 26'$
" D.R. 37 17.	" D.R. 40 45.

shewing a current of upwards of thirty miles to the eastward.

The next day, in latitude $38^{\circ} 9'$, longitude $45^{\circ} 51'$, we had no current, but the water from the deep ocean blue, had become a light green colour, as if we had been passing over a clear sandy bottom; we could get however no bottom at 150 fathoms, and, upon examination, the water was found to be very full of animalculæ; probably they were a sufficient cause of the change of colour. The water continued to be of the same colour the next day; but on the 2d January, in latitude $37^{\circ} 30'$, and longitude $49^{\circ} 5'$, it again became the deep ocean blue, with numbers of medusæ of different forms and colours, some of them very beautiful, and a great number of transparent animalculæ of the size and shape of a grain of barley. It is singular, that upon referring to the log of the Medusa, in 1805, I find that nearly in this position (that is, in the latitude of 38° , and between 45° and 48° , that ship was in two days set 110 miles to the W.N.W.) It is not usual to find these currents at this distance from land. Can it be that they are caused by the vicinity of some bank?

From the latitude of 30° , longitude 66° , to latitude 34° , and longitude 82° , we had light northerly and N.E. winds, and on the 17th got the S.E. trade in latitude 11° , longitude $86^{\circ} 30'$. It was succeeded the same afternoon by a westerly wind, with occasional squalls, accompanied by rain; and varying from W.N.W. to N.W., carried us by the 28th to $2^{\circ} 30' S.$, and $90^{\circ} 47'$ east.

From this time to the 6th February, we had constant northerly winds and strong currents, as follows:—

Date.	Latitude.	Longitude.	Current.
Jan. 28th	$2^{\circ} 29' S.$	$90^{\circ} 47'$	in 2 days, S. 49° E. 67 miles.
30th	$1^{\circ} 30' "$	$91^{\circ} 13'$	" E. 60 "
Feb. 1st	$0^{\circ} 38' "$	$90^{\circ} 20'$	" S. 28 W. 39 "
2nd	$0^{\circ} 13' N.$	$90^{\circ} 22'$	in 1 day West 15 "
3rd	$0^{\circ} 56' "$	$91^{\circ} 7'$	" " 35 "
4th	$1^{\circ} 30' "$	$91^{\circ} 55'$	" S. 78 W. 49 "
5th	$1^{\circ} 42' "$	$93^{\circ} 5'$	" S. 32 W. 36 "
6th	$2^{\circ} 19' "$	$93^{\circ} 27'$	" S.W. by W. 15 "

From the 6th, we had calms and light airs, with a drain of current to the southward, so that it was not till the 13th that we reached the latitude of $4^{\circ} 40'$ N., and in longitude 94° got a breeze from the N.E. We passed about seventy miles from the Nicobar, and ninety from the Andaman islands; and on the 18th had reached the latitude of $15^{\circ} 30'$ in longitude 90° east.

From this time we had to contend with light northerly and N.W. winds, with a current to the S.E., and it was not till the 27th we struck soundings in sixty-three fathoms, in latitude $20^{\circ} 40'$ N., longitude $90^{\circ} 00'$ E. The next day having been set 30 miles to the eastward, we crossed the "*swatch of no ground*," having no ground with 80 fathoms at 3, and at 4 having only 12 fathoms, which very soon shoaled to eight, when we tacked. At 10 it fell calm, and we anchored in 9 fathoms off the Muryallah river, in lat. $21^{\circ} 24'$, long. by chronometer $89^{\circ} 31'$, and found the tide setting to the eastward, $2\frac{1}{2}$ miles per hour; the tide in the morning setting to the westward, we had drifted but a short distance, when we found that we were shoaling our water, and came-to again in $4\frac{1}{2}$ fathoms; the tide now setting to the N.E., at ten the water had fallen to 25 feet; but the tide taking a southerly direction, soon carried us out into deeper water. Ships beating up here should be very careful, as the tides are irregular.

From what I could learn from the pilots, and what I observed, it would appear that the flood sets to the northward, and the latter part of it to the eastward, the first of the ebb setting to the S.E., then S.W., and latterly west; but to the eastward there is more easterly than westerly tide. The land was never seen.

In the evening of the 1st March, the wind drew to the southward, and enabled us to cross the Saugor sand in 7 and 6 fathoms, hard sand, and at 10 we made the light-vessel. This light is in lat. $21^{\circ} 4'$ N., not $21^{\circ} 7'$, as given in the Bengal directory. The longitude I believe to be pretty correct. We took a pilot on board at 1 A.M. of the 2d, reached Kedgerree the same evening, and Diamond harbour the following day. We left Diamond harbour at 9 A.M. of the 4th, with a steamer lashed on each side, and a third a-head; but the eddies of the tide were so strong, that after narrowly escaping going on shore on the James and Mary, we lost all command of the ship off Fultah point, and she was thrown with her head on the eastern bank; her stern however was in 9 fathoms, and as the water fell, she launched off, and we came to an anchor; next day the steamers took us up without difficulty, and we anchored off the Esplanade at Calcutta, in $6\frac{1}{2}$ fathoms.

In this passage we lost a great deal of time, and made a very tedious passage up the bay, by going up the eastern side, as merchant ships which touched at Madras made very good passages; but I do not believe that this is usually the case in the month of February. I have understood that the S.W. winds set in on the Coromandel coast much earlier than usual.

NEW LIGHTHOUSE AT PONDICHERRY.

THE following notice of a new lighthouse lately constructed at the French establishment of Pondicherry, appears in the *Annales Maritimes* :—

“A new light has been established at Pondicherry, and was first lighted on July 1st, 1836. Ships are enabled by it to take up their anchorage by night as well as day.

“But it is necessary to observe, that an iron foundry at Porto Novo, ten leagues south of Pondicherry, has a furnace, the high chimney of which shews a faint light at its summit, which, in certain weather, may be mistaken at night for the light of Pondicherry. This error is rendered still more dangerous, because, under the supposition that it is the light of Pondicherry, a course would be shaped which would cross the bank of Colram, (or Coleroon,) where there is not sufficient depth of water for large ships.

“Lieut. Henry, (of the French navy,) commanding the *Isere*, has examined the position of this bank with respect to the foundry of Porto Novo, and has found that from its northern extreme in four fathoms, the chimney bears N. 59° E. by compass, and he has given the following directions for avoiding a mistake which might prove so dangerous.

“In clear weather, the light of the chimney of Porto Novo may be distinguished from that of Pondicherry light by the change of its brilliancy at the times of feeding the furnace: but in thick weather this difference of brilliancy may be attributed to certain vapours between the chimney and the observer. In the latter case the lead is indispensable, and gives a sure notice.

“The soundings decrease rapidly on the eastern and north-eastern edge of the bank of Colram. In running down the coast from Pondicherry to Karikal, and keeping on its western side, we have found the soundings decrease without interruption, at each cast of the lead, to 9, 8, 7, and 6 fathoms. The soundings, on the contrary, near Pondicherry, do not decrease on approaching the shore, but in a very small and gradual manner.

“If a vessel then from the southward, bound to Pondicherry, be undecided as to a light seen on the coast, she should immediately be put under easy sail, stand boldly in for the shore* as soon as the wind will permit, sound continually, and keep herself ready to manœuvre quickly, so as to be able to stand off, or run along the bank, if the lead indicates that she is upon it.

“In crossing the Colram bank, the bottom will be found of sand, and good for anchorage, provided that the wind from sea is not too fresh. The distance of ten leagues, which separates Porto Novo from Pondicherry, should not induce seamen to imagine themselves safe, when it would be imprudent on a coast where irregular and violent currents render their estimated positions very uncertain.

“By the bearing of the foundry chimney from the north extreme of the bank in four fathoms, it may be concluded, that by bringing either this or Pondicherry light to bear N. 59° W. before making for it, all danger will be avoided. This will be true as far as avoiding getting aground, but there would be reason to fear if a ship was off Pondi-

* This should, however, be done with great caution. Horsburgh gives the following notice: “H.M.S. Falmouth, standing in towards the shoal in the night, intending to tack in twelve fathoms, but missing stays, got into four and a half fathoms, and was obliged to anchor: the weather being moderate, they warped out in the morning, and made sail.” It may be observed that the water shoals more suddenly in standing toward the shore about Coleroon, than at any other part of the coast.

cherry, that the wind would not permit a vessel to lay-up sufficiently soon for the road, and particularly in the S. W. monsoon; that she would find herself past it, or at least obliged to anchor too far to the northward, and in a position very incommodious for receiving or discharging cargo, and communicating with the shore.

“It is advisable then to determine at once what light it is that is seen.”

[We shall look for further particulars concerning the height of the light, &c., with some anxiety.—ED. N. M.]

NOTES ON A VOYAGE FROM CAPE HORN TO MAZATLAN, *by Capt. P. Masters, of Liverpool.*

ON the 9th November, we made the island of Juan Fernandez. When first seen, it was 65 miles from us. The next morning the wind increased to a fresh breeze from the westward, and as we were to leeward, we had to beat up from French Bay, (at the N.E. part of the island,) to Cumberland Bay, in which we anchored the same afternoon, about 200 fathoms from the shore, in six fathoms water, sand and stony bottom. In beating up, the weather was thick and squally, and a current was setting to the eastward. When standing close inshore, we had some smart showers of rain, and could scarcely discover the tops of the cliffs, which rise several hundred feet perpendicularly from the sea.

French Bay is small, and the curve which forms it differs but little from the direction of the outer part of the coast. It affords no shelter, and is situated at the bottom of a valley which rises quickly to the high land, presenting a pleasing appearance, being well covered with trees, some of which were very large. Between French and Cumberland bays there appeared to be no landing place.

Cumberland Bay lies exposed to northerly winds, and in the months when these winds prevail no ship should anchor in it; it curves in from the heads which form the bay upwards of a mile. The western head, which divides Cumberland from English bay, is a precipice, upwards of two hundred feet high; the face of it is a deep brown colour, and the eastern head has the same appearance with regard to its formation.

In coming from the eastward, the barracks at fort San Juan Bautista, and the village below it, near the beach, can be seen when abreast of the eastern head. At the back of the village the ground rises rapidly to the hills farther inland, and on each side of it is a valley. The valley on the western side runs several miles back, rising rapidly to the mountains in the centre of the island; in front of the village, (on the western part of Cumberland bay,) is a piece of ground of several acres, which has been chiefly formed by the soil washed down by the rains from the high land. This was in a state of cultivation, but chiefly planted with potatoes and cabbages; other kinds of vegetables were also planted, but did not thrive; they are mostly destroyed when young by worms, of which there are immense numbers. There is a fine stream of water running down the valley to the westward of the village, and is brought to the mole, or landing place, by a small trough.

The sea was perfectly smooth when we were here, in all parts of the bay. I was informed by the people on the island, that it is always so, excepting in the season of the northers, so that a boat could haul close inside the mole, and with a hose fill the casks without landing. The strand at the bottom of the bay extends to the eastward, about three quarters of a mile, to a high cliff. Half a mile from the beach, up the valley which is to the eastward of the village, are a few miserable huts, in which some prisoners reside. Each hut has a patch of ground allotted to it for raising what vegetables they can, on their own account.

On the east side of the bay is a small valley: there is said to be a fine stream of water running down it, but it cannot be so handy to fill the casks from as the stream at the mole.

When the Chilians first formed an establishment here, before they could get houses built, they lived in the caves which are dug in the steep part of the hill behind the village. These are now only used as prisons for the convicts, when they do any thing amiss. We visited one of them, from which a prisoner had that morning been released, and found that the excavation does not reach into the hill more than eight or ten feet, but they are wet, and have a most miserable appearance as a dwelling place; there is now a small chapel in the village, with several small houses and huts. In the eastern part of it is a moderate sized building, in which part of the prisoners who are at this end of the island are confined at sunset, until the morning, when they go to their labour. There is also a carpenter's and blacksmith's shop, in which several prisoners are kept at work. In the former, articles, such as tables, boxes, &c., are made of sandal wood for sale. The principal building is the government store, the lower apartment of which is used as a place both for keeping provisions and receiving the produce of the island and coast. The upper part is built of wood, and is intended, when finished, for the commandant's residence.

During the earthquake which did so much damage a few months since in South America, the sea rose at Juan Fernandez three different times. It left a mark on the shore which was nearly filled with water; its greatest rise was about forty feet above the general level of the sea; and I was informed that the rise was sixty feet at the western part of the island. The sea was quite smooth when it occurred, the weather calm and clear. The water did not rush in like a wave, but rose like a rapid flood-tide. As it came on unexpectedly, the dry provisions which were in store, (all that were in the island,) were entirely destroyed, and several mud huts which were near the beach, were washed away, but there were no shocks felt on any part of the island.

With regard to supplies, we found that poultry is scarce; sheep are very good, and are four dollars each. The price of a bullock is about fourteen dollars—those we saw were in very good condition; there is also a quantity of goats on the island. Vegetables are scarce and dear. Part of the cattle is private property, and before purchases can be made, the governor's permission must be had. Piles of wood are cut, ready for sale, in different parts of the bay, to be purchased from the governor. The expenses incurred by touching here for wood and water are trifling, as the islanders are very anxious that ships should stop here for supplies. They have two large boats, in

which the prisoners are occasionally sent out to fish. A few seals are caught sometimes. The boats are generally successful in fishing, and also take very fine lobsters. Among the fish which abound here, are excellent rock cod, a number of which I saw on shore salted down. There is very little game on the island of Juan Fernandez, with the exception of pigeons, which are numerous, and fly in large flocks, many of which are domesticated.

We filled up our stock of water, and should have had our fire-wood and other supplies on board the next day, but during the night a violent southwester set in; heavy squalls came down the valleys, which started our anchor, and drove us to sea. In the morning it moderated; we made several tacks, endeavouring to recover the anchorage, but as the wind was baffling, we lost ground on each board; and finding it would be too much sacrifice of time, we bore up for Mazatlan, where we were bound.

The climate of Juan Fernandez is mild, and is considered healthy, but the weather is very changeable. The mornings are generally cloudy, with showers of rain. Towards noon the weather clears up; the afternoons are clear and pleasant; towards midnight the clouds begin to gather on the high lands, which spread over the island; squalls come down the valleys, and showers of rain, which again clear up as the day advances. This is said to be the general state of the weather for eight or nine months of the year.

English Bay, although not so well sheltered, has a better appearance from the sea than Cumberland Bay. The ground about it is not so much broken, and rises with a more gentle ascent towards the high land. It was in this valley, which runs up from the bottom of the bay, that the celebrated Alexander Selkirk is said to have lived; there are a few huts some distance from the beach, in which the prisoners reside, who are at work there. Whilst we were here, a party of about thirty prisoners arrived from the south-west part of the island, for provisions; and the allowance for three weeks issued to them, appeared to me to be a very scanty supply. It seems that these were the worst characters on the island, and were kept farthest from head-quarters. Each party has a prisoner appointed as overseer, who keeps them pretty close at work, in clearing ground for cultivation, cutting wood, and making roads, &c. The convicts of Juan Fernandez are mostly assassins, and amongst them are several women!

In the course of a ramble with the commandant up the western valley, (which is at the back of the village,) after being so long at sea, and experiencing such bad weather, we were highly gratified. No doubt everything presented a more engaging aspect to us, weather-beaten as we had been, than to a person arriving from a civilized place. There were large quantities of flowers growing in all directions, the odour of which was delightful; also several fruit-trees in bearing, but the fruit was not ripe. At the entrance of the valley, we saw several fig, peach, and nectarine trees—the two last in full blossom. The priest kindly sent us on board a dish of delicious wild strawberries of a large size, and some other fruit peculiar to the island.

The Spaniards, when they had possession of the island, must have spared no expense in improving this place. They constructed a paved road from the beach to their largest fort, which is up the west-

ern valley about a mile. The road is now broken up, and the fort in ruins. Besides this, they had another commanding the bay, behind the fort of San Juan Bautista. After the revolution had gained ground in South America, the establishment was broken up, and everything destroyed; the forests were set on fire, and, particularly where sandal wood grew, care was taken to keep them burning. This is a grave accusation, and savours much of the narrow-minded jealousy of by-gone ages; but they are even said to have destroyed large timber, where it was easy of access. The only things that remain are two guns at fort San Juan Bautista, one of which is useless, the other, although mounted, is nearly as liable to damage those who fire it, as those fired at. There had been a number of wild goats on the island, but these suffered the common lot, and were all destroyed. At present there are no goats on the island.

We found a small quantity of sandal wood in store for sale, at six dollars per quintal, but it was only the roots of trees which were formerly growing, the whole of them being more or less burnt. I learnt from the commandant that there were parts of the island towards its centre, which most probably had never been visited, where sandal wood might still be growing. A prisoner, who had a very decent appearance, informed me that in his rambles he had seen some beautiful little plains in the centre of the island, but as there were no roads, it was difficult to get into them. On the sides of the mountains there is a great quantity of very fine timber; but the highest part of Juan Fernandez is inaccessible, and several prisoners have lost their lives in attempting to reach the summit. A reward was offered for the performance of this feat, besides the liberty of the person who succeeded; but this is now suspended.

On the 2d of August, 1835, the prisoners at Juan Fernandez rose on the troops at the time they were receiving their weekly allowance of provisions, took the arms, and had possession of the fort for two hours. The soldiers at last rallied, and attacked the prisoners with the carpenters' tools, and any other weapons they could get; retook the fort, and recovered their arms. There was not a soldier hurt in the fray, although they were fired upon repeatedly, but three prisoners were wounded, who shortly after died. Soon after this affair, the second in command put the commandant (an Englishman) under an arrest, for inattention to his duty, and which neglect was considered the chief cause of the prisoners rising. Five days before we arrived here he was sent to Valparaiso to be tried. Another commandant, with a fresh detachment of troops, arrived at the same time to relieve those who were on the island, their time, which is six months, having expired. Everything appeared to be carried on in good order, and with strict discipline; but the commandant recommended me to be on my guard, as the prisoners had once risen, and might again attempt it, and take possession of my vessel. About two years previous, a number of them had taken possession of a French brig during the night, which had called in for supplies, and made the crew land them near Chiloe. I did not anticipate such a cruize, but, to make all sure, we loaded our guns with canister, and got our small arms ready. However all passed off very quiet; we could hear nothing but the sentinels' "Quien Viva" during the night. There were seventy soldiers

and 319 prisoners on the island, including women, of which there was only a small number.

About two years previous, an American whaler was wrecked under the high cliff which forms the east side of the bay. The captain was on shore getting supplies at the time, and the chief mate stood the ship too close to the lee side of the bay, the wind being from the westward. She got under the high land; was becalmed; the swell which was heaving in, drove her on shore; the anchors were let go, but they could get no bottom until she was on the few rocks which project from the cliff. Some trifling things were saved before she went to pieces.

The island of Masafuera is said to be more capable of cultivation than Juan Fernandez, and that a greater number of seals frequent it; there were at this time ten or twelve persons on it, free settlers from Chile, and I was informed that the crop of potatoes this year would be eight hundred bushels, besides other vegetables. It appears that there is a place where a boat can land on it with safety. Fresh water is good and plentiful, but there is no anchorage off any part of the island.

On leaving Juan Fernandez, we had a light wind from the southward, which continued the next day; when it hauled into the S.E., and kept veering from S.E. to E., with fine pleasant weather, until we were in lat. 20° S., long. 90° W. We found a slight current setting to the south and east. From this latitude to 2° S., the winds were variable from E.S.E. to E.N.E., with pleasant breezes, and the weather very fine.

From lat. 2° S. to the equator, which we crossed on December the 1st, in long. 112° , the wind (light) had hauled into the S.S.E., the weather clear. When in 2° north it veered to the south and S.b.W., with moderate breezes, and gloomy sultry weather, accompanied with rain. As we reached more to the northward, the weather became squally, the wind veering round the compass. We had to single-reef the topsails—the only occasion on which they were reefed, from the time they were loosed off cape Pillar, to our arrival at Mazatlan.

December 7th, the wind hauled into the E.N.E., with light airs, and a confused sea running, in lat. 13° N., long. 115° W.: the variation of the compass we found $7\frac{1}{2}^{\circ}$ east.

December 15th, lat. $18\frac{1}{4}^{\circ}$ N., long. 115° W., the wind had the last few days veered into the N.E. and N.E.b.E.; we also found a strong current setting in the direction the wind blew, at times upwards of thirty miles per day, but averaging from fifteen to twenty miles; the wind hauling into N.E.b.N., we tacked, and stood to the eastward, and at six A.M., saw Cloud's Island bearing E.N.E. We passed it at about four leagues to the southward, and could discover no sign of vegetation on it. Its length east and west is nearly four miles, and but little less from north to south; the latitude of its centre deduced from meridian altitude at noon, is $18^{\circ} 23' N.$, long. $114^{\circ} 48' W.$, variation $4^{\circ} E.$; its elevation by angular measurement 898 feet. When the island bears north, or to the westward of it, the three hills which form the highest part of it, near their summit appear partly bare, and of a grey colour, the strata dipping to the eastward, at an angle of 75° . The western hill is near the end of the island, and has a round

top to it, the parts where the bare rock shews itself, are more broken than the other two. The eastern hill has nearly a flat top, and the rocks extend more in length than the others. Between this and the east end of the island is a small grey cliff rising from the sea. Both ends of the island terminate by a perpendicular cliff, but the eastern is by far the highest. As we passed it, there appeared to be several small bays in which a boat might probably land. About half a mile from the west end of the island is a singular-formed whitish rock, which runs up in several points high out of the water.

From Cloud's Island, our track, as the wind was, (north easterly,) lay directly over Best's Island; and had it been in existence, or near us, we must have seen it. If the island we saw was Best's Island, it is wrongly laid down in the chart, and Cloud's Island must be to the W.N.W. of it.

We left Cloud's Island on the larboard tack, with a light north-easterly wind. On Dec. 17th, in lat. $17^{\circ} 15' N.$, long. $112^{\circ} 30'$, we had calms; the variation of the compass was $3^{\circ} 40' E.$; there was a current setting to S.W. from fifteen to twenty miles per day. When the breeze first sprung up it was variable, but settled into north, and as we neared the coast of Mexico, it hauled into N.N.W., with fresh breezes.

Dec. 22nd, we saw the high land of Mexico. As we neared the coast the winds were baffling, and unequal in their strength; the next day, at noon, Cape Corrientes, bore E.b.N. $5\frac{1}{2}$ leagues; and on Dec. 27th, at midnight, we came to an anchor in Mazatlan outer roads; having been 175 days from Liverpool, and run over a distance by log on the different courses 19,536 miles.

ST. HELENA TIME-BALL.

To the Editor of the Nautical Magazine.

21, Exchange Buildings, May 1st, 1837.

SIR,—Perhaps it is not generally known to your maritime readers, interested in our eastern trade, that since the island of St. Helena was transferred from the Company's to the King's government, the port regulation, obliging ships before anchoring to send their boats to Banks' battery, and others equally absurd, have been rescinded.

On our homeward voyage last year, I wrote to the governor, General Middlemore, from Ascension, stating how unnecessary and annoying it was to the shipping; and I was glad to find, on our visit to the island in March last, that this regulation, with others, preventing ships entering before sunrise, or departing after sunset, had been abolished many months before.

It gave me also great pleasure to observe, that, although by the niggard economy now so much in fashion, General Middlemore had brought out instructions to shut up the beautiful little observatory, and send home the valuable instruments so munificently provided by

the East India Company, the admirable system of dropping a ball for regulating chronometers was still kept up as efficiently as ever. The ball has been removed from the hill to the town, and is now in charge of the master-attendant, Mr. Gulliver, late master of H.M.S. *Thalia*, whose attention to it is unremitting. It is dropped at two stated times every day, and oftener, if requested by any commander.

In a former letter to you, two years since, I expressed a hope that this excellent plan for regulating chronometers would be established at all our principal ports, and it afforded me much satisfaction to learn by a stray paper picked up during our homeward voyage, that the town council of Liverpool* had decided on erecting a small nautical observatory for this and other useful purposes. Is it too much to expect that government should give a helping hand to a work from which so much benefit would emanate? I before remarked that the expense would be very inconsiderable, if a small establishment, with a half-pay lieutenant, were formed at Deal, Plymouth, Falmouth, and our other principal rendezvous.

I am, Sir, your obedient servant,
JAMES LIDDELL.

CHRONOMETERS AT THE MAURITIUS.

In the 4th vol. of the *Nautical Magazine*, p. 136, will be found the particulars of a notice respecting the rating of chronometers at the Mauritius. It will be seen by the following that the expense of sending them to the observatory, has been done away. For the particulars of the time-signal, which it appears will be continued, we must refer our readers to the notice above-mentioned.

Notice.—In order to afford the greatest facility to masters of vessels arriving at this port, to have their chronometers properly rated and examined, notice is hereby given to all merchants and ship-owners, that from and after the 1st of October next, chronometers belonging to shipping trading to this port, will be received and rated at the observatory during the stay of the vessel, free of any charge or expense whatever.

Masters of vessels are also at liberty to send their sextants, circles, or barometers, to be verified.

Time-keeper will be received every day from 12 to 1, and $\frac{1}{2}$ past 3 to 4 o'clock; and one day's notice will be required before being taken away.

The exact mean time 1 o'clock signal will as usual be given on the stated days, viz., Tuesdays and Fridays.

J. A. LLOYD, Surveyor-General and Civil Engineer.

Observatory, Port Louis, 22d Sept., 1836.

* This suggestion was thrown out in our vol. for 1835, (p. 584,) and we are glad to find that it is followed up; for no harbour can be considered complete without such establishments. We hope that in some of the new harbours now in progress, such as that in Mounts' Bay, a provision to this effect will be made.—ED. N. M.

REPORT OF THE LAST VOYAGE OF THE FRENCH IN SEARCH OF THE LILLOISE.

Corvette *La Recherche*, Cherbourg, 28th Sept. 1836.

ADMIRAL,—I have had the honour of informing you, in a preceding report, of the arrival of the *Recherche* at Reikavick, and of the commencement of scientific operations at that place. On the 2d of June, M. Gaynard being provided with every necessary which could ensure the success of the exploration with which he was charged, I left him, and steered for the N. W. coast of the island, where I hove to among the vessels of the fishery. After remaining some days among them, I proceeded to Dire Friond, for the purpose of completing water. I accidentally found in this bay the Dutch galliot *William the First*, commanded by Jacob Vankeulen. This captain had with him last year as his second the same Pierre de Goede, who gave the French captain, Frederick, the report which I had the honour to address to you some time after my return, and in which he declared he had seen a French brig-of-war capsized on the 28th August, 1833, some miles off Cape Staalbierg. Captain Vankeulen assured me that Goede had frequently spoken of this wreck, and informed me that the vessel in which this sailor was embarked in 1833, was commanded by the same Tunus Vandeflet, and that his owner was M. Hoguedinck, of Wardergen, a little port on the Meuse: that these two seamen were not at Iceland this year, but in the fishery in the north, and it would be easy on their return in the month of October to obtain from them more particulars.

After having again visited the fishing vessels, and received the assurance that the presence of the *Recherche* was not immediately necessary among them, I availed myself on the evening of the 14th of a favouring breeze, and made sail for the west coast of Greenland. From some information which I had obtained at Cherbourg and Reikavick, I learned that Fredericshaal, which I had in vain sought for last year, was not a port, but simply the residence of two Moravian brothers; and that the first Danish establishment on the coast was Julienshaal; that the approach to this port was nearly always impracticable in consequence of the ice, and to attain it, it was necessary to go up to Frederickshaal, and afterwards, with the aid of a pilot, to descend along the coast, in the strait between it and the ice.

This intelligence, together with the hope which M. de Krieger, governor of the island, had given me of meeting at Frederickshaal the Danish captain Graah, who, of all persons, could give me the best information on the object with which I was charged, decided me to steer directly for this place.

With a favourable wind, I reached the meridian of Cape Farewell on the 21st, but, from that time to the 29th, the winds and currents prevented my making much progress. On the 30th, being 25 leagues off Frederickshaal, I met with the first ice. I passed all that night and part of the 1st of July in working between two banks, which left a space of about two miles between them. In the afternoon, the

breeze, which hauled to the northward, enabled me to make good progress to the east, along a bank of ice, and to windward were several open spaces.

At 8 in the evening my progress was stopped by a bank, extending from north to south. After having ascertained from the mast-head that there was open water on the other side of it, and that the floes were not so fixed that it would be impossible to find a passage through them, I determined on passing this obstacle, and did so in a quarter of an hour, without accident. I neared the land afterwards some leagues, and found another bank, which I thought it as well not to attempt passing through at the commencement of night, and I laid by in the space, free from ice, through which I had come.

At 2 to 3 in the morning, this clear space existed no longer; the ice was so closed together that the vessel was surrounded by it on all sides, and it was almost impossible to prevent it from closing on the vessel. In seeking for an open channel, and with this view crossing a bank closed well together, the *Recherche* struck violently against an iceberg; and although she made no water, I had reason to believe that from the violence of the shock her hull was damaged. At 8 in the morning, it being impossible to work among so many floes, and it being also impossible to heave to, I made the vessel fast to one of them; but scarcely were the men who went to fix the graplin entered the boat, to return on board with the end of the hawser, when the ice broke, and occasioned the loss of the graplin. This accident, which had nearly cost the lives of several men, obliged me to remain under canvass; and during all this day, our greatest pains were required to keep the ice clear of the vessel.

Until the evening, in spite of a fresh breeze, the sea remained smooth, but towards 8 we observed a swell coming from the northward, which shortly became very high. From this time the ice became in motion, and set to the south with more or less velocity. I judged from the eddies that it was drifting from three to four miles per hour. This commotion of the ice rendered our position more critical, by increasing the difficulty of keeping clear of the large bergs, which the great swell that prevailed rendered very dangerous.

On the 3d, at noon, the sea became clearer, and there only remained outside the vessel a few very large bergs, sufficiently scattered to enable us to work between them. But to the eastward a great number of bergs remained compact together, which I did not think fit to encounter; and I decided on waiting for a favourable moment to approach the land about six leagues to the north of *Fredrickshaal*. It fell calm, and on the next day I despatched an *Esquimaux* fisherman to the director of that establishment, requesting him to furnish me with a pilot. In the evening of the 6th, after passing through the narrow channels formed by the islands at the entrance of that port, the *Recherche* anchored in an excellent roadstead, secure from all danger.

I received from *M. Moller*, the director of this establishment, the most generous assistance. He apprized me that *M. Graah* was at *Goodhaab*, a colony about sixty leagues to the north. He was entirely unacquainted with the disappearance of the *Lilloise*, and had never heard of her. Being in frequent communication with other estab-

ishments, and particularly with that of Julienshaal, he assured me that if any news of the Lilloise had been received there, he would have known it. This was confirmed to me some time after by the arrival of M. Woolf, assistant-director of Julienshaal, who stated that nothing was known of the Lilloise.

I requested M. Moller, whose experience of eleven years on the coast rendered his opinion valuable, to inform me frankly what he thought of the possibility that the crew of the Lilloise might arrive at a Danish settlement; and I cannot adopt a better mode of communicating to you his opinion on this subject, than by transmitting a literal translation of the letter which M. Moller wrote to M. Krieger, in answer to that which I had sent him.

“M. Le Gouverneur,—Captain Trehouart has requested me to inform you by letter the opinion which I entertain of the possibility that the crew of the Lilloise may have been able to save themselves; and I have therefore the honour to state to you, that although such an event is not probable, it is not at all impossible that some of the crew of this brig may be so fortunate as to reach the eastern coast of Greenland on the ice, more particularly if they had light boats, provisions, and clothing, to protect them against the cold during many days' exposure on the ice.”

Should any in this manner be so fortunate as to gain the land, it will not be impossible that, under favourable circumstances, they may have passed along the coast to Fredericshaal; and there is no doubt that in this passage they would find many inhabitants of the eastern coast, from whom they would derive assistance to continue their route. In this case I have had the honour of informing the captain, that there is no doubt, if the crew are so fortunate as to reach Julienshaal, they will be treated by the Danish servants in the best manner the circumstances of the place will admit, and that an account of them will be sent to the royal mercantile office of Greenland, at Copenhagen, and thence to the French legation.

Although I do not doubt that the inspector of South Greenland will give orders to the chief of Julienshaal to look out for traces of the crew of the Lilloise in his district, I shall not fail to direct him, by the first opportunity, before the arrival of winter, and the breaking up of the communications, to make the necessary search, whenever he may be able during this year, and to inform the inhabitants of the eastern part of Greenland who visit the colony in autumn, of the loss of the Lilloise, and to give them the necessary instructions, in case they or any of their companions discover them.

On my arrival at Frederickshaal, I wrote to M.M. Graah and Hollebiel, the one director, and the other inspector-general of Greenland. I communicated to them the object of my mission, and begged them to inform me their opinion of the hopes which we yet entertained of one day finding our lost countrymen. I could have their answer in twelve days, and I resolved to wait for it; but on the 19th, having learnt that these gentlemen had quitted Goodhaad, and were making a tour in the north, which rendered it impossible they could receive my letters till the end of August, I determined to commence my return to Iceland, and I requested M. Moller to send me their answers by the first opportunity.

The last season was exceedingly severe* on this coast. The vessel destined for Frederickhaab was blocked up there by the ice from the month of July, and forced to pass the winter: that of Julienshaal, after being detained at Frederickhaab for fifteen days for the opening of the ice, finished by being lost before she reached her destination. I availed myself, by the stay of the Recherche at Frederickhaab, to examine her bottom. M. de Cotenson, lieutenant de frigate, and the before-named Durier, in spite of the temperature being at zero, dived several times, and informed me that the stern was much injured, six feet below the line of floatation; that a piece, more than two feet long, had been broken off by the ice, and that it extended down to the rabbit of the keel, leaving the ends of the planks exposed. It being impossible to repair an injury so severe in a port destitute of all the necessary means, I contented myself with covering it with a greased tarpaulin, trusting that the vessel, which had not hitherto proved leaky, might continue so.

On the 21st I quitted Frederickhaab, leaving M. Moller the number of the Annales Maritimes, containing a copy of the order which offers a reward to any one who shall return to France all or part of the crew of the Lilloise. After being occupied two days in crossing the drift-ice, which happily I found but little closed, I steered for Iceland, and arrived at Dier Ford on the 7th of August. I passed some days in that bay to procure some fresh provisions for my crew, and on the 15th I again put to sea, and rejoined the fishermen, who had found but very little success on the coast; and nearly all having availed themselves of a southerly wind to near the eastern coast, and be more ready to commence their return to Dunkirk towards the end of the month.

On the 20th, finding the brig alone on the western coast, I steered for Reikavik, where I anchored on the 21st. M. Gaynard, delayed by the snow, did not arrive till the 28th, as well as the other members of the commission. All the measures necessary for our departure were immediately taken, and on the 31st the Recherche would have been under way but for the violence of the wind from the north, which did not permit her leaving Reikavik till the 3d of September. Detained by easterly winds at the entrance of the east channel, it was not till the 27th that we were able to reach Cherbourg. During this voyage the injury to the stern was considerably increased, but the vessel made no water. M. Gaynard has explored with the commission this year the south, east, and north side of Iceland. This long and difficult voyage, in which 464 leagues have been traversed, has produced very considerable collections in natural history, and in the arts and literature of Iceland.

The report then concludes with a statement of the loss of a vessel of the fishery, and a recommendation that in future the vessels destined to that employment shall leave France on the 20th of March.

[The name of the unfortunate brig Lilloise has been formally removed from the register of the French navy.]

* The disasters of the French ships employed in cod-fishing on the coast of Iceland had been so many, and so extensive, that no fewer than 147 seamen, belonging to the port of Dunkirk alone, had perished during the season.

METEOROLOGICAL OBSERVATIONS TAKEN AT THE OBSERVATORY, PORT LOUIS, MAURITIUS, DURING A HURRICANE ON THE 5TH, 6TH, 7TH, AND 8TH OF MARCH, 1836.

Day.	Hour.	Barometer. English inches.	Difference.	French Inches. and lines.	Thermometer.	Sempiesometer.	Rain Gauge.	Wind.
5th	3	29.930		1 00		29	17.0	Light wind.
	4	29.929	0.001	1 00		29	17.0	Very variable, and blowing hard. Wind varied from S. h. W. to E. N. E. h. N. S. E. very strong. E. S. E. by S. to S. S. W. by S.; raining.
	5	29.927	0.003	1 00		29	17.0	S. E. very strong, and in gusts. S. E. by E. to S. W. by S.; raining.
	6	29.925	0.005	1 00		29	17.0	E. N. E. ditto, ditto, N. E. by N. to S. S. W. by S.; raining heavily.
	7	29.923	0.007	1 00		29	17.0	Varying from S. to E. in very strong gusts. Made a complete variation during the night, raining heavily.
	8	29.921	0.009	1 00		29	17.0	Varying from S. to E. in very strong and sudden gusts: raining heavily.
	9	29.919	0.011	1 00		29	17.0	Varying from N. E. by N. to S. S. W. by W., in heavy and sudden gusts: still raining heavily.
	10	29.917	0.013	1 00		29	17.0	A complete variation in heavy and tremendous gusts: raining heavily.
	11	29.915	0.015	1 00		29	17.0	Varying from E. N. E. by N. to S. W. by W., in heavy and continued gusts: raining heavily.
	12	29.913	0.017	1 00		29	17.0	Varying from E. by N. to W. S. W., in heavy blasts: still raining.
	13	29.911	0.019	1 00		29	17.0	Varying from E. N. E. by N. to S. S. W. by S., in heavy and sudden puffs: raining very heavily.
	6th	1	29.909	0.021	1 00		29	17.0	A complete variation in heavy and sudden gusts: still raining heavily.
2		29.907	0.023	1 00		29	17.0	A complete variation: still blowing in heavy and sudden gusts, and heavy rain.
3		29.905	0.025	1 00		29	17.0	Varying from N. E. by N. to S. W., in sudden and heavy gusts: raining heavily.
4		29.903	0.027	1 00		29	17.0	Varying from E. N. E. by N. to S. W., in sudden and heavy gusts: still raining heavily.
5		29.901	0.029	1 00		29	17.0	Varying from E. N. E. by N. to S. W., in sudden and heavy gusts: ditto, do.
6		29.899	0.031	1 00		29	17.0	Varying from E. N. E. by N. to S. W., in ditto, ditto: still raining.
7		29.897	0.033	1 00		29	17.0	Varying from E. N. E. by N. to S. S. W. by W.: still in heavy gusts, and raining.
8		29.895	0.035	1 00		29	17.0	Varying from N. E. by N. to S. S. W. by W.: still high, and raining.
9		29.893	0.037	1 00		29	17.0	Varying from N. E. to S. W., decreasing in violence, and raining less heavily.
10		29.891	0.039	1 00		29	17.0	Varying from E. N. E. by N. to S. S. W. h. W., in occasionally heavy puffs.
11		29.889	0.041	1 00		29	17.0	Varying from E. N. E. to S. S. W., in ditto, ditto.
12		29.887	0.043	1 00		29	17.0	Varying from E. N. E. to S. S. W.: rain and wind decreasing.
7th	1	29.885	0.045	1 00		29	17.0	Varying E. N. E. to S. by W.: ditto, ditto.
	2	29.883	0.047	1 00		29	17.0	Varying from E. by S. to W. by S.: ditto, ditto.
	3	29.881	0.049	1 00		29	17.0	Varying from due S. to due W., very light: raining.
	4	29.879	0.051	1 00		29	17.0	No wind—no variation.
	5	29.877	0.053	1 00		29	17.0	Varying from due S. to N. N. E. by E., very light.
	6	29.875	0.055	1 00		29	17.0	N. by W., almost calm: wind varying from N. W. by N. to N. by E.
	7	29.873	0.057	1 00		29	17.0	Varying from N. E. to N. N. W. by W., cloudy and calm.
	8	29.871	0.059	1 00		29	17.0	W. by S. to N. by W., very cloudy and blowing.
	9	29.869	0.061	1 00		29	17.0	Varying from S. W. to N. W. by N., very cloudy, and blowing.
	10	29.867	0.063	1 00		29	17.0	Varying from N. by E. to W. S. W. h. S., blowing hard, and raining heavily.
	11	29.865	0.065	1 00		29	17.0	Varying from W. by N. to N. by W., blowing hard, and raining heavily.
	12	29.863	0.067	1 00		29	17.0	Varying from W. by N. to N. by W., blowing hard, and raining heavily.
8th	1	29.861	0.069	1 00		29	17.0	Varying from W. N. W. to N. W., blowing hard, and raining heavily.
	2	29.859	0.071	1 00		29	17.0	Varying from due W. to due N., blowing hard, and raining heavily.
	3	29.857	0.073	1 00		29	17.0	Varying from due W. to due N., blowing hard, and raining heavily.
	4	29.855	0.075	1 00		29	17.0	Varying from due W. to due N., blowing hard, and raining heavily.
	5	29.853	0.077	1 00		29	17.0	Varying from due W. to due N., blowing hard, and raining heavily.
	6	29.851	0.079	1 00		29	17.0	Varying from due W. to due N., not quite so high.
	7	29.849	0.081	1 00		29	17.0	Varying from due W. to due N.: wind decreasing, but still in heavy blasts occasionally.
	8	29.847	0.083	1 00		29	17.0	Varying from due W. to due N.: wind decreasing, but still in heavy blasts occasionally.
	9	29.845	0.085	1 00		29	17.0	Varying from S. W. to N. by W.
	10	29.843	0.087	1 00		29	17.0	Varying from W. S. W. to N. N. W.
	11	29.841	0.089	1 00		29	17.0	Varying from W. by N. to N. by W.
	12	29.839	0.091	1 00		29	17.0	Varying from N. W. to S. W. by S.

Extreme variation during the gale of the Barometer—English, 1.700 in., French, 1.715 in.

J. A. LLOYD, Surveyor-General and Civil Engineer.

GALLOWAY'S WHEEL.

To the Editor of the Nautical Magazine.

Lambeth, March 17, 1837.

SIR,—Observing in your last number, the description of a paddle-wheel lately patented by Mr. Galloway, I beg leave to hand you the copy of a letter from our firm to the Lords Commissioners of the Admiralty in May, 1833, by which it will appear that Mr. Galloway

had been long anticipated in the idea of dividing the boards, and placing them on the cycloidal curve, in which they enter the water. Such a wheel was actually applied to a passage-steamer in the Thames in 1833.

The model presented to the Admiralty is now in the Adelaide Gallery.

Your obedient servant,
JOSHUA FIELD.

“Lambeth, 27th May, 1833.

“Sir,—Having made what we consider an important improvement in the construction of paddle-wheels for steam-vessels, we are anxious to shew a model of a wheel to the Lords Commissioners of the Admiralty, at any time which you may find convenient to appoint for that purpose.

“The objects attained are a more easy entrance and exit of the boards, whereby the power is more directly applied to propelling the vessel; and as this is effected simply, and without any machinery, or moving parts in the wheel, and involves no possible risk, it would be easily applied to any existing wheels at a moderate expense, and with little detention.

“We are therefore desirous, if on inspection of the model, their Lordships should be so disposed, of being allowed to try it on board one of his Majesty's large steam-vessels, in which the speed has been well ascertained under all circumstances, as thus the merits of the principle will be clearly and fairly shewn, and this we shall be willing to do, with their Lordship's permission, free from any expense to the service, unless the alteration made shall be found to answer well.

“We shall be happy to receive your instructions in reply, and are, Sir,

“Your very obedient servants,
(signed) “MAUDSLAY, SONS, AND FIELD.”

“John Barrow, Esq., Secretary to the Admiralty.”

Having given a sketch and description of the wheel here alluded to, in our February number, we consider ourselves bound to lay the foregoing before our readers. Those who take an interest in the subject are perhaps aware that Mr. Field described his wheel in the 7th volume of Newton's “London Journal of Patent Inventions” for 1835. But as this may not be easily referred to, we shall also quote Mr. Field's letter as it appears in p. 240 of that work.

“Sir,—The subject of paddle-wheels for steam-vessels having become very important and interesting to a large proportion of your readers, I request to be allowed to describe an improvement I have made in the arrangement of the boards or floats, by which many of the evils of the ordinary wheel are obviated, and this without the introduction of any mechanism or moving parts, the whole being fixed and solid, like the common wheel.

“The principle may be thus illustrated:—Each board is divided into several parts, or narrower boards, and arranged in, or nearly, such cycloidal curves, that all enter the water at the same place in immediate succession; thus avoiding the shock produced by the entrance of

the common board, so unpleasant to passengers, injurious to the vessel, and wasteful to the power. As the acting force of each board is radiating, it propels while passing under the centre in the ordinary way; and when it emerges, the water escapes simultaneously from each narrow board, and, consequently, cannot take up much."

Mr. Field then proceeds to give a short description of the diagrams accompanying his letter, which is dated "Lambeth, November, 1835." In the 8th volume of the same work, at p. 55, is an account of Mr. Galloway's wheel, from his specification, accompanied by a diagram, and at the conclusion of it are the following remarks of the editor. "In the number above alluded to, will be found a communication from Mr. Joshua Field, in which he has shewn three modes of mounting the floats of paddle-wheels on the cycloidal principle, as used by Messrs. Maudslay, Son, and Field, and submitted by them to the Lords of the Admiralty in the years 1833 and 1835. For our part, we cannot see the difference between the two constructions. Mr. Galloway's invention appears to be a distinction without a difference, for we can conceive no point in that gentleman's specification, that will not be amply anticipated by all competent persons, on reading the communication from Mr. Field."

We must now observe that we were induced to record a description of this wheel in our pages, from its being of interest to *nautical* men, whoever the inventor of it might have been, and without any intention of reviving a discussion as to who the inventor really was. We are, however, at a loss to see any difference between the two wheels, for both in principle and in application, they appear to be the same, and we understand that Mr. Field is now applying his to one of his Majesty's steam-vessels at Woolwich, by direction of the Admiralty.

CONDITION OF BRITISH SEAMEN.*

WE have already glanced at the peculiar temptations of seamen; and what a touching and powerful claim on our sympathy arises from this ground. Profanity, intemperance, extravagance, and licentiousness, are their besetting sins. And, though they may be chargeable with these sins only in common with the depraved of other classes, *their* temptations to commit them are of a kind and a degree peculiar to themselves. The very restraints imposed on the indulgence of their passions while at sea, prepares them on their return to plunge into unusual depths of iniquity. The current of their depravity, which, if left to flow on unchecked and at will, might have exhibited nothing peculiar, acquires, by the temporary check, a fulness and a force, which, on resuming its course, carries them far beyond the point of ordinary sin. During their absence, too, a check has been placed on their friendly and social feelings; they return to meet with

* [From a little volume, entitled "Britannia," noticed in our last number. The picture herein drawn of the present condition of British seamen is so complete, that we cannot aid their cause better than by transferring it to our own pages. We shall follow it up with the condition of seamen in India, in our next.—ED. N.M.]

companions and friends whom they love, and the occasion calls forth and justifies a flow of feeling, but which too often leads to carousal, and ends in excess. Their return to port, too, is not unfrequently felt by them to be an escape from imminent danger; and all that pleasurable excitement experienced on such occasions and which, if rightly directed, would ascend in gratitude to God, too often expresses itself in extra carousals and boisterous mirth. They compliment their own skill and daring; "they sacrifice to their own net, and burn incense to their own drag," and only shout more loudly a bacchanalian song, which drowns the memory of the past, and madly defies the future. Let it be remembered, also, that the accumulated sums in which they receive their wages, give them the power of "running to an excess of riot." Multitudes of our artificers and workmen of various trades, on receiving only the wages of the week, cease to labour as long as a shilling remains: but the sailor receives an amount comparatively inexhaustible; and the consequence is, that his improvidence and excesses are comparatively greater.

But that which constitutes the strength of all the temptations to which the sailor is exposed, is the notorious fact, that they are all organized and plied with the force and certainty of an infernal system. Let the reader peruse and ponder the following accounts of this dreadful system furnished by the late Mr. Walker, whose magisterial office, as we have already intimated, gave him an opportunity of watching the working of the plot. "There is no class of men who meet with such ill-treatment from their fellow-creatures as sailors. After suffering the hardships of the sea, and toiling with unconquerable labour, they are beset on their return from each voyage by the most villainous and most profligate of the species, for the purpose of robbing them of their hard-earned wages; whilst those who should step forward to protect them, leave them to their fate, or even hold that they are capable of nothing better. When a vessel arrives from a long voyage, the crimps, or keepers of sailors' lodging-houses, are on the alert to get as many of the crew into their power as possible. Boats are sent to fetch the men ashore, and the watermen receive a fee from each crimp for every sailor they can bring. The sailors leave the vessel, often, I believe, made half-drunk, without money, and with nothing but their chest, upon which the crimps advance them money, till they receive their wages. Every temptation is put in their way to lead them to extravagance and recklessness. An exorbitant bill is made out, the amount of which is deducted from their wages, and they are robbed or defrauded of the balance. As soon as they land, they are sponged upon by a set of idle fellows, who hang about the docks, pretending to be unable to get employment, or to have been old shipmates; they are defrauded by low Jews, under colour of selling them worthless articles cheap; and they are plundered and imposed upon by the most profligate women. It is in a great measure a confederation against them, from which they have no chance of escape. Each party plays more or less into the other's hands. I have occasion to see frequent instances of these abominations, and in general they are so contrived, that there is no remedy or punishment. It frequently happens that a sailor, who has sixty or seventy pounds to receive, will have, at the end of a few days, an enormous bill made out against him

by a crimp, for what he and his hangers-on are alleged to have consumed, and for money advanced to supply his extravagance in his freaks of intoxication. For his balance there is an eager contest among the harpies who surround him, which leads them sometimes to the most barefaced and scandalous practices. . . . In the lowest of the sailors' public-houses, there are, at the back, what are called long-rooms, the walls of which are painted with ships or other devices: and here are to be witnessed at almost all hours, but principally at night, scenes of the greatest villany and debasement. Sailors who are entrapped into these long-rooms, or similar places, are kept in a constant state of reckless excitement, and they never think of returning to sea, till they have got rid of all their wages; indeed, I believe, they are not unfrequently glad when their means are gone, as the only chance they have of escaping from the fangs of those who surround them."

In corroboration of this affecting statement, the writer would add the following paragraph, from Mr. Mark Moore's "Evidence before the Committee of the House of Commons, on drunkenness," in 1834:—"For more than three years I was connected with a Society established for the improvement both of the morals and the temporal condition of sailors, and in that capacity I had an opportunity of seeing not only a great deal of sailors, but also of their places of resort, at the east end of London. I have visited, for that purpose, most of the public-houses in that part of the metropolis, and I suppose there are not less than twenty of those houses, where, at the back of the gin-shops, there are what are called 'long-rooms;' those long-rooms will contain from 100 to 300 persons; and every evening, almost, all those rooms are full of sailors and girls of the town, and a class of men, principally Jews, called '*Crimps*;' and it is truly distressing to see the demoralization not only of the sailors, but also of the other individuals who frequent those disgraceful places. Some of these houses, I am sorry to say, are kept open at all hours during the night. I have been into those 'long-rooms' at ten and eleven o'clock at night; and the whole company, perhaps 200 or 300 persons, have been drinking and dancing, till the poor fellows are in a most dreadful state. It is a very common practice for the girls to get various articles, such as laudanum, and other drugs, put into the liquor of the sailors, who thus become completely intoxicated: they are then easily prevailed upon to accompany them to their lodgings, and they soon sink into a state of total stupefaction: they are then robbed of every penny they possess, and very often of their new clothes; and, when they awake, an old jacket and an old pair of trowsers are all the articles left to them. I have known instances of men being thus robbed of £30, £40, or £50 at a time." What a complication of temptation, debasement, and helplessness!

But let us trace the working of the system a step farther, and we shall find that the despoilers of these helpless victims often become their accusers. "It is a subject that comes particularly home to me," says Mr. Walker, "because I have had occasion so often to become acquainted, in my magisterial capacity, with the dreadful impositions, robberies, and profligacy, which are consequent upon the arrival of any number of vessels from distant parts of the globe; and, from the arts

that are practised against sailors by gangs of confederates, in decoying and stupifying them with liquor, and with drugs, it is generally quite impossible to fix any proof of guilt. In fact, they are almost helplessly exposed to every combination of villany, and, whether they are the accusers or the accused, they are almost equally objects of pity. I have known instances of sailors being robbed of fifty pounds, or upwards, the very day they received it; but having been first rendered senseless, detection is impossible. Sometimes, the day following their coming ashore, or even the same day, they are themselves brought for drunkenness and disorder, the consequence of conspiracy against them; and when remonstrated with on their imprudence, they will pathetically lament their helpless situation."

Now, what can result from such a state of things operating on minds already vicious—what, but a rapid growth of depravity, tormenting remorse, self-abandonment, and recklessness in guilt, which shall prepare them, in turn, to become the tempters and the destroyers of others! But are we not responsible for the continuance of this system of iniquity? To the full amount to which, under God, it is in our power to correct the evil, unquestionably we are. And, be it remembered, that every moment we delay to take the necessary steps, the evil goes on increasing in vigour, and extending its operations.

In confirmation of this statement, the public papers report that a series of scandalous frauds have lately been brought to light in Doctors' Commons. They have been effected by parties who have taken out letters of administration, and made oath of their being next of kin, or only surviving relatives, of seamen who have died at sea, and thus obtained the wages due to them at their decease. The fraudulent parties have consisted chiefly of Jew crimps, swearing that they are brothers of the deceased seamen; or else, in concert with women pretending to be the wives of the deceased. This solitary fact would be sufficient to give us an idea of the organized nature of the system in operation against seamen; of the wide ramifications of that system; of the daring and determined character of those who work the system, and follow it as their ordinary calling; and who, not content with ruining the sailor in life, follow and persecute him after death, in the person of his poor and suffering relatives. It may give us also an idea of the utter helplessness of the sailor in the hands of such a class, when even his legal protectors themselves can be thus deceived and overreached by them. Like the flying fish, which escapes from the *albacore* in its native element, only to be pounced on by the *man-of-war bird*, waiting to devour it, the sailor no sooner escapes the perils of the deep, than he is the object of instant attack from those who live by preying and feasting on his misery, on shore. On coming to anchor, he exhibits the spectacle of a helpless victim, bound hand and foot, and passed from the ship to the crimp, from the crimp to the long-room, from the long-room to the brothel, and from the brothel to a ship again—watched and guarded at every stage, and his fetters unrelaxed—glad to escape, though with injured health, and the loss of all his earnings, to take refuge amidst the perils of the sea from the greater perils of the land.

The neglected and debased condition of our seamen renders them the means of immense evil to others, both at home and abroad. Its pernicious effects do not terminate with themselves. Ship-owners suffer, and

the maritime interest generally. How many vessels have been lost, how many valuable cargoes sunk, through the one sin of drunkenness alone! "Society at large," observes Mr. Walker, "is much interested, from selfish motives, as well as from motives of humanity, in shutting up the fertile field which the improvidence of sailors offers to vice and crime. And even a regard for the profligates and criminals themselves should induce an effort to remove temptation out of their way." "It is a matter of great consequence also to the rest of society, on its own account, because the harvest which the present state of seafaring men affords to the vicious and the criminal, is one great cause of so many depreddators, who prey at other times upon the various classes of the public. . . . It is to be observed, that the immense quantity of crime and pauperism that springs directly and indirectly from the present want of moral cultivation among sailors, is to be paid for by the public, in addition to their wages. . . . If any labourer by his improvidence becomes a pauper, or causes any of those who ought to be dependent on him to become paupers, the expense of that pauperism is to be added to his wages, to make up the whole cost of his labour; and, in the same manner, if he is guilty of crime, or tempts others to be guilty, the expense incident to that crime is likewise to be reckoned part of the cost of his labour, though it is not paid by his employers, but by the public."

From this representation, then, it is evident, that the merchant, the political economist, the statesman, and the patriot, are alike called on to remedy the evils we deprecate, and are all interested in the success of their measures. But the christian philanthropist, without undervaluing these considerations, will look above and beyond them all, to the moral effects of these evils. Here, he will say, is a large class of men who cannot be ruined themselves, without instrumentally injuring and ruining multitudes of others. The interest and energy peculiar to their character invest them with considerable influence over those with whom they associate, and, if that influence be evil, the injury must be immense. Many of them have families: from a summary, shewing the number of families of Great Britain, engaged in, and dependent on, each great branch of production and occupation, it appears that the number of families of the maritime class at our great sea-ports and naval stations, Liverpool, Plymouth, Portsmouth, &c., (*exclusive of the metropolis.*) is 55,528; and in our minor sea-ports and fishing-towns, 65,083. The heads of all these families, it is true, are not directly and personally seafaring, but the great majority of them are; and who can calculate the amount of evil which they are the means of propagating among the thousands and tens of thousands of souls, of which their families are composed! "The ignorant, ungodly seaman's cottage, is the habitation of extravagance and want, of riot and wretchedness, of misery and sin. He returns to it after a successful voyage, only to expend his hard-earned wages in excess and irreligion; and he leaves it again in hunger, in wretchedness, and in rags."* Whether the supposition be true, that that dreadful scourge, the cholera, pursued the course of rivers, and the outline of the coast, or not, here, at least, is a moral epidemic, a thousandfold more fatal, pursuing this identical track,

* The Ocean.

diffusing infection wherever it comes, and raging with a virulence which sweeps off almost all before it. But, unlike those who attempted in vain the removal of that malady, we possess a grand specific for the disease which we deplore. Shall we delay to administer it? "Is there no balm in Gilead? is there no physician there? why then is not the health of the daughter of my people recovered?"

But the christian philanthropist will remember that the evil does not terminate at home. Our sailors carry the moral contagion abroad. A traveller in Egypt relates, with astonishment, that he met with natives of that country who could utter the most awful oaths in the English language, although they knew no other words in our tongue. His inquiries soon elicited the information, that they had learnt thus to swear from our sailors. Truly might they say—

"You taught us language; and our profit is,
We know how to curse!"

It is well known that the blasphemies of our sailors became a by-word and a proverb, and the oath they most commonly swore, the nick-name by which they were called.

"In a striking instance mentioned to me,* by one of our arctic adventurers, such was the pernicious effect of the ill behaviour of a body of our countrymen in a remote district of North America, that disgrace had been entailed both upon the nation to which they belonged, and the religion which they professed. Such irreparable injury had they done to their character in their dealings with the natives, that, were the Indians of that district called upon to describe, by a single word, the character of a man in all respects false, dishonest, and base, they would designate him by the name of a *christian!*"

The greatest obstacles to the success of many of our missionary efforts abroad, have hitherto arisen from the depraved and atrocious conduct of British and American seamen. At the last anniversary of the British and Foreign Sailors' Society, the Rev. Mr. Williams, a missionary from the South Sea Islands, declared the dreadful effects produced on the minds and manners of the natives, by the profligacy and cruelty of seamen, and deplored the visits of many of them as a source of demoralization to the heathen part of the population, and of fear to those who are converted.

Evidence to the same effect might be furnished in abundance from the records of our various missionary societies. In the Church Missionary Register, a letter from Captain W. Jacob, of the East India Company's service, refers to a battle fought between some native tribes in the "Bay of Islands," in Feb. 1830, "which arose out of a dispute between two of the wretched objects who had been welcomed on board the — by her commander. These transactions owe their origin entirely to that improper intercourse which it is lamentable to find is too generally allowed between the most degraded portion of the native population and the shipping, to the scandal of our country in that part of the world. There is much to discourage missionary efforts in the scenes of immorality and vice which are constantly exhibited, through the intercourse subsisting between the islands and the shipping, and the

* Discourses to Seamen; by the Rev. W. Scoresby, Chaplain of the Mariners' Church, Liverpool, &c.

dissolute habits of many of the inhabitants which that intercourse has engendered. While we were solemnizing Divine service at Korosarika, we were much concerned to find that, within hearing, and within sight of our congregation, two boats, full of Europeans from the whalers in the bay, were rioting in a state of brutal intoxication, to the disgrace of their country. These are among the numerous hindrances which at present exist to any extensive reception of Christianity among the people."

The Rev. W. O. Croggan, Wesleyan missionary at Zante, in a letter dated May 8, 1833, remarks, "the state of British sailors abroad is shocking beyond description. It grieves one to the heart to behold them so given up to intoxication." An appeal from the London Missionary Society, Dec. 16, 1833, alluding to "the baneful influence of seamen on foreign missions," remarks, "Our brethren state, that the besetting sin in Tahiti at present is drunkenness; that it has produced the greatest mischief in the churches; and this state of things, which fills the directors with the greatest distress, is attributed greatly to American and British sailors, who have established a number of grog-shops on shore, for the purpose of retailing spirits, and who have induced the chiefs to become traffickers in rum."

The history of their conduct at Lahaina alone, one of the Sandwich group of islands, would be sufficient to brand their character with lasting disgrace. Often have they sent armed boats on shore there for the most licentious purposes, and have even carried away many of the native women from the island. And more than once they have thus landed, with the sworn determination of firing the missionaries' houses, and taking their lives, on account of the restraints which, through missionary influence, had been laid on their licentious practices. And, doubtless, had they not been prevented by the natives, who armed in multitudes to protect their religious teachers, they would have carried their murderous threats into effect. But what a deep reproach to Britain does this scene exhibit—a people, just emerging from the most barbarous heathenism, "defending with their lives the ministers of Christ, whilst Britons, shameless Britons, panted to wade through their blood to gratify their sinful passions!"

The unbridled licentiousness of our seamen is written in many places in characters which will not soon be effaced—in deep, dreadful traces of *disease*. Odious maladies—the brand-marks of unhallowed passions—once unknown to the poor islanders of the Pacific and the Southern Oceans, painfully attest that the British sailor has been there. But, among the numerous and distressing illustrations which might be furnished of the depraved conduct of our sailors abroad, the following, supplied by a captain commanding one of the Hon. East India Company's ships, strikes the writer as most affecting:—"When I was lying at —, in the East Indies, with seven or eight sail of East India ships in company, most of the men in the fleet were following their own corrupt inclinations (i. e. on the Sabbath-day) on shore. And it is painful to relate, that so depraved, and so extremely wicked, were their manners, that it even affected the feel-

* Related by Mr. Timpson in his, "What have I to do with Sailors?" page 18, 19: an excellent manual, especially for young persons.

ings of the heathen natives ; so much so, that the idolatrous priests, and others associated with those chiefs in their worship, used every means in their power to prevail on those *christian* sailors to embrace their religion ; and it appeared they had no other motive than that of making them better men."

Well, indeed, might the language of the prophet to rebellious Israel be addressed to multitudes of our British sailors, *Ye have been a curse among the heathen*. What a powerful counteracting effect must their evil influence exercise on missionary labour ! Whether they go before the missionary, and pre-occupy the ground with thorns, or come after him, and sow tares among the wheat ; whether they influence the natives by simply inoculating them with the virus of their own depravity, or prejudice their minds against the English character, and the christian name, by acts of cruelty and oppression, the effects must be alike injurious to missionary success. Like the South American chief in the early days of Spanish conquest, when the priest travelled in the rear of the advancing army to baptize the captive converts, the heathen natives can but little desire to go to the heaven which the missionary proclaims, if the English sailor is to be there also. By our concern, then, for the success of the gospel in foreign lands, we are bound to ameliorate the character of our seamen. There is a sense, too, in which they themselves are to be regarded as missionaries. Yes, whether we will or not, they are missionaries. The world has its missionaries, as well as the church, and these are they. And, until they are rendered missionaries of good, they will continue to act as missionaries of evil ; and will operate far more extensively in ruining the souls of men, than the missionaries of the gospel do in saving them.

But if they now form a mighty agency of evil, they might become a powerful agency of good. If our apathy and neglect do not forbid, the language of the prophet to Israel may be confidently applied to them :—" It shall come to pass that as ye were a curse among the heathen, so will I save you, and ye shall be a blessing."

There are many elements in their character, which, when baptized and sanctified by the Holy Spirit, contain the promise of eminent *piety*. May we not warrantably suppose, that this was one reason why the Saviour of the world devoted so much of his ministry to the maritime part of the Jewish population ? Capernaum, on the sea of Tiberias, was his adopted town. It was on the " sea-coast" that he commenced, and principally pursued his ministry. There, the greater proportion of " his mighty works were performed." His largest audiences were composed of the inhabitants of the sea-coasts ; he found the greatest number of disciples there ; and there his cause most illustriously triumphed.

The character of the class is substantially the same still. They are capable of quick and abiding impressions ; full of grateful and generous affections ; with a superstitious but strong belief in a superintending Providence ; a deep veneration for signs, and omens, and old observances ; a feeling of intense interest in tales relating to the invisible world, and to the appearance of spiritual beings. This must be evident to any one who knows any thing of the marvellous stories of the fair weather middle watch ; and the very figure at the bow—

derived from the ancient *tutela*, or chosen patron of the ship, to which prayers and sacrifices were daily offered, and which was held so sacred as to offer a sanctuary to those who fled to it—even this figure, considering the deep feelings with which it is generally regarded, indicates the existence of a state of mind, the very reverse of a selfish, cold, heartless scepticism. Here, then, are elements of the most improveable nature; a deep substratum of rich and warm feeling, such as we may suppose the apostle Paul would have delighted to work in; and which, by whomsoever it may be wrought in earnestness and faith, could not fail, under the Divine blessing, to issue in a character of simple, glowing, and vigorous piety.

Other characteristics mark them out for eminent *usefulness*. And might not our Lord have been influenced, in the selection of his disciples, by a regard to these qualities? Peter and Andrew, James and John—a third part of his disciples—were called from their ships to follow him; Matthew was called from the quay of Capernaum; and it would appear, from the account of a scene subsequent to the resurrection of Christ, John xxi. 1—3, that “Thomas and Nathaniel, . . . and two other of his disciples,” were not strangers to the work of “casting a net into the sea;” and even St. Paul himself was a native and citizen of a maritime city. He knew that their apostolic duties would subject them to privations, require courage, and call them to sail to distant places to become “fishers of men.” For this, their daily employment had prepared them; rendering them hardy, laborious, and bold. And, accordingly, after his ascension, we find them voluntarily incurring the greatest dangers, patiently enduring the greatest toils, and compassing sea and land, to achieve the noblest objects.

The same intrepidity, ardour, and devotedness to the cause they espouse, distinguish our seamen as a class; these are the qualities which have made them useful to their country; and the same characteristics which have rendered them so eminently serviceable to the cause of Britain, need only be sanctified and rightly directed, in order to be equally useful in the cause of God. Happy day for Britain, when her maritime population “shall be holiness to the Lord!” Then, her sailors shall return, not to “riot in chambering and wantonness,” but to tell of “the works of the Lord, and his wonders in the deep;” they “shall visit their habitation, and shall not sin.” Their arrival on shore shall furnish occasion for grateful praise, and their departure to sea shall call forth prayers and devout commendations to God. The very qualities which now make them to be feared and shunned, shall then excite affection and esteem; for they shall coast our shores, and sail from port to port, as the agents of Christian benevolence, freighted with the blessings of the gospel of peace.

And does not their *calling* mark them out for extensive usefulness, as well as their character? In a literal sense, their “field is the world.” They are citizens of the world. They are the missionaries of commerce to the ends of the earth; and, whether the church of God avail itself of their agency or not, to the ends of the earth they will continue to go;—what an instrumentality is here! what a magnificent agency for good! And shall it remain comparatively unemployed? Is there not ground to believe that one of the reasons why

Britain has been allowed to possess the commerce of the world is, that she might possess the necessary facilities for the evangelization of the world? Is it not remarkable that the three nations in which reformed Christianity chiefly prevails,—England, America, and Holland,—should be the three most commercial nations?—and must not the obvious design of Providence in this marked arrangement, force itself on every reflecting Christian mind? Had England acted in accordance with this design; had we duly regarded the welfare of our sailors, and trained them up in the fear of the Lord, how different an aspect might the world, at this moment, have presented! How much, for instance, might we have done for China by this time, by the mere distribution of tracts, had our sailors been men “valiant for the truth;” whereas those very sailors themselves are there perishing for lack of knowledge; and an affecting appeal has just been made to the Christians of Britain in their behalf, by a missionary of another land!*

The commercial ascendancy of a nation is said to last about 200 years; of that period 100 years of our trading superiority have already elapsed; the way, the only and the certain way, to prolong our ascendancy is to answer the end of it. Through the patience and goodness of God, our neglected facilities for extending the kingdom of Christ are still spared to us. Our commerce is still universal, requiring 126 consuls at foreign ports, and commercial cities. Our sailors may yet be made a blessing to the ends of the earth. Not only might they be restrained from being a hindrance to the missionary's efforts abroad, but they might become his active and powerful auxiliaries. The ancient Jews were denominated *God's witnesses*,—to give evidence to the world in his behalf; Christians are called the *epistles of Christ*, and are said to be known and read of all men. Pious sailors would eminently realize this purpose. If unable to be *witnesses*—to proclaim the gospel with their lips, they would yet be *epistles*—speaking to the eye by the silent eloquence of a holy useful life. And this is a language which needs no translation, no interpreter; men of every tongue can understand it; it is the only true universal language. In some instances, indeed, our sailors already answer this purpose; “the Christian natives in the South Sea Islands are delighted with the arrival of a *praying ship*, or a *believing ship*.” Seamen might often precede our missionaries, and prepare the way for them. By the distribution of bibles and tracts, and by the thousand methods which a holy ingenuity will devise, they might virtually take possession of a heathen land in the name of him who is King of kings and Lord of lords, as they do of a newly-discovered land in the name of their earthly sovereign. They might become the pioneers, or the agents, of the Christian church in every land.

How interesting the spectacle of a cloud of shipping in one of our mercantile ports, availing themselves of the same tide, and spreading their sails to the same auspicious breeze, to depart on their respective voyages! For a short time, they all proceed down channel together; but as “the great and wide sea” expands before them, they strike off

* Rev. E. Stevens, American Seamen's Chaplain at Whampoa, China, in an *Appeal to the Friends of Seamen in England*.

in all directions, and every day they diverge wider and farther from each other, till eventually they are scattered over the face of the world. "There go the ships!"—said the psalmist, when contemplating the sublime spectacle, and filling his mind with great thoughts of nature and providence. And will not the church sanctify that sublimity, and behold in the navigated sea a glorious agency of grace? "There go the ships!" the Christian might say, as he stood and gazed at a numerous fleet diverging and disappearing in the distant horizon;—*there go the ships*, laden with treasures more precious than those of the navy of Solomon when freighted with the ivory and the gold of Ophir; in one of them are tracts; in another, bibles; in another, missionaries; in all of them men, who, like the Christian mariners of the Galilean lake, are "the messengers of the churches, and the glory of Christ,"—men of simple, earnest, glowing piety, who go to be "fishers of men," in all nations, kindreds, and climes, on the face of the earth. The prayers of the church waft them on their several ways: angels convoy them; He who brought the ship of the disciples safe to land is present with them; and the very ends of the earth shall be glad for them.

The example of our Divine Master points our attention to sailors, with all the force of an express command. His marked and devoted attention to the maritime districts of Palestine, had been the subject of early prophecy, Isaiah ix. 1; and, when the prediction was fulfilled, it was made the subject of evangelic history, Matt. iv. 13—16. "Leaving* Nazareth, he came and dwelt in Capernaum, which is upon the sea-coast, in the borders of Zabulon and Nephthalim: that it might be fulfilled which was spoken by Esaias the prophet, saying, the land of Zabulon and the land of Nephthalim, by the way of the sea, beyond Jordan, Galilee of the Gentiles: the people which sat in darkness saw great light; and to them which sat in the region and shadow of death, light is sprung up." We have already seen that, in fulfilment of this prophecy, our Lord commenced, and principally pursued, his ministry on the sea-coasts. There he performed his greatest miracles, found his largest audiences, and called most of his apostles. Though Bethlehem was his birth-place; Nazareth the residence of Joseph and Mary; and Jerusalem, the metropolis of the land; yet Capernaum, a sea-port, † was his adopted, "his own city." The synagogue was the appointed place for religious instruction, but he went to the beach to proclaim the kingdom of God. The beach was crowded, for "the people pressed to hear the word of God;" "so he went into a ship, ‡ and the whole multitude stood on the shore. And he spake many things unto them in parables." Here we see the Saviour having recourse to extraordinary methods for the good of the maritime class; and has he not in this, as in every other

* Or, *entirely* leaving Nazareth, *καταλιπων*.

† The inhabitants of Palestine, in the vicinity of the Lake, still call it by its ancient and scriptural name, *the sea*. In conformity with this usage, Capernaum is sometimes spoken of as a *sea-port*; though, perhaps, the more appropriate appellation would be a *fishing-town*.

‡ *το πλοιον*, *the vessel* or boat. Mr. Wakefield supposes, with much probability, that a particular vessel was kept on the lake, for the use of Christ and his disciples.

respect, left us an example that we should walk in his steps? Shall he walk forth to the sea-side, as if he would show us the way to this destitute class, and shall we leave him to walk there alone while we sit still in the house. Shall he consecrate the quay, the strand, the deck of the ship, by his sacred presence, and personal activity, and shall not we enter in and endeavour to fill these spheres of usefulness, in his name, and to his glory.

But the motives which should urge us to cultivate the improvement of our seamen are endless. *Ordinary consistency requires it.* We are concerned for the welfare of every other class of our countrymen; we are sending the gospel to the people of every other land; shall the men to whom we must be indebted for conveying it, be the only class comparatively disregarded? *National self-respect requires it.* A maritime figure is our chosen emblem: Britannia is the boasted personification of the nation; by the adoption of this appropriate symbol we proclaim to the world our naval character. But should we be pleased to find that other nations regarded our sailors as the proper representatives of our national morality? and yet would they not be justified in so regarding them? Ought we not to feel every reproach on our seamen, as a stigma applying to the nation? Might not Britannia be drawn, like the daughter of Zion, weeping,—disconsolate and weeping for her neglected children? *Our holy rivalry with our daughter land calls for it,* for though England is doing something, yet “still more extensive efforts for the improvement of the religious and moral condition of seamen, are made in the commercial towns of America.” *And the voice of prophecy calls for and encourages it;* for “the abundance of the sea shall be converted unto thee. . . . Surely, the isles shall wait for me, and the ships of Tarshish first, to bring thy sons from far, their silver and their gold with them, unto the name of the Lord thy God.” And even “the merchandize of Tyre shall be holiness to the Lord.” Every description of maritime agency shall be consecrated and made subservient to the universal extension of the Divine empire.

PERMANENT DIFFERENCE OF LEVEL IN DIFFERENT PARTS OF THE OCEAN CONSIDERED.

[Concluded from page 313.]

THE molecules of the ocean press with forces proportioned to the height of its surface, in all directions, whilst in a state of rest; which is the natural state. When therefore the surface, from any cause, is thrown out of its level, the particles will be pressed against each other with unequal forces; and when this state is induced by incidental circumstances, it does not remain so necessarily, to the full continuance of the existing cause, as the disarrangement itself urges into action the particles sustaining the greater pressure, whereby those which sustain the least, are driven out of their position, and raised up, until the surface again becomes level, and so on, until rest is obtained by the cessation of the cause entirely.

This action is evident, when waves are created by the wind; the activity of the governing property of the fluid, incessantly striving to overcome the undue pressure, or disarrangement, and to be at rest;

or, in other words, to preserve its level. And where any permanent cause, such as a perennial wind, or current, continually acts upon the fluid, and the intervention of land opposes its continuous flow, the same active principle of seeking its level prevails, and the superfluous water is spread abroad; pursues various courses for a final outlet, and if that be denied it, it escapes beneath the surface back whence it came; and thus maintains the law of equality of level which nature has imparted to it as a necessary condition. Hence it appears, (without calling to aid the gravity of attraction, and leaving aside the action of the tides as doubtful or rather an undetermined point,) to amount to a physical impossibility, for any parts of a continuous fluid, such as the ocean surrounding the globe, however distant these may be, or though partially separated by the intervention of land, to be *permanently* higher or lower than other parts; for no circumstance can rob the fluid of the energetic property which nature has given it. Not even the extreme cold of the polar regions can accomplish this effectually; for although the intensity of frost may arrest a superficial portion of the ocean's surface, yet, the mass will rise, and fall, and flow on, in spite of the congealing principle.

The inner portion of a minor inlet of the ocean may have its surface risen by an accumulation of water pressed in by a continuance of heavy gales of wind; but this effect (at no time of great elevation, under any strength of wind, where there are or are not tides) would cease with the cessation of the cause. In large inland seas and gulfs, however, this operation would not take place, as there would be room for the drift of the surface waters to spread abroad; and under all circumstances of super-currents, whether permanent or occasional, nature exerts her vigilance in opposing disarrangement, by counter and sub-currents, which also effect an interchange of waters.

Again, a difference of level may sometimes be found on either side of an isthmus, occasioned by the tides being governed respectively, in a great measure, by local circumstances; and this occurrence may have given rise to the belief of there being a permanent difference of level in some parts of the world: for instance, it is stated in geographical works, that, in the "bay" of Fundy, the tide rises in one or two places as high as sixty or seventy feet, whilst at Green bay, in the gulf of St. Lawrence, separated from the former by a narrow isthmus, the rise amounts only to eight feet; and upon these facts, extraordinary indeed, and of which there is no doubt, it has been assumed that the bay of Fundy is on a much higher level than the gulf of St. Lawrence. Unless it has been proved, (of which, however, we have seen no notice,) by multiplied observations that the reciprocation of the tides are such in both gulfs as to keep the water of the one *perpetually* higher than that of the other, the assumption would, of course, be groundless; and we cannot help thinking that it is so. It is highly probable that, if the reciprocations were watched with care on either coast, it would be found that, at times, the level of the gulf of St. Lawrence was higher in a trifling degree than that of the bay of Fundy. The time of high-water in the bay of Fundy at the full and change is twelve hours, and the mean in the gulf of St. Lawrence 6 h. 45 m. a difference of 5 h. 15 m. The mean rise of the tides at spring and neap, in the former is 26 feet, in the latter 8 feet 2 inches.

When therefore it is high-water in the gulf of St. Lawrence, it will want 4 feet 6 inches of low-water in the bay of Fundy, so that the level of the St. Lawrence will be 3 feet 8 inches above that of the bay of Fundy. This may not be precisely correct, but it is probably not far from the truth. The declension of the land between bay Verte and the shore of Funday is, from the former to the latter; the head of the river Messaquash, which falls into the bay of Fundy, being only four miles from bay Verte.

The narrow gulfs of Suez and Akaba, on either side of the peninsula of Sinai, at the northern extreme of the Red Sea, may, and have, no doubt, their waters occasionally pressed into these, and their levels risen above their usual elevations; but we think it equally certain that when the cause of this influx ceases, the accumulated waters return to their former level, which we consider is that of the ocean generally. Southerly gales, in conjunction with the flood, would create this; but a re-action would be going on at the same time, and at most, the rise could not be great, or it would flow over the sandy ridge at the head of the gulf of Suez.

To those readers who may entertain any doubt that such re-action would inevitably take place as a consequence of accumulation, where the shore is not a "dead-flat," or sufficiently low to admit the water to overflow, may be recommended practical observations and experiments, which there is no doubt, would speedily convince them.

In the whole length of the Red Sea, which is about 1,500 miles in a N.N.W., and S.S.E. direction, there is not a stream that can be dignified with the appellation of river; and this fact goes directly to disprove the idea of its once having been a lake. The climate is generally hot, and the winds high, and of course evaporation active; all which is in opposition to the assumption of a higher level, according to the reasoning of the advocates themselves. The tides, although rapid, do not rise high, and in many places are not in accordance with the moon's passing the meridian. They are also much affected by the winds, as well as the currents too—in consequence of which, near the town of Suez, it sometimes happens that the bed of the gulf is left dry all across to the opposite shore. It is clear, therefore, that upon such an occasion, the level must be lowered; and when the contrary happens, were it not for an elevated ridge of sand along the head of the gulf, a low tract which lies to the northward, and which is stated to be thirty-five feet below the level of the sea, would be inundated. This depressed surface was probably, at some remote period, a continuation of the gulf, as it consists of sea-sand and shells, and has several ponds of salt-water on it. In the changes which are occurring in many parts of the coasts of the ocean, it is not unlikely to happen that, the entire gulf will be filled up with sand, from the combined action of the tides, the currents, and the winds; and thus give countenance to the popular opinion often expressed, of the sea having receded.

The modern foundation of the opinion of a superior level, may perhaps have been derived from the statement of the French engineers: they having, it is said, decided by measurement, that a difference existed of thirty-three feet, between the level of the Red Sea, and that of the Mediterranean. Considering the vicissitudes which occur at

the head of the gulf, it would appear that a single trial ought not to be received as decisive of a *permanent* superior level. That the French officers may have really found the level higher, (although the amount is astonishingly great,) is not disputed, but that it is *permanent*, may be doubted. The idea is of old standing, and it is not improbable, that like some of the fables of ancient days, it had really some facts as a basis: such as an occasional accumulation of water at the head of the gulf, and its overtopping the barrier; and the depressed surface of land to the northward; yet, there are strong proofs remaining of a navigable communication between the two seas by the Nile having once existed.

According to meteorological observation, any accumulation of water in the gulf of Suez can only be occasional, and perhaps happens during the prevalence of the S.E. monsoon, as northerly winds are reported to be pretty constant there for nine months of the year, and often blow with great violence. The effect of these would be to lower the water-line below the mark it would occupy in a period of calm at low-water. But this, although the bed be laid dry at the extreme, would be trifling in the general level.

If the nature of the ground offer no insurmountable obstacle to the cutting of a canal from the Red Sea to the Mediterranean, it is worthy of belief, that such might be opened without any effect of the sort occurring, as the supposed permanent difference of level has given rise to. There need be no apprehension of the *rush* of water from the Arabian gulf being greater than on ordinary occasions; nor of the junction creating any local disarrangement farther than that of throwing a little water into the neighbouring waddies. The tidal operation would call for some degree of ingenuity to guard against its probable effects; as it is inconsiderable and weak on the Mediterranean side, and therefore rather favourable than otherwise; the attention would have to be directed principally to the point of influx on the southern shore.

We have not been able to discover any undeniable reasons for a *permanent* superior elevation of the one sea over the other; we have seen none that can at all support the opinion, supposing the circumstance possible.

The current running into the Mediterranean has long ago been enlisted as a convincing argument, that that internal sea must be on a lower level than the Atlantic; and to account for this depression being *permanent*, an ever varying phenomenon of nature, evaporation, has been advanced! What says common-sense to such philosophy, that the Atlantic, the wide ranging Atlantic, as part of the mighty ocean, encompassing the globe, by throwing a fractional portion of its surface-waters through the strait of Gibraltar, which is sufficiently wide to conduct the supply, if it were required for such a purpose, would prevent any disarrangement of level that excessive evaporation might otherwise be supposed to create. Such disarrangement is only ideal, the vigilance of nature being incessantly interposed to prevent it; and to consider that such an undue amount of evaporation takes place in the Mediterranean, as a branch of the ocean, is to admit mal-administration in the operations of nature herself—a doctrine which no rational mind ought to entertain for a moment. If, as may

be supposed, the sandy and thirsty nature of great part of the coasts bordering this sea, on the one hand, and the absorption of volcanic fires, on the other, continually draw off a vast amount of the fluid—would it not be equally consonant to sound philosophy to suppose at the same time, that nature, ever vigilant, dispenses a compensation in the amount discharged by rivers, and from the clouds; and that, from causes ever varying, the amount drawn up by evaporation is nicely regulated, so that upon the whole, a balance is struck with precision?

If the current always running into this sea be in part (which however is not here supposed) an action for upholding that balance, it might be taken for certain, that in some way or other compensation is awarded to the Atlantic, perhaps, from causes remotely situated, so that there should not be a jar in the harmony of the system taken as a whole.

It appears that the advocates for the hypothesis of the depressed* level, have not taken into consideration the true cause of the current running into the Mediterranean; they have been looking to the interior of that inclosed water for it, when in fact it lies in the Atlantic, if not, in its origin, remote from that ocean. They have seized upon the abstract circumstance of a stream constantly pressing inwards into a sea which has no other communication with the ocean, than the one through which the current finds entry; and as the shores are not flooded, it follows, say they, that the surface must be kept at a lower level by some potent cause, and that can only be by excess of evaporation. The theory of this may be very pretty, and on the first blush very plausible also; but it will not, nevertheless, upheld by whomsoever it may be, stand the test of rigid investigation.

Without tracing back the remote causes, all seamen know that there is a tendency of the eastern portion of the Atlantic waters to move, at a variable rate, towards the shores of Western Europe, and Northern Africa, and of course to flow, as a necessary consequence, into the opening between the two continents. This tendency is here occasioned by the accessions brought by the Florida stream, and the Arctic currents, being pressed onwards by the prevalence of westerly winds.

The inflow is simply the natural consequence of water in motion meeting with an opening, and of itself can have no reference to, or be considered correctly as a proof of, a depressed level of the sea into which it finds its way; for the fact is proved, that some portion escapes on either side, and that an *under current* exists in this strait, which there is no doubt returns just as much water as is received by the super-current. Besides, if there were in reality a permanently depressed level, there could be no sub-current, as the depression being constant, that movement would be impossible. It is worthy of belief, that if experiments were tried with care, the depth of this current of the strait of Gibraltar would not be found great, and that the actual amount of water which enters, would consequently be ascertained to be very much less than the mere constancy and velocity of the stream would lead us to imagine.

It may be temerity to breathe a doubt of the correctness of such high

* The Mediterranean is said to lose, by evaporation, four thousand two hundred and sixty millions of tons per day.

authority, as Dr. Halley, whose calculation seems to have upheld the assumption of the depressed level of the Mediterranean. Nevertheless the philosopher, like the man of ordinary mind, is at best but a fallible mortal; and it may be that the doctor's admirers have held his *calculus* in more estimation than he himself did. This philosopher's theory of the trade-winds may be considered as the most perfect and agreeable to natural laws of any which have been given: and if it can be shewn that reasonable doubts exist for distrusting his calculation respecting the evaporation from the Mediterranean, ought it to be considered presumptive—a pigmy striving to dislodge a giant!! what of that? David slew Goliath!!!

It appears then, that in no seven consecutive days of any season will the amount of evaporation, in any particular district, be found the same; indeed it may be asserted, that, not always in any twelve hours out of twenty-four, would it be found regular. Besides, on the various shores of the Mediterranean, high temperature, and high wind, upon which evaporation in amount seems principally to be regulated, not uniform, and adventitious circumstances—such as cloudy and foggy weather, a clear sky, sun-shine, &c., constantly occurring to augment or diminish its amount, would prevent the possibility of any calculation even coming near to an approximation of the truth, in a sea the superficies of which are so great.

The same may be urged with respect to the supplies from rivers, and from pluvial discharges, which are so dependent on variable circumstances, except, perhaps, in a very circumscribed space with the latter. The ingenuity and talent exercised in such arithmetical calculations, may be admired as one may admire artificial flowers, which being only for display, are otherwise without value. "The clearing of the lunar distance," is a piece of mental figuring really of intrinsic worth, and the grand computations of the astronomer truly wonderful; and indeed, who is there but must acknowledge the great power and capacity of mind in the man, who could by calculation, predict the return of one of those mysterious wanderers of the heavens, after the lapse of nearly a century? Doctor Halley, as every body knows, was the philosopher who accomplished this grand feat.

And, after all, "who shall decide when doctors disagree?" In a philosophical work it is stated, that "the evaporation of water is about equal to the fall of rain." This appears more reasonable than the following computation of another philosopher: "It has been assumed, upon calculation, that more water is evaporated than rain falls, by 16·191 cubic miles of water."*

If the former be applied to the Mediterranean, it would follow that the waters discharged from rivers, (at least a certain portion,) and the amount brought in by current, according to the reasoners of the depression, combined, would rather produce a contrary effect, to raise the level—a *medium* is advocated in this paper, and both are considered *equal*, that is: the amount of evaporation is equal to the discharge of rain, snow, and river supplies—and the level of the Mediterranean and the Atlantic are the same.

* Quære: Where does the residue go? At that rate the whole ocean ultimately will be dried up; and when all moisture shall have been evaporated, there will be an end to animal and vegetable life.

If the great oceanic tidal wave advances from the south, (as it is said to do,) it would follow that, to a certain degree, the surface of the Atlantic without the strait of Gibraltar, will be risen twice in rather more than twenty-four hours, above the level of the Mediterranean; but as this is an alternation from the natural level, it cannot apply in the case here arguing. What effect it may have on the stream of the strait, it may be necessary to consider.

The great utility of currents must be obvious to all reflecting persons, in their brisk circulation, conjoined with the action of the winds, and the tidal operations, may be discerned the potent principle which tends directly to the preservation of the waters of the ocean in a state of purity. The stream flowing into the Mediterranean, divested of the mystery thrown around it, is simply a part of this complicated, but effectual system of nature; and the true explanation of the circumstance seems to be, that, an interchange of waters takes place between the Atlantic and the Mediterranean, by means of a super, and a sub-current, and this operation, as perfect in accomplishment as it is in design, preserves the level of each, as if there were no currents moving either way.

It has been stated in some works that the Pacific is considerably higher than the Caribbean sea. This conjecture, for it is nothing more, has probably arisen from the well-known circumstance, fully stated by Don Ulloa, of the tide rising to a great height in the bay of Panama, (and which so astonished the early Spanish adventurers,) and only two or three feet on the Atlantic side. In this case, as in many others, there seems to have been a hasty confounding of two circumstances; one that happens at intervals, and another that is conjectural. According to the opinion of the advocates for differences of level, the very reverse of what has been supposed to be the fact here, should follow from the relative positions of the two portions of the ocean. The equatorial current, and the trade-wind *drift*, according to their reasoning, ought to *raise* the level of the Caribbean sea above that of the Pacific at low-water. But, whenever a superior or a depressed level has been insisted upon, the consideration of the matter has not yet gone beyond the mere abstract question; a mode of settling points which must be allowed to be as negligent, as it is certain to lead to false conclusions. If there be no insurmountable obstacles in the way, the cutting of a navigable canal across the Isthmus of Darien, would be as beneficial, as it would be a magnificent undertaking. The following account goes directly to disprove the conjecture of a difference of level: The province of Choco is watered by the river San Juan, which enters the Pacific ocean. An artificial branch of this river, called the *Raspadura*,* at $5^{\circ} 10' N.$, and navigable for canoes, communicates with the river *Atrato*, which enters the gulf of Darien at $8^{\circ} 3' N.$, so that, by this branch, the Pacific and Atlantic are in positive navigable communication. It was by means of this navigation that the Cacao of Guayaquil was brought to Carthagen.

The old notion, now we believe exploded, monstrous from its magnitude, of the Atlantic being on a lower level than the Indian Ocean, amounted to a rank heresy in hydrography; and if there should be any

* Vide Sir Wm. Draper's testy reply to Junius.

modern believers of such in existence, a philosophical bull should forthwith be proclaimed by the Royal Geographical Society, against all who uphold such a doctrine, until they recant, and become orthodox again! This supposition has been revived in our recollection, by a modern surmise somewhat similar, although not on so vast a scale, but still great enough to rouse astonishment. The tendency of the waters of the north Atlantic is said to be towards the middle portion of that ocean, and the probability of a reduced level there, is surmised—a kind of hollow space, or depressed surface—it being considered certain that the setting of the currents is such as might be expected to take place, if such hollow existed. It is well known that the centre of the North Atlantic is an area almost, if not quite, surrounded by a belt of flowing waters; and these currents may be said to aid each other, through the action of the winds, in keeping up a pretty constant, if not an altogether permanent motion, with some variation in their velocities. Some persons have conjectured that a vast eddy exists within the area, whilst others consider that there is little or no motion of the waters within it, and the idea has been started in a scientific work that the vast accumulation of *fucus* therein found, may answer in lieu of currents in preserving the fluid pure. Currents in various directions are as common there as elsewhere—that counter *sets* must take place as a consequence of the action of the permanent currents, there can be no disputing, for these have been found existing from the Azores to the Bermudas, and so round to the Bahamas.

Why should there necessarily be a *hollow*, or *depressed level*, in the centre of the Atlantic, merely because currents are found setting towards it, or, which is more to our purpose, how is it possible such a hollow could exist in the basin of so vast an ocean, or be maintained in a state of depression, if the currents on all sides, and at all times, flowed into it; unless, indeed, it be admitted that a *vortex* was there occasioned by a perforation leading into the bowels of the earth—a wonder which must be taken for granted, that nobody will be willing to admit, seeing that it would rival the American captain's notion of the earth being hollow, with a hole at the pole to go through! If such a perforation existed, what with internal fissures and caverns, and "central fires," the whole ocean would speedily be drained, for it is a mere wafer in point of depth, compared with the diameter of the globe itself, unless indeed the vortex went through and through, in which case, on the other side, we should expect to find a glorious *jet d'eau*, a magnificent shower-bath that would go nigh to *mistify* the ideas of the Polynesians, however *cool* it might keep their heads!!

Whether a vortex or whirlpool, on so large a scale, could exist in the middle ocean seems very doubtful: in the first place, the bed of the sea must approximate the surface, and the sub-marine rocks be in such a peculiar position as to affect the motion of the currents, and these currents must be deep, unless the rocks are very near to the surface.

Charybdis and Malström, the two celebrated vortices, are only dangerous at a certain state of the winds, currents, and tides; the former appears to be occasioned solely by the meeting of currents; and the latter by the action of the tides, in conjunction with the peculiar disposition of the islands, and submarine rocks. Such a phenomenon in the open ocean has nowhere, that we are aware of, been noticed, and

it is highly probable, if such a vortex as above surmised existed, its position would have long since been settled. Many have passed through, and cruised over the area, without noticing anything that could afford the slightest reason for such an opinion, and it goes far to let us into this secret—that the most gifted minds are not altogether free from fanciful ideas, which are far removed from the dictates of sound judgment, and plain common-sense. Indeed, the whole space has been pretty well intersected by the keels of the shipping of various nations, and the most astonishing spectacle witnessed by navigators has been the immense floats of sea-weed which, like the currents, have proved a puzzle!

In concluding this “long yarn,” we may be allowed to say, in the professional language of the “Big-wigs” of Westminster Hall, that the logic of a plain seaman has been employed in it, to *make out a case*—and to shew why the anomalous *cause* of a permanent higher or lower level, should be *struck* off the hydrographic *rolls*, and be “entombed in the Red Sea,” the unconscious waters of which, seem to have first given rise to the *suit*! And, if it savours here and there of a little harmless pleasantry—if not *cum privilegio*, at least upon the strength of *immemorial custom*, the *vapoury* emanation of a very *pharos* of philosophy has been commented on in the course of *special pleading*, the good natured reader will consider the *quo animo*, and set it all down, whether discreet or not, to a zealous endeavour to arrive at truth, rather than to an unbecoming presumption. He will also bear in mind, that it became necessary in the enquiry to present the “*rationale* of facts, arguments, and processes,” and “to place under his inspection that central thread of common sense, on which the pearls of analytical research are invariably strung.”

ARGONAUT.

NAVAL PATENTS AND PATENTEES.—PERING'S ANCHOR.

To the Editor of the Nautical Magazine.

SIR,—I can by no means assent to “Mercator’s” doctrine, “that a writer on matters affecting the public interest, has a right to make (for brevity’s sake) any assertions he may think proper;” not being able to comprehend how the “public interest” can be advanced, any more than that of an individual, by any assertions which have not truth for their basis.

Were your correspondent alone concerned, I should not feel myself called on to reply to a writer, who professes to consider himself thus privileged, and who appears disposed to make up in personalities what may be wanting in facts. The subject, however, is too interesting in a public point of view to be thus dropped; and I expect to shew, before I conclude, that “Mercator” has not, on this occasion, been fortunate in his assertions.

“Mercator,” in his August article, speaking of Mr. Pering’s anchor, says, “it is one attended with great expense, and that it does not effect the end in view, the continual breaking of anchors in the service, sufficiently proves.” He is invited to prove a single instance where a pro-

perly constructed anchor, on the plan referred to, has broken. How does he meet this appeal? Why, by repeating "that there is not a king's yard, nor a naval store, where abundant instances are not to be found of broken anchors returned from his Majesty's ships;" from whence he deduces an inference, which, to him appears incontestible, "that they must either be presumed to be made upon Mr. Pering's plan, or else Mr. Pering's is not the plan adopted in his Majesty's yards."

To say nothing of the fallacy of this reasoning (if reasoning it can be called) on the face of it, can one, who professes to know so much about the king's yards, be ignorant that, although no anchors have for many years been made in those yards, but on Mr. Pering's plans, his anchors still form but a small proportion of the total in store. No ship, it is true, is allowed to go to sea without having on board, at least, one of Mr. Pering's anchors, provided there be a suitable one in store? but others, as well as "Mercator," may doubt whether true economy is consulted in entrusting so much of life and valuable property to so large a proportion of an inferior article.

"Mercator" has taken offence at its being required that Mr. Pering's plan be judged by "properly constructed articles;" yet, surely, this is not too much to ask for any invention: and, as regards expense, if your correspondent will give himself the trouble of referring to the competent authorities, he will find himself as much mistaken on this head, as when he arrives at the conclusion that, because anchors are broken, therefore they must be Mr. Pering's.

If your correspondent will refer to the reports of the trials made at Portsmouth before Admiral Sir Frederick Maitland, and the naval officers of that port, he will be satisfied of the accuracy of my statement about the "small palm anchor." He seems to forget, when he says, I "must enter a little more into particulars," that I have, in the letter inserted in your January number, to which he refers, stated, that Mr. Pering's plan was not adopted "until repeated trials had established its great superiority over every other;" and that "its most essential parts have been copied in every subsequent attempt by others to improve upon it." For the first of those positions, I appeal to the records of the trials referred to; for the second, I will just notice the fact, that the anchor, upon Mr. Pering's improved plan, for which he obtained his second patent, was tried against one by another inventor, in which his principles had been adopted.

I am, Sir, your most obedient servant,

AN OBSERVER.

MORGAN'S PADDLE-WHEEL.

IN several numbers of this work, a discussion has been carried on respecting the merits of Morgan's wheel, a drawing of which will be found in our present number, fig. 1 representing a side view, and fig. 2 an end view of it. This wheel was originally the invention of Mr. Elijah Galloway, and was patented by him in 1829. It is stated that the first trial made of it was with a steam-vessel belonging to Mr. William Morgan, who became the purchaser of the patent right, and thereby the proprietor of the wheel. The Lords Commissioners of the

Fig. 2.

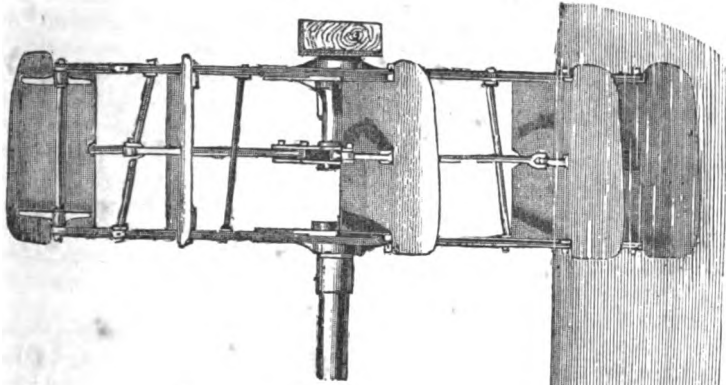
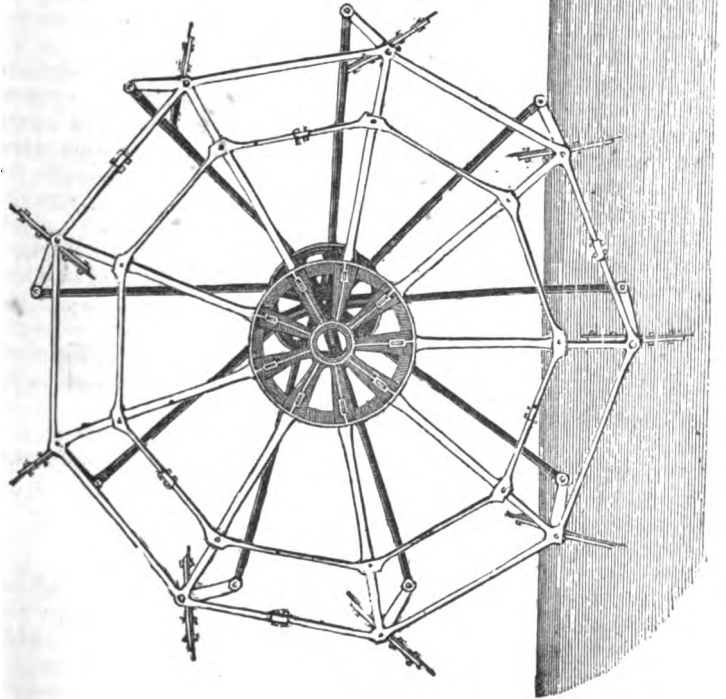


Fig. 1.



MORGAN'S PADDLE-WHEELS.

Admiralty were induced to order a pair of these wheels to be fitted to H.M. St. V. *Confiance*, and on the 9th of September, 1830, an official trial of the wheel took place. Commodore (now Rear-Admiral Sir Samuel) Warren, accompanied by Mr. Lang, of Woolwich dockyard, was on board the *Confiance* on this occasion, and a favourable report was made on the wheels, since which time they have been applied to several others of his Majesty's steam-vessels. Mr. Galloway says:— "The object of this wheel is to provide a remedy for the loss of power and other inconveniences arising from the oblique position in which the float-boards of the common paddle-wheels enter and leave the water. This the inventor purposes to effect by causing each float-board to turn, or rather vibrate on an axis at its edge next the centre of the paddle-wheel, through the medium of projecting levers, firmly fixed to the float-boards, at their axis of motion, and connecting rods proceeding from the extremities of these levers to the extremity of a fixed crank, adjustable at a given distance from the centre of motion of the paddle-wheel, which consists of radiating arms connected at their extremities by strengthening braces."

The report of Commodore Warren stated, that with twenty-three and a half revolutions of the engine (twenty-four to twenty-five revolutions being their regulated speed) the vessel had improved in speed (as far as could be collected from so limited a trial) from one to one and a half knots per hour; that, although the floats in leaving at such rapidity must necessarily disturb the water, so perfectly were the ill effects of the backwater obviated, that when the vessel was going at her utmost speed, he had caused a wherry, which was being towed astern, to be hauled up alongside, and close up to the paddle-box without the slightest inconvenience, or without her shipping even a spray; and finally, that the previous vibration suffered from the action of the wheels was so reduced, as to be barely sensible on the paddle-box itself.

There has been much controversy, as our readers well know, on the merits of these wheels, and it is certain that they may be considered almost exclusively employed by government. Those merits have been fully investigated, and the result has shewn that their greatest efficiency is at deep immersions; indeed, we have heard of instances where in these cases the common wheel would have been useless. They have been pronounced unmechanical, and assuredly the shaft being divided to allow of the revolution of the connecting rods which produce the vibration or change of angle in the direction which the paddle-board takes on entering and leaving the water, must necessarily weaken the whole wheel. However, the wheel, notwithstanding its expensive and complicated machinery, has done its work well.

LIGHTHOUSES ON THE COAST OF IRELAND.

WE have received the following notification of the Sligo Harbour lighthouses, recently erected on Oyster Island, from our correspondent, Mr. George Halpin, of Dublin.

The corporation for preserving and improving the port of Dublin, &c., give notice, that two lighthouses have been built on Oyster Island,

Sligo Bay, from which lights will be exhibited on the evening of the 1st of August, 1837, and thenceforth from sun-set to sun-rise.

Specification given of the position and appearance of the towers, by Mr. Halpin, Inspector of the Irish lighthouses.

The two towers erected on Oyster Island, in Sligo Bay, bear from each other N. N. W. $\frac{3}{4}$ W. and S. S. E. $\frac{3}{4}$ E. distant 496 feet, and kept in line will lead in the deepest water over the bar, and clear of the Bun Gar Bank.

The lights will be fixed bright lights, visible from S. E. $\frac{1}{2}$ E. to N. W. by N.

The northern lighthouse

Bears by compass.		(Var. 28° 30'.)
From the Wheaten Rock,	S. E.	distant 3 sea miles.
. . . . Black Rock,	S. E. $\frac{1}{4}$ E.	. . . 1 $\frac{3}{4}$ do.
. . . . Perch Rock,	S. E. $\frac{3}{4}$ S.	. . . $\frac{1}{4}$ do.

The northern lighthouse shut on the north point of Coney Island, will clear the Wheaten Rock.

The towers are circular, coloured white, and the lanterns elevated over the mean level of the sea.

North lighthouse	43 feet.
South lighthouse	53 feet.

The north lighthouse may be seen at a distance of eleven miles, and the south lighthouse at a distance of twelve miles, in clear weather.

(By Order,) H. VEREKER, Sec.

Ballast Office, Dublin, 4th May, 1837.

ON THE PROTECTION OF SHIPS FROM LIGHTNING. *By William Snow Harris, F.R.S., &c. &c.*

No. I.*

1. THE disastrous effects of lightning on ship-board, whether they be considered with reference to the lives of seamen, the loss of property, or as involving the naval and commercial interests of Britain, are most appalling; and it has therefore become a question of very serious consequence to her maritime power, how far her fleets can be protected from the destructive operation of this powerful element.

2. We may observe, in reviewing the numerous instances in which ships have suffered from discharges of atmospheric electricity, that they have usually occurred at different times, in distant places, and commonly to single ships, and have therefore excited rather an individual than a general interest. Hence the accumulated evil has seldom been fully appreciated; indeed, an idea that the chances of damage at sea by lightning are few, aided probably by the notion somewhat prevalent amongst sailors, that the proposed methods of defence are objectionable, has caused the only effectual means of par-

* The papers, of which this is the first, have already appeared in our volume for 1834; but as so many numbers of our former series are out of print, and a complete copy of it not to be had, we have determined on reprinting these papers—a course which the importance of the subject alone would justify.—ED. N. M.

rying natural electrical discharges to be on ship-board greatly neglected.

3. The consequences to our maritime interests, of so partial and imperfect an apprehension of this interesting subject, are numerous and important. A selection of a few only, from the great variety of cases in which ships have been damaged by lightning, may probably be the best illustration of them; it cannot fail, on an attentive examination, to impress every one anxious for the security of our fleets, and shipping generally, with the necessity of applying some correction to so great an evil.

(a) His Majesty's ship *Russell*, on the 5th of October, 1795, was struck by lightning about three leagues from Belleisle: the explosion fell on the *main* and *mizen masts throughout*, and disabled the masts so much that no sail could be carried on them when it blew fresh. If the squall had lasted a few hours longer, the ship *must have inevitably been lost on the French coast*, as the wind blew right on it.¹

(b) In the year 1793, his Majesty's ship *Duke*, of 90 guns, was struck by lightning off the island of Martinique, *whilst in action under a battery*, which shivered her main-topmast, and did other damage to the vessel.²

(c) In the autumn of 1813, great part of the Mediterranean fleet was struck by lightning off the mouth of the Rhone, so that *out of thirteen sail of the line about one half were damaged*, and at least five ships were obliged to shift their topmasts.³ The fleet was at this time employed under Lord Exmouth, in blockading Toulon.

(d) His Majesty's ship *Glory* was struck by lightning off Cape Finisterre, in the fleet commanded by Sir Robert Calder, a few days previously to his meeting the combined fleets of the enemy. She was *quite disabled in her mainmast*, and the *topgallantmast* and *topmast rent from the head to the heel*.⁴

(e) In the summer of 1830, his Majesty's ships *Gloucester* and *Melville* were both damaged by lightning at Malta, whilst in the act of sailing to join the Mediterranean fleet, so that they were obliged to return and refit.⁵

(f) In November, 1832, at 1 P.M. his Majesty's ship *Southampton*, one of a powerful fleet destined for an important service, was struck by lightning in the Downs, which set fire to the mat on the mizen top-sail-yard, severely damaged the mizen-mast, and, having considerably shook many of the quarter-deck beams, descended into the gun-room, and caused a serious apprehension of the ship being on fire. Two men at the wheel were considerably hurt.⁶

(g) On the 23d of February, 1799, his Majesty's ship *Terrible* was struck by lightning: the fore-topmast and foremast were destroyed. Two carlings were shivered in pieces directly over the *fore magazine*. The officer of the watch said that the lightning ran in a circular stream down the foremast.⁷

(h) His Majesty's ship *Gibraltar*, in 1801, had her foremast shivered by lightning, which descended into the gunner's store-room, and

1. Naval Chronicle.

2. From the late Admiral Bedford, R.N.

3. Captain Barnard, R.N. See also ship's log.

4. From the late Lieut. Boucher, R.N. See ship's log also.

5. Ship's log.

6. Nautical Magazine, Jan. 1833.

7. Naval Chronicle.

shattered the shot-boxes, underneath which were situated 400 barrels of gunpowder.⁸

(i) In the year 1748, the ship *Dover* was struck by lightning in lat. 47° 30' north, long. 22° 15' west; the mainmast was completely disabled, the upper deck stove in, as also the lower deck, all the cabins on one side the steerage knocked down, and four of the outside planks on the starboard side started from the timbers, one of which planks, being the second from the wale, was broke asunder, and let into the ship, in about ten or fifteen minutes' time, nine feet of water.⁹

(j) The French ship *Coquin* was struck by lightning at anchor in the Bay of Naples, on Christmas-day, 1820. The electric discharge passed through her bottom a little below the water's edge, so that she became speedily in a sinking state. The boats of the squadron then lying in Naples Bay assisted to slip her cables, and run her on shore in the mole.¹⁰

(k) His Majesty's ship *Thisbe* was struck by lightning on the 3d of January, 1784, or 1785, off the coast of Ireland, during a heavy gale of wind: the lightning struck the main-yard, passed down into the gun-room, and swept along the decks. The furled sail on the main-yard burst into a flame, which quickly passed along the rigging to the other masts, so that the whole was in a blaze. In this dilemma, the master cut the lanyards of the main shrouds, and the mast fell bodily over the side, carrying with it the fore-topmast and mizenmast. He then, in a skilful way, wore the ship, and finally preserved her from destruction.¹¹

(l) The ship *Logan*, of New York, of 420 tons burthen, was struck by lightning on her passage from Savannah to Liverpool, on the 19th December, 1832. The electric discharge descended into the hold, and set the ship on fire. The vessel and cargo were eventually destroyed totally, the whole loss being upwards of £19,000. The crew were fortunately saved in the boats.¹²

(m) His Majesty's ship *Cambrian* was struck by lightning off Plymouth, on the 22d February, 1799. The electric discharge fell on the foremast, killed two men, and wounded several others. The number of wounded men taken below was about twenty; many of them were insensible, and apparently dead. The appearance of the ship was distressing in the extreme, nor could the men for some time get rid of the impression produced on them.¹³

(n) His Majesty's ship *Repulse* was struck by lightning in the Bay of Roses, by which nine men were lost overboard, and several burned. The main-topmast was much damaged.¹⁴

(o) His Majesty's ship *Sultan* was struck by lightning at Port-Mahon, August 12, 1808, by which five men were killed on the jib-boom, three severely burned, and two lost overboard.¹⁵

4. The above-mentioned instances of damage by lightning on ship-board are calculated to excite reflections of great national consequence.

8. Ship's log.

9. Philosophical Transactions.

10. From the late Mr. Nelson, R.N., who was present.

11. From the late Mr. Moore, R.N.

12. Courier Newspaper, Feb. 20, 1833.

13. Captain Haydya, R.N.

14. Lieut. Lancaster, R.N.

15. Ship's log.

The first (a) is a powerful illustration of the hazardous situation in which a ship of the line was placed on an enemy's coast.

The second (b) is an instance in which a ship-of-the-line was partially disabled by lightning whilst in action.

The third (c) is an instance in which about one-half of a fleet employed in blockading an enemy's port were more or less disabled. The disadvantage to the country, had the ships been then required for action, (a supposition by no means unwarranted,) is almost incalculable.

The fourth, fifth, and sixth, (d) (e) (f), are similar in the probable consequences. The ships in cases (d) and (f) were actually in requisition, and in case (e) we may suppose the emergency to have been pressing. Now, the absence of two line-of-battle ships from a fleet might be fatal in the result of a general action.

The seventh and eighth (g) (h) shew the liability of discharges of lightning to explode in the vicinity of a ship's magazine: and this also applies to the preceding instance (f).

The ninth and tenth (i) (j) prove, that a ship may be so damaged by a stroke of lightning as to become speedily in a sinking state.

Eleven and twelve (k) (l) shew the liability of ships to be burned from the same cause.

Thirteen, fourteen, and fifteen, (m) (n) (o) are melancholy instances of loss of life, and of the untoward effect produced on the minds of the ships' company, tending to paralyze their exertions.

5. It is not unreasonable to infer, from a due consideration of these cases, that many ships, the loss of which, from the length of time they have been missing, is nearly certain; have either directly, or indirectly, suffered by lightning; for, whilst our marine remains undefended from this source of danger, there is no fatal damage incidental to their perilous situation on the sea by which they may not be suddenly and unexpectedly assailed; more particularly, when we consider the many hazardous circumstances under which ships are exposed to natural electricity, in consequence of the unavoidable position of many parts in their construction. In many of our 18-gun brigs, there is an iron spindle, which the capstan works upon, placed directly over the after-magazine; and in all the larger class brigs, and corvettes, the spindle of the capstan terminates in the same point, in metallic fastenings. This would certainly admit of the electric matter passing in the direction of the capstan spindle, at the extremity of which it would probably assume a condensed and sensible state. In addition to this, it may be remarked, that the foremast and mizenmast, in most ships, invariably pass within a few feet of the magazines, and in some of the French-built frigates the foremast usually passes through one of them. Now, the masts commonly determine the course of the lightning to the hull; and we shall find, that, in consequence of their imperfect conducting power, the danger is extreme. It is not, therefore, unlikely, that many ships long missing have been destroyed by atmospheric electricity. Thus, his Majesty's ship *Resistance*, of 44 guns, and the *Loup Cervier*, the foremasts of which passed through the fore-magazines, were seen previously to severe lightning, and were never seen after. The *York*, of 64 guns, was also found missing, in a very unaccountable way, in the Mediterranean.

6. The impolicy of allowing the fleets of a country like Britain to remain exposed to these fearful contingencies, when, in all reasonable probability, such exposure may be avoided, cannot for an instant be doubted. The question, therefore, on a review of all the circumstances, returns upon our own feelings and interests with increased claims, and we are led to inquire, how far it is possible to palliate, or otherwise altogether to parry, the violent operations of discharges of lightning on ship-board. Happily this question, in the present state of science, is no longer obscure; a copious collection of facts, derived from the experience of more than half a century, have sufficiently proved, that we may effectually defend our ships and seamen from the fury of lightning, by simple and available means, and by the judicious employment of scientific principles, furnished by patient inquiry into the nature and mode of action of the element with which we have to contend.

7. It is to be greatly regretted, that the differences of opinion respecting the utility of lightning-conductors on ship-board, should have so frequently arisen, from imperfect and partial views of the nature of electrical action. The subject has seldom been treated in all its extent: the broad way of science has been constantly neglected, for the intricate and uncertain path of individual prejudice and opinion. Hence it is, that the mere presence of an insignificant chain of wire, occasionally applied to the masts and rigging of a ship, has been not unfrequently viewed as an agent of destruction, which, by a specific attractive force assumed to exist within it, is calculated to draw down an electric explosion on the vessel. The mere lightning-conductor is made an exclusive object of contention, and the intelligible principles of a given mode of defence, as reduced to a consistent system, are altogether disregarded.

It will be my endeavour, in the succeeding papers, to examine in a general way the nature of electrical action, and to shew, by carefully adhering to the only certain means by which science can be advanced, viz., observation and experiment, that it is possible to arrive at an effectual method of defence from lightning on ship-board, so as to obtain, under all the varying circumstances and conditions of ships' masts, as complete a protection as can be reasonably hoped for in the present state of natural knowledge.

Naval Chronicle.

MOVEMENTS OF THE ROYAL NAVY, 20TH MAY.

Sd., sailed; arr., arrived; rem., remained.

AT HOME.

PORTSMOUTH.—22d Feb.: *Fair Rosamond*; paid off. 4th March: *Viper*, 6; arr. from north coast of Spain. 12th: *Carysfort*, 26; sd. for Mediterranean. 22d: *Snake*, 16; sd. for the West Indies. April 11th: *Pelorus*, 16, sd., for East India station. 10th: *Sparrowhawk*, 16; commissioned by Com. J. Shepherd. 11th: *Tyne*, 28; taken into harbour to pay off. 12th: sd., *Lightning*, St.V. for Woolwich, to repair. 26th: arr. and sd., *Cracker*, cutter, for Jersey. 15th: arr., *Wasp*, 16. 23d: arr. *Thunder*, Capt. R. Owen, from West Indies; moved into harbour to pay off on 24th. 27th: paid off, *Wasp*, 16. 26th: sd., *Volcano*, St.V., for Falmouth. 4th May: *Thunder*,

sur. vessel; paid off. 3d: arr., *Columbia*, steamer; and sd. next day for Santander. 11th: arr., *Cornwallis*, 74. 13th: *Hazard*, 16; commissioned by Capt. J. Wilkinson. 18th: *Princess Charlotte*, 104; anchored at Spithead:—*Romney*, commissioned by Lt. C. Jenkin. 20th May: sd., *Cornwallis*, 74, for North American command, with flag of Vice-Admiral Hon. Sir Charles Paget.

AT SPITHEAD.—*Hercules*, 74; *Sparrow*, cutter; *Princess Charlotte*, 104.

IN HARBOUR.—*Britannia*, 120; *Royal George*, yacht; *Victory*, 104; *Excellent*; *Larne*, 18; *Sparrowhawk*, 16; *Fair Rosamond*, sch.; *Romney*, 30; *Hazard*, 16.

IN DOCK.—*Warspite*, 16; *Benbow*, 74; *Illustrious*, 74; *President*, 62; *Hyacinth*, 18; *Tyne*, 28; *Alligator*, 28; *Edinburgh*, 74.

IN BASIN.—*Ariadne*, 28; *Dryad*, 42; *Brisk*, 3.

PLYMOUTH.—2d Feb.: sd., *Dido*, 18, for Mediterranean. 18th: *Canopus*, 84; paid off. 18th March: sd., *Inconstant*, 36, for Tagus. 23d: arr., *Dee*, St.V., from West Indies. 21st: sd., *Trinculo*, 16, for the coast of Spain. 24th: arr., *Forte*, 44, from West Indies. 7th April: arr., *Ringdove*, 16, from north coast of Spain. 15th: sd., *Scorpion*, 10, to relieve homeward bound. 18th: arr., *Scorpion*, 10, from cruising for relief of homeward bound. 20th: *Forester*, 3, Lieut. G. G. Mialls, from Africa; taken into Hamoaze to pay off. 23d: arr., *Hermes*, St.V., to repair: sd., *Viper*, 6, for Gambia and Sierra Leone, taking specie. 22d: *Lapwing*; touched on her way to Chatham: *Pluto*, St.V., sd. for Woolwich to undergo alteration. 23d: sd., *Salamanca*, St.V., for north coast of Spain. 20th: *Saracen*, 10, undocked. 21st: *Ringdove*, 16; undocked. 12th: paid off, *Forte*, 44. 13th: paid off, *Saracen*, 16, and recommissioned by Lieut. W. Hill. 28th: *Comus*, 18; moved into the sound. 5th May: *Cornwallis*, 74; moved into the sound. 5th: paid off, *Forester*, 3, Lieut. Com. G. Miall. 3d: arr., *Lightning*, St.V., (sd. 4th from Woolwich,) and next day for Pembroke. 4th: arr., *Spey*, from Falmouth and Brazils. 5th: arr., *Columbia*, steamer, from Portsmouth: *Wizard*, 10, commissioned by Lieut. J. L. Harvey. 7th: sd. *Columbia*, St.V., for north coast of Spain. 10th: sd., *Cornwallis*, 74, for Portsmouth, and *Sappho*, 16, for West Indies. 12th: sd., *Comus*, 18, for West Indies. 13th: arr. *Pembroke*, 74, from Malta. 14th: arr., *Jaseur*, 16, from Gibraltar, to pay off.

IN THE SOUND.—*Scorpion*, 10; *Jaseur*, 16; in quarantine.

IN HAMOAZE.—*Royal Adelaide*, 104; *San Josef*, 110; *Ringdove*, 16; *Hermes*, steamer; *Wizard*, 10; *Pembroke*, 74; *Saracen*, 10.

SHEERNESS.—29th March: *Vernon* was paid off this day. 13th April: *Castor*, 36; commissioned by Capt. E. Collier. 8th May: *Seringapatam*, 46; proceeded to the Little Nore, and on 11th sailed for Portsmouth.

WOOLWICH.—13th April: paid off, *Dee*, St.V.

ABROAD.

ASCENSION.—26th March: rem., *Thalia*, 46. BARBADOS.—24th March: rem., *Galatea* and *Griffon*, 3. 1st: arr., *Harry*, 10. 14: sd., *Vestal*; rem., *Belvidera*. BARCELONA.—31st March: rem., *Cliv*, 16. BATAVIA.—15th Nov.: arr., *Zebra*, 16, from Sydney. BILBAO.—31st March: rem., *Scylla*, 16; *Savage*, 10; *Speedy*, cutter. BONNY R.—5th Dec.: *Scout*, 18; captured a Spanish slaver off here with 111 slaves. BUENOS AYRES.—17th Jan: arr., *Fly*, 18, from Rio. CALLAO.—10th Feb.: rem., *Talbot*, 28. 7th Jan.: arr., *Blonde*, 46. CAPE OF GOOD HOPE.—18th Jan.: arr., *Dolphin*, 10, from Ascension. 3d March: sd., *Conway*, 28, for Ceylon. CORFU.—6th March: sd., *Sapphire*, 28, for Malta. GIBRALTAR.—11th March: arr., *Jaseur*, 16. 13th: *Carysfort*, 26, from Portsmouth. 14th: *Clio*, 16; from Taragona. 10th April; rem., *Childers*, 16. 24th: arr., *Pembroke*, 74, on her way home. JAMAICA, P.R.—15th March: sd., *Skipjack*, 6, for Chagres. 11th: *Satellite*, 18, arr. from Chagres. 15th: *Melville*, 74, with flag of Sir Peter Halkett, for Bermuda and Halifax; rem., *Rainbow*, 28; *Racchorse*, 18; *Racer*, 16; *Nimrod*, 20; *Madagascar*, 46. Feb. 27th: sd., *Champion*, 18, for Carthage. 11th: sd., *Wasp*, 16, for England. 16th March: sd., *Melville*, 74, for Havana: *Satellite*, 18, for Mexico; *Wanderer*, 16, for Nassau, (N.P.) April 3d: *Cruizer*, 16, on a cruise. 4th: *Madagascar*, 46, for Carthage. KEDGEREE.—13th Jan.: arr., *Andromache*, 28. LISBON.—23d April: sd., *Pique*, 36; *Inconstant*, 36; and *Talavera*, 74: rem., *Hastings*, 74; *Malabar*, 74; *Minden*, 74; *Trinculo*, 16; *Partridge*; *Nightingale*; *Cameleon*. MADEIRA.—4th April: arr., *Snake*, 16; and sd., 6th, for West Indies. 7th: arr., *Flamer*. 13th: arr. *Ranger*; and sd., 14th, for Teneriffe. 21st: arr., *Pelorus*, 16, from Portsmouth. MALTA.—Feb. 17th: arr., *Tyne*, 28. 20th: *Orestes*, 18, from Barcelona. March 4th: *Wolverine*, 16. 5th: *Rapid*, 10, from Tripoli. 20th: *Carysfort*, 26. 12th: rem., *Asia*, 84; about to sail for Athens to relieve *Portland*, 50, (she sd. 24th March.) 3d April: sd., *Pembroke*, 74, for England: rem., *Caledonia*, 120, flag of Sir Josias

Rowley; *Revenge*, 78; *Pembroke*, 74; *Vanguard*, 80; *Ceylon*; *Barham*, 50; *Sapphire*, 28; *Orestes*, 18; *Dido*, 18; *Rapid*, 10; *Wolverine*, 16; *Confiance*, St.V.; *Spitfire*, St.V. MAURITIUS.—30th Jan.: rem., *Pelican*, 16. OAHEE, Sandwich I.—23d Oct.: arr., *Acteon*, 26, from Valparaiso. PASSAGES.—31st March: rem., *North Star*, 28; *Phoenix*, St.V.; *Rhadamanthus*, St.V. PERNAMBUCO.—18th Feb.: rem., *Dublin*, 50. RIO-JANEIRO.—Jan. 27th: arr., *Conway*, 28, from Falmouth; and sd., 29th, for Cape. Feb. 16th: arr., *Cleopatra*, 26, from Falkland Islands. 23d: arr., *Dublin*, 50. 5th Feb.: sd., *Conway*, 28, for the East Indies. 15th March: sd., *Cleopatra*, 26, for Valparaiso. SANTANDER.—31st March: rem., *Tweed*, 20. SAN SEBASTIAN.—31st Mar.: rem., *Royalist*, 10. 27th April: arr., *Salamander*, St.V. SYDNEY.—14th Dec.: arr., *Rattlesnake*, 28, from Port Philip. SINGAPORE.—5th Dec.: sd., *Raleigh*, 16, and *Wolfe*, 18, for Malacca.

ROCKET COMMUNICATION WITH DISTRESSED VESSELS. — We have been not a little surprized at the receipt of a printed circular from Hull, informing us that experiments were made in November last, for the purpose of effecting a communication at all times with vessels in distress from the shore. We could not have imagined that such a place as Hull had remained so long without a rocket establishment for this purpose, and that it was only in November last that the discovery was made, that this could really be done. Is there no one in all Hull who reads the *Nautical Magazine*—not even our own agent, Mr. Thomas Flint!? We should really have thought so, but for the excellent letters we have lately had from thence on the subject of a settlement in Davis Strait. With all due respect for the warden and brethren of the Trinity House in their high and useful office, if they will refer to the volume of the *Nautical Magazine* for 1832! at page 613, they will find the details of a remarkable instance, where the crew of an American ship, amounting to nineteen persons, were saved entirely by means of a communication which had been effected by a rocket. And again, if they will refer to p. 102 of the succeeding volume, they will find that rockets for this purpose were tried by direction of the Society of Arts in London, long before Mr. Dennet, the reputed inventor of the plan, tried it with the American ship. At the same time, every credit is due to Mr. Dennet, for bringing forward such an excellent plan, which might also have been an original idea of his own; and we are far from thinking that he did not merit the piece of plate which was subscribed for, although Mr. Trengrouse received the medal of the Society of Arts in 1821 for the same invention. In page 493 of our volume for 1834, we also gave a long account of similar experiments made at Newcastle, which led to the establishment of the rocket system there. Our correspondent in 1833, in remarking on Mr. Dennet's invention, asks, can it be possible that neither he nor any of his friends ever heard of Mr. Trengrouse's invention, and we may also ask, can it be possible that the brethren of the Trinity House of Hull, and all the pilots, and "undersigned," never heard either of Mr. Trengrouse's invention in 1820, or the successful application of it in 1832 by Mr. Dennet, or its establishment at Newcastle in 1834? But we make these remarks in perfect good feeling. No doubt the brethren of the Trinity House of Hull have enough on their hands, and we had the pleasure of recording in our last number, (p. 333.) a substantial proof that they are not unmindful of the comforts and interests of their own worn-out seamen. We will now record the experiments

made at Hull, and congratulate our brother seamen that the rocket system is established there also.

Statement, shewing the result of experiments tried at the citadel of Hull, before the warden and brethren of the Trinity House, the chairman and committee of the Shipowners' Society, the chairman and committee of pilots, the president and council of the Philosophical Society, and several gentlemen of the town; the commandant of the garrison, the commanding royal engineer, and officers of the depôt 30th regiment, for the purpose of proving the utility of a plan proposed by Mr. Carte, ordnance storekeeper, for effecting a communication with shipwrecked vessels, with rockets, by carrying a rope, either from the ship to the shore, or by throwing one from the land to the ship.

November 3rd, 1836.

Size of rockets	Weight of Line.	Deg. of Elevat.	FROM ON BOARD SHIP. Wind W. S. W. blowing strong, with rain.
1	3½	20	Six rockets were fired from the forecastle of a pilot boat of 33 tons, ranging from 180 to 220 yards.
2	6½	20	
			FROM THE LAND.—Wind W. S. W., blowing very strong. Vessel fired at bearing due S. from the parapet of the citadel, where the rockets were discharged. Total number of rockets fired.....22
RESULT.			
2 & 3	6½ to 8½	20 & 25	Number of lines thrown across the rigging of a sloop of 60 tons, 200 yards distant .....16
2	8½	20	Struck the lee-board, and hauled on deck by the crew 1
6	15	30	Struck the pendant, falling to leeward over the taffrail 2
1	3½ to 4	20 & 25	Fell short, the vessel having been moored at 200 yards distance instead of 100 3
			Total.....22

ALEX. GORDON CARTE, Ordnance Storekeeper and Barrack-Master.

I certify that my sloop, the Ploughman, of 60 tons, was this day moored off the citadel, at 200 yards distance from Mr. Carte's rocket apparatus, and that sixteen lines were thrown by him across the rigging of it, and that one rocket struck the lee-board, and was hauled on deck by the crew. (Signed) JOSEPH TAYLOR,

Witness, Master of the Ploughman, Sloop.

WILLIAM TAYLOR, Master of the Friends, Sloop, on board the Ploughman at the time.

Yesterday, a considerable concourse of respectable persons, comprising most of the principal shipowners of the port, assembled at the citadel, to witness a series of experiments, instituted for the purpose of ascertaining the practicability of affording assistance to wrecked vessels, or vessels in danger on a lee-coast, by establishing a communication to or from them, by means of lines attached to rockets. These experiments were, we understand, in the first instance, suggested by A. G. Carte, Esq., the storekeeper of the garrison, and were carried into effect by means of a subscription of shipowners and others.

Spectators were admitted by tickets. Six rockets, each having a strong line attached to the end of the stick, were fired in succession from a pilot-boat stationed in the Humber, off the citadel, to two buoys placed beyond a sloop moored at a distance from the shore; the wind was at the time rough and boisterous, blowing from S.W.; the first two fell near the vessel aimed at; the third went completely over her, and established a communication; the other three were fired with great precision at the buoys, and if a vessel had been stationed at those buoys, would have succeeded in effecting a communication with her. A number of rockets were then fired from the shore at a vessel moored at about 100 yards distance, a very large proportion of which crossed the rigging of the vessel. Rockets were then fired at different degrees of elevation, to exhibit their ranges, and it was shewn that by increasing their power, a communication could be established at very considerable distances—in some instances from 300 to 400 yards of line were carried out. The experiments were wholly successful, and established the fact, that on this principle assistance can be conveyed to distressed vessels from the shore with facility and certainty. The simplicity of the apparatus is also such, that it can readily be carried in vessels, to be used in cases of danger for establishing a communication with the shore. A subscription, we are informed, has been entered into for the purpose of establishing rocket-stations on this coast, to which several public bodies have already contributed.—*Hull Packet*, Nov. 4th, 1836.

We are glad to perceive that a subscription list has been opened, to which we have added our mite, and that the whole "*Statement*" is concluded by the following notice:—

Rocket Stations established since 3d Nov., 1836.—Cayton Bay, near Scarbro', Albro', Bridlington-Quay, Holmpton, Atwick, Easington, Mapleton.

Subscriptions received by Messrs. Pease and Liddell's, bankers, Hull; and Glynn and Co., 67, Lombard-Street, London.

AMERICAN STEAM-BOATS AND RAILROADS.—I obtained from the agent of the principal line of packets on our river, the following facts in relation to the swiftest boat save one on our waters. The Swallow is a packet that plies by night between New York and Albany. She was much shorter than now when first launched, and had made but very few trips when the company hauled her up on a marine railway, cut her in two, and added at least forty feet to her length. She is now 229 feet long. Her breadth of beam is twenty-two feet. She is as sharp at both ends as she could be made. She has a ladies' cabin on deck, otherwise her upper works are light. She is propelled by a low-pressure engine, with a cylinder of forty-two inches in diameter, and allowing a ten feet stroke. The diameter of her water-wheels is twenty-four feet.

There is another boat of a similar form, called the Rochester, belonging to an opposition company, which the Swallow was built to compete with. The Rochester was found so crank that long pieces of timber, half cylinders with conical points, were fastened to her sides at her usual water line. These, of course, resisted her tendency to fall over, and are said to be an excellent contrivance.

The rate of going of these vessels is greater than any we have yet had on the Hudson. I made a trip in the Swallow last October. We left New York at five o'clock, P.M., and in eight hours and forty-two minutes we were at the wharf in Albany. We made but one stop, and that was at Pough Keepsie, seventy-five miles from New York, and half way to Albany.

Since then, a race for a wager took place between the Rochester and Swallow, and the Rochester beat, by a few minutes, running the same distance, and against wind and tide. The time was 8h. 47m.* There is a boat, which I have never seen, called the Naragansett, plying between New York and Providence, with a horizontal engine, that is said to be still faster than the Swallow or Rochester.

The boats on the Hudson carry from 200 to 500 passengers. but in the latter case not more than one half can find places to sleep. The travelling seems to exceed the accommodations provided for it. The fare is three dollars, and each meal is fifty cents besides. We have had this season two boats, which run through by daylight, averaging the time of going at eleven hours and a half, and about three night-boats from each city.

You may have heard of a steam-ship, called the Despatch, which is building under the direction of Captain Cobb, intended to navigate the Atlantic. The proprietors rest their whole hope of success on a new steam-engine, planned by a Mr. Bennett. He has been for many years at work to perfect his engine, and the people of the village where he was at work, had such confidence in his design, that they bought shares at enormous prices, and visions of boundless wealth were for a time indulged in. On applying the model to a canal boat, it moved it along at the rate of a mile an hour! The bubble, as it was thought, burst. To my surprize he took fresh courage, went to New York, and succeeded in getting on with Captain Cobb. The vessel is launched, and the machinery is fitting up as fast as possible. The whole scheme consists in making a boiler which will not waste any heat, and to have the hot air and smoke of the furnace passing into the boiler. The shape of the furnace is that of a bottle whose neck runs up and is surrounded with water, kept on a level below the mouth of the furnace neck. Above the opening of this neck is an iron cap, also of a cylindrical shape, that fits upon it, not tight, however, and turns the smoke and flame back and downwards into the water.

Having passed through the water it comes up again into the steam-chamber, on which are the safety-valve and the steam-pipe. In order to create a draught, he works a blower beneath the furnace. My own impression at present is, that he cannot get steam at any power by this apparatus. I see nothing to prevent the water running up the flue into the fire, as soon as the head of steam accumulates sufficiently to counteract the pressure of the atmosphere from the furnace. He may have modified his new engine, however, so as to prevent such a result.

The greatest profits made by our steam-boats are on Lake Erie. They are very numerous, large, and well-supported. One boat alone, the Thomas Jefferson, has earned for her owner in one season 75,000 dollars, a larger sum than she cost him. The character of the lake business has materially changed since you were here. It has been my

* About seventeen miles per hour!

fate to visit Buffalo twice this season. On one occasion I went to Oswego, and then took one of the Canadian boats to Toronto, or Little York, and thence another, the *Traveller*, to Niagara. The last was a beauty. She was schooner rigged, had two engines, a saltwater figure, and a swiftness unknown to Lake Ontario before. She could easily make fifteen miles an hour in calm weather. No other boat could keep up with her. She has since been bought by a company at Rochester.

As to railroads, we have not yet gone into these speculations rashly. No roads are yet made which were not wanted. All pay, but a very few have advanced so high in the stock market as to make the public in love with them as investments. The Utica and Schinectady road is quoted at 121. It has been down to 108. It will pay fourteen or sixteen per cent. clear. Only passengers are carried on this road. The effect has been to destroy the packets travelling on the canal almost entirely, but no freights are allowed to be carried on the road, and there can be no competition in this particular. The state is about to widen and deepen the Erie canal all the way to Buffalo. It will take many years, and cost twelve millions of dollars. We are about to have a new canal in operation—the Chenango. It goes from Utica to Binghamton on the Susquehan. It depends much upon reservoirs of water for its supply. It is believed it will be dry at some seasons.

One of our most *dashing* works is the New York and Erie railroad. It is making by a company, to whom the state has loaned its credit partially. This will be nearly 400 miles long, and connects the Hudson with Lake Erie at Dunkirk. Branches are to be made to it from the north, and it will bring Buffalo and Dunkirk, its terminating point, within twenty-five hours of New York, now distant four days and nights steady reckoning. Another road of great importance now making is from this city to Boston. Our corporations have subscribed 250,000 dollars to the stock. It will be a profitable road. The rate of travelling is with us about twenty miles per hour. Our engines, we think, are better than yours. Baldwin, of Philadelphia, constructs the most admirable machines. They are more compact, more powerful, more simple than those which have come out to us from Stephenson. Indeed, he has recently received orders from the continent!—
Extract of a Letter.

UNITED SERVICE MUSEUM.—On Friday, the 12th and 19th of June, lectures were delivered at this institution on the subject of atmospheric electricity, and the means of defending buildings and ships from its effects, by W. S. Harris, Esq., F.R.S. The lecturer, after adverting to the existence of electricity, and the causes which produce it in the atmosphere, proceeded to explain that the same power may be obtained by means of friction from vitreous and resinous substances, but of different natures; and alluding to the accidental discovery of the Leyden jar, explained the various kind of bodies which were conductors and non-conductors, and shewed how any quantity of electricity might be accumulated. In his experiments he shewed the desire of bodies to receive and impart electricity, and that the force which it exerts on a body to which it passes, depends on the square of its distance from it. This experiment was neatly shewn by actual measurement.

On the latter day, Mr. Harris directed the attention of his audience to the principle of conductors generally, and by several beautiful experiments shewed their power, when properly applied, in protecting buildings and ships from the effects of electricity, as well as the consequences resulting from their absence. His experiments, shewing that electricity may be received from a passing cloud, and illustrating the attractive and repulsive power by means of bells, and also that water is a conductor of electricity, by allowing an electric discharge after passing down the mast of the model of a ship, to explode some gunpowder in the model of a boat afloat near her, but entirely unconnected with her, were highly gratifying, and received with great satisfaction by his audience.

He described thunder-clouds as insulated and highly-charged surfaces, extending sometimes over an area of 40,000 or 50,000 acres, opposed to the surface of the earth as a conductor, with the air as an intervening insulating medium. The electricity accumulated in the clouds, in order to regain a more equal distribution, passes over the lines where the resistance is weakest, or breaks through the intervening air, discharging itself upon the nearest conductor. The lecturer's plan for conducting lightning from ships was illustrated by the model of a frigate floating in a trough of water, with gunpowder at the royal mast-head, and with a boat astern filled with gunpowder. A metallic ball, charged with lightning, was made to traverse a wire, by which the gunpowder exploded and also that in the boat, but the lightning was conducted into the water without damage to the vessel. A mast without the conductor, in a similar experiment, was shivered to pieces.

In the course of his lecture, Mr. Harris alluded to his papers on this subject in the first series of this work, (vol. 1834,) in which the substance of these lectures is given in detail. We understand that his last experiments were considered of so interesting and important a nature, that they have been repeated by special request.

SABLE ISLAND SIGNALS.

To the Editor of the *Shipping Gazette*.

Falmouth, April 24.

SIR,—Lieutenant Green, R.N., has kindly procured from Halifax, by the last packet, the understated code of signals, which he most justly deems would be made known far more extensively through the medium of the *Shipping Gazette* than by any other channel, to the maritime world. It is a recent arrangement.

Signals used to communicate with the establishment on Sable Island by any vessel visiting it, or passing the island :—

A flag at main topmast, or foregallant mast	
head.....	denotes All well on board.
— main mast head	--- Are there any wrecks ?
— main gaff.....	--- Can a boat get off ?
— main gaff half-hoisted.....	--- How many persons on shore ?
— main rigging	--- Vessel in distress ?
— foretopmast head.....	--- Vessel coming to the island.
— fore rigging.....	--- Are you in want of provisions ?

A flag at the mast-head in the island.....	<i>denotes</i>	That a boat will be off immediately.
— the mast head, if kept flying.....	---	All well on shore.
— East yard-arm.....	---	Are you coming to the island ?
— West yard-arm.....	---	Not in want of provision.
— West, half hoisted	---	In want of provision.
— East, half hoisted.....	---	A boat cannot get off.
One ball or more East yard-arm.....	---	Ten persons for each ball.
— or more West yard-arm.....	---	One wreck, or more.
A flag under one ball or more, West yard-arm	---	One or more of H.M. ships.
A pendant under one ball or more, West yard-arm.....	---	One of H.M. packets.

The flag used on the island is red, white, and blue, horizontally. A Union-Jack, or any other flag, is used by the vessel.

Any of the above signals, when made, should remain up ten or fifteen minutes, or until answered. A gun fired, particularly in hazy weather, will draw the attention of the inhabitants. All other flags must be down when making signals. I have the honour to be, Sir,

Your most obedient servant, and

CORRESPONDENT.

RETURN OF THE ICE-BOUND WHALERS.

In our number for Jan. (p. 51) we stated the names of the unfortunate absent whalers, three of which have lately arrived, leaving two, the *Advice* and the *Swan* still missing. The following letters contain some distressing particulars of their proceedings.

We have at length the pleasing intelligence to communicate the arrival of three of the Whale Ships, which have spent the winter, ice-bound, amidst the horrors of the frozen regions, viz., the *Norfolk*, the *Grenville* bay, and the *Dee*, and of two of the remaining three being on their way home—the sixth, the *Thomas*, of Dundee, having been wrecked in Davis' Straits, and the crew distributed among the other vessels.

The *Grenville Bay* arrived in the Tyne on Friday, May 5th. The following letter, addressed to one of the owners of the vessel, had previously been forwarded by the captain from the Orkneys:—

Ship, Grenville Bay, Stromness, April 28th, 1837.

Sir,—I am happy to inform you that we arrived here yesterday, in company with the *Norfolk*—the *Dee* arrived the evening before; all having had a severe passage, and, I regret to say, loss of life. We got clear of the ice on the sixteenth of last month. The ships were beset October 8th, in lat. 73° 14', and long. 64°, the *Dee* and *Norfolk* in company, the *Advice* and *Thomas* in sight, drifting north and south, with winds variable, until the 13th of December, when the *Thomas* was lost in lat. 70° 41'—crew divided ten to each ship—then we drifted very slowly to the south, and lay quite secured in floes of ice. The frost was very severe in February: the thermometer varying from five degrees below, to five degrees above zero. March a much milder month—the floes occasionally breaking and ranging about frightfully. Our vessels were securely frozen into the floes fourteen to sixteen feet thick; the decks covered in with canvass and twixt deals, and we cleared away the frost rind every day. Our ship's company are in tolerable health; the *Dee's* crew have suffered severely from scurvy;

the Norfolk's tolerably healthy. Provisions were served out to my crew in the following manner:—five pieces of beef (averaging 12lbs. each,) per day, 4lbs. bread per man per week, 36 lbs. flour per week, five soup days, and mess pots every day. The other ships have not been so well off.

On the 14th March, in lat. 62°, heavy gales came on from the south, which broke up the floes, and we got clear of the ice on the 16th, the Dee and Norfolk in company—the Advice not in sight. After leaving the ice, the ships soon separated, and all experienced a severe passage. The Norfolk was boarded on the 24th by the Lord Gambier, in long. 51° W., and got a supply of provisions and stores. The Dee was picked up off the Flannel islands, Lewis, and towed to Hoy. We got a supply of fresh beef, potatoes, turnips, and flour, from the John and the Jane, of Hull, the Ellen, of Leven, and the Harvest Home, and the Stephen, of Newcastle, all on the 21st of April. We also got from them six men at £12 each, to assist us home, we have only ten men able to stand the deck, and only three of these able to go aloft—the doctor, the mate, the second mate, and myself, being the least of all affected. On the 23d, we were boarded by the Loyal Briton, of Whitby, and the Perseverance, of North Shields, and got a supply of water, coals, and some small stores from them; and on the following day, by the Lady Jane, Captain Leask, from whom we got an additional supply of fresh beef, spirits, wine, and clothing for the crew. Captain Leask desired me to report his ship quite tight—she was in most excellent order—the wind then S.E. The other ships wish to be reported all well. I have seen Captain Harrison of the Norfolk, and find his people in the most healthy state of any of us. He says, that after getting supplied from the Lord Gambier, his men came round very rapidly. There were seven of his crew dead on leaving the ice, and nine since, making sixteen. We had three dead on leaving the ice, and seventeen since, making twenty; ten of these belonged to the Thomas, the other ten our own. The Dee had twenty-four dead on leaving, and on arrival at Stromness had only fifteen living, out of a crew of sixty. Captain Gamblin died on the 3rd of February, and his was the fifth death in that vessel. She had got no supplies on the passage, otherwise many lives would have been saved. Our own crew have recovered as it were by magic. Some who had been confined to their beds for two months are now walking about the deck, and preparing to go into the hospital here, where all the people in the twixt decks are going. We are clearing the ship; and I hope will be able to proceed home the first favourable wind. The crew, with the exception of one or two will be left. The names of those dead, who belong to Shields, are William Pain, William Stephenson, Robert Elliot, Joseph Hogarth, (cooper,) Anthony Bross, Thomas Carr, Robert Littlejohn, (carpenter,) and three Orkney men we took from Stromness.

I remain, Sir, your obedient Servant,

To T. R. Batson, Esq.

THOMAS TAYLOR.

The editor of the Berwick and Kelso Warder gives the following particulars which he had obtained from the captain of the Norfolk, arrived at Berwick:—

The Norfolk went into Melville Bay on the 7th of August, and bore

down to the west water on the 10th, where were a great number of whales, which induced the captain to stay there a few days. These fish disappeared, and the vessel was set fair to the land. When they got there, and saw the state of the ice, which was unbroken, and in immense sheets, it was at once determined, as nothing further could be done, to return home as soon as possible. The Norfolk left Melville Bay on the 23d of August, on her return, having got as far as $74^{\circ} 11'$ south : on leaving Melville Bay the frost set in, and the ship was frozen up for about twenty-four hours, there being no water to be seen. She was then about sixty miles from the west land. On the ice breaking up, the ship was borne down to the east, but there the ice was equally as bad as on the west side. It was then determined to take the middle. Thus was the vessel seeking for a passage home, from the time she left Melville Bay, till she became embedded in the ice on the 8th of October. She was then in lat. $73^{\circ} 14'$. The Thomas and the Advice left the other ships, expecting to get clear of the ice sooner; but finding that impracticable, they again joined company with the Grenville Bay, Norfolk, and the Dee. These last three ships were never more than a mile apart, the Thomas being about five or six miles to the north-east. The crew of the Norfolk were then put on an allowance of $3\frac{1}{2}$ lbs. of bread, and from 1 lb. to $1\frac{1}{2}$ lb. of salt provisions, per man, per diem. Those in the cabin were then living on $\frac{3}{4}$ lb. of beef per diem. As the season wore round, and the necessities of the men became urgent, the allowance was increased to 4 lb. per diem, which was continued till they got clear of the ice, when the men were allowed as much as they could eat. This, however, was not much, as from the soreness of their mouths from scurvy, and lassitude, occasioned by cold and deprivation, they could eat but little. The Norfolk had on board on her return 7 cwt. of biscuits, and 3 casks of beef; so that though it became necessary to limit the consumption during one part of the season, that did not arise from any prospect of the quantity of provisions on board being insufficient, unless, and in peculiar circumstances, the vessels might be detained an unusual period in the ice. The continued use of salt provisions produced the worst effects on the men, most of whom suffered severely from the scurvy.

There is a ridge or shoal which runs across the straits, lying S.E. and N.W., in latitude 68° , called the Reef. On this place many of the ice-bergs ground, and there is, in consequence, a great accumulation of ice there. When on the other side of the reef, the vessels drifted backwards and forwards several times, north and south; but when they had passed this shoal, they drifted with great rapidity to the south-west. The ice broke and parted away in large pieces, and rendered the situation of the vessels at times extremely dangerous. The vessels, which had till now been near each other, separated to a great distance. The drift sometimes carried the ships fifty to seventy miles a day. On the 15th Feb. the Norfolk was in latitude $66^{\circ} 43'$; on the 1st of March the sea was in view; and on the 16th March she got clear of the ice in latitude $61^{\circ} 40'$; but drifted into a bight, and was again detained. After sawing through the ice for a considerable distance, the men being hard at work for five hours, she got clear on the 21st March, and immediately after set sail for England. She sailed about 245 miles, and was then driven back by heavy gales 145 miles. On the 30th, she

fell in with the Lord Gambier, in lat. $59^{\circ} 3'$, west long. 51° , and got a supply of fresh provisions. The crew of the Norfolk was then in a very weak state. Even those who had been comparatively well during the preceeding part of the voyage had now begun to feel sore in the mouth, and exhibit other signs of weakness and disease. The fresh provisions produced a powerful effect on the whole crew, and several who were previously confined to bed, were, by the use of fresh diet, soon enabled to come on deck and resume their duties. This circumstance alone shews the strong necessity there was for government to have sent out a supply of fresh provisions and clothing at the proper season. There were fifty men and boys went out in the Norfolk. Forty-two have returned, and eight are dead.

On the arrival of the *Dee* at Aberdeen, the quay was crowded with anxious spectators, and as the vessel neared the berth, the scene was truly heart-rending. The mourning relatives of the deceased seamen, though previously apprised of the unfortunate fate of those who were near and dear to them, seemed unwilling to give credence to any testimony apart from a positive confirmation by those who had been eye-witnesses to their decease; or believing the fact, seemed anxious to seize, with eager avidity, the earliest opportunity of taking a parting glance at the empty hammocks of the dead. Their weeping widows rushed on board with their helpless orphans in their arms, while parents and friends followed in equal grief. Of those who were privileged to meet their surviving relatives, we need say nothing—their joy was great, but the detention of a few who were left at Stromness, led the expectant friends to give vent to the most frantic grief, and almost again to despair. When a convenient opportunity offered, the surgeon, Mr. Littlejohn, whose letter we publish, though in a very weak state, kindly and most readily expressed his willingness to give every additional information in his power. The painful results of this voyage being so fully detailed below, we need not repeat them here, but as full an account as possible of the causes will be read with deep interest. The most painful fact, in connexion with the loss of the *Dee's* crew, is the great mortality, as compared with the other vessels which were beset at the same time. Mr. Littlejohn accounts for this on the following grounds: When the *Dee* was beset, she was among loose ice, the alternate opening and closing of which exposed her to great danger. The crew were, therefore, constantly exposed, had most harassing duties to discharge, and little or no time to change their clothes. This state of things continued for about two months, and so immediate and certain did the destruction of the vessel appear at one time to be, that the beds, chests, provisions, &c. had to be taken on the ice. Here all hands remained for two days; and as a proof that this was the first and chief cause of the fatality which immediately followed, Mr. Littlejohn remarks, that, almost immediately after they again went on board, they began to complain, and scurvy became more and more prevalent. To add to this, when the *Thomas* was lost, the greater part of the crew of the *Dee* went over the ice, a distance of some four or five miles, to assist in carrying over part of the provisions. This second exposure had a most painful effect; and that it was the cause of increase of mortality, is evident, from the fact, that, the proportion of the crew of the *Thomas*, which were divided among the

other vessels, fell victims to disease, in a far greater ratio than the other men on board. That these were the chief causes is also evident, when we know that none of the other vessels were at all disturbed by loose ice, but, on the contrary were immovable from the first day they were fixed, until the day they got clear.

On the 27th September, the crew of the *Dee*, fearing a late season, went on half allowance. The mess was 3lbs. of bread a-week, 3½lbs. or 4lbs. of beef, and 2½lbs. of barley only allowed to make soup for sixty-one men; but Mr. Littlejohn states that the scurvy was the great cause of the mortality and death, which must certainly have been attended with excruciating pain, the disease having generally begun in the mouth, thus rendering the unfortunate men unable to take victuals. The extreme cold is mentioned in Mr. Littlejohn's letter; but, as another evidence, we may add that, even in the cabin, while their hands were over the little fire they had, their backs were freezing. So intense was the frost that every liquor was frozen, and, at times, the ink in the glass was as solid as a piece of beef.

The coals were all exhausted by the end of January, after which, staves of casks, with any other lumber, were made use of. The want of fire now added to the pain of the sufferers, who were getting weaker day by day. Occasionally a little refreshing soup was made from foxes, many of which they killed; but the ravage of the disease seemed to baffle every remedy. Spirits were allowed in small quantities, but seemed to do little or no good. A partial relief, was, however, occasionally afforded in this way; and, in their last moments, some of the men asked for a little grog. No spirits were used after the *Dee* left the ice, and now death made sad havoc. From the 16th of March, the day on which she got clear, scarcely was there one man able to assist another; and our readers may form some conception of their deplorable state, when we mention the fact, that two or three were lying together in one blanket, covered with ice, and the blanket underneath literally a mass of vermin. The dying were often lying in the same bed with the dead for days together; and, when obliged to consign the latter to the deep, the bodies had to be hoisted up the 'tween decks with a tackle, and thrown overboard.

At the time they discovered the first vessel mentioned in Mr. Littlejohn's letter, there were only six men able to do duty. One of them got up a signal of distress; but dreadful, indeed, was the agony of all on board, when they were assured that their hope of relief was blasted. The vessel in question was not so near as would allow her being known, but she was sufficiently near to perceive the signals of distress, and, indeed, must have seen them. No other vessel was seen until they fell in with the *Washington*, of Dundee, whose timely aid effected the safety of the remaining crew.

Having only the close-reefed topsails set when the *Dee* left the ice, and the remaining portion of the crew being unable to render any effective assistance, she was almost wholly at the mercy of wind and tide, and at one time drifted so far south as 52°. The temperature now was a pleasing change, but scurvy was too deeply rooted to be eradicated without some more tangible remedy. Mr. Littlejohn says that it would have been quite impossible to have got any relief from the open sea, from the time the vessel was beset, until she got clear;

and unless vessels had been cruising between 52° and 60°, they could not have been fallen in with. They did expect relief from England, but not in such high latitude as 52°.

That the friends of the deceased may have the melancholy satisfaction of recording the precise time of their death, we publish the following list, kindly furnished by Mr. Littlejohn:—

List of Mortality on board the Dee—Jan. 11, William Curryall, Dee; 19, William Besley, ditto; 27, Andrew Bennett, ditto; Feb. 1, John Setchell, ditto; 2, Stephen Gamblin, ditto; 5, George Dawson, ditto; 10, Christopher Sutherland, ditto; 11, William Fleet, ditto; 12, John Isbister, ditto; 12, A. Reed, Robert Burn, ditto; 15, Wm. Muir, Thomas; 23, John Dunbar, Dee; 24, John Learmond, ditto; 25, Samuel Brown, ditto; 25, James Gaudie, ditto; 26, John Macleod, ditto; 27, John Booth, jun., ditto; March 1, Alexander Anderson, ditto; 3, Robert Moir, Thomas; 4, John Booth, sen., Dee; 6, A. Mason, ditto; 7, James Yorston, ditto; 11, Peter Linklater, ditto; 14, James Muir, ditto; 15, William Stirling, ditto; 16, David Dinnett, ditto; 16, James Cook, Thomas; 19, John Moir, Dee; 20, William Patterson, ditto; 21, — Curryall, ditto; 21, John Isbister, Thomas; 23, Alexander Noble, Dee; 23, Alexander Garden, ditto; 25, James Pearson, ditto; April 3d, James Tulloch, ditto; 3, G. Turriff, ditto; 4, Allan Monro, Thomas; 6, William Anderson, Dee; 6, William Turriff, ditto; 7, Andrew Spence, Thomas; 12, Thomas Stuger, Dee; 12, John Davidson, Thomas; 16, David Smith, ditto; 18, James Isbister, Dee; 22, David Irvine, Thomas.

In taking leave of this painful subject, in the meantime we beg to express our earnest hope that something will be immediately done to relieve the wants of the sorrowing relatives.

The Dee has seven fish, (60 tons,) all caught between the 1st and 23d of August.

There are no accounts yet of the Advice, of Dundee, although she was seen with her sails set about two days before the Dee got clear. It has been stated that the Advice was leaky, and very likely went down; but Mr. Littlejohn states that it was generally believed that she had gone to some of the Danish settlements. The last accounts the Dee had from the Advice were about something more than a month previous to the time they all got clear. At that time, two of the crew of the Advice travelled over to the Dee, a distance of about seven miles, and represented the crew of the Advice as being in a very sickly state. They also mentioned that the vessel was leaky.

The Dee does not appear to be much damaged. None of the vessels appear to have suffered so much from the want of provisions, as from scurvy.—*Aberdeen Herald*.

The examination of gentlemen for the rank of Lieutenant took place on Monday, the 8th May, (agreeable to an order from the Admiralty,) at the building lately used as the Royal Naval College, in the presence of the Commander-in-Chief, Rear-Admiral Superintendent and Captain Hastings, R.N., of H.M.S. Excellent, when the following were passed:—Mr. George Baker, Mastiff; Mr. George B. Lawrance, late Thunderer; William Burrows Wills, Excellent; Mr. William Mc. Culloch, Stag; Mr. A. T. Freese, late Favourite; Sir William

Hoste, Bart., late Asia. The examination was conducted by Mr. Starke, schoolmaster of the Excellent: and Mr. Jeans, late second mathematical assistant at the Royal Naval College. We think the Admiralty could not have selected two more competent persons to supply the place of our late worthy professor, Dr. Inman, than the above-named gentleman; and we are sure, from the well-known talent and integrity those individuals possess, that the examinations will be conducted upon the same impartial principle that has for so many years past given general satisfaction to the naval service.—*Ports. Herald.*

The following regulations have been made for the qualification of naval instructors and schoolmasters:—

His Majesty having been graciously pleased by his order in council of the 22nd December, 1836, to authorize the Lords Commissioners of the Admiralty to procure, by adequate encouragement, able and efficient schoolmasters for the advancement of navigation and science among the junior officers of the Naval Service, and in order to promote this desirable object, having been further pleased to order that schoolmasters serving in line-of-battle ships and frigates shall receive the present pay of schoolmasters of first rates, namely, £4 14s. per lunar month, and £30 a year bounty; also £5 per ann. for every young gentleman who may be instructed by him; and as a further encouragement shall be entitled to a half-pay of 2s. a day when not employed, provided they shall have served two years subsequent to the date of this regulation, and of 3s. a day if they shall have served three years from that date; and his Majesty having further directed that candidates for such a situation shall pass such examination and be under such regulations as the Lords of the Admiralty shall from time to time direct; My Lords are therefore pleased to order that schoolmasters hereafter appointed to line-of-battle ships and frigates shall be paid at the rate of four pounds fourteen shillings per lunar month, and receive a bounty of thirty pounds a year, and be entitled to a half pay of two shillings a day when not employed, provided they shall have served two years subsequent to the date of this regulation, and of three shillings a day if they shall have served three years from that date.

My Lords are also pleased to direct that, before any person can hereafter receive an appointment as schoolmaster in a ship of the line or frigate, he will be required to produce a certificate of his age, and testimonials of good character, and to pass an examination as to his qualifications to instruct the young officers in the following branches:—

- 1st. Common arithmetic, including vulgar and decimal fractions.
- 2nd. The first six, the eleventh and twelfth books of Euclid; their application to the measurement of planes and solid bodies.
- 3rd. Algebra, progressing to the highest order of Equations, and its application to the solution of geometrical problems.
- 4th. Plain and spherical trigonometry, and the various problems in surveying, the measurement of heights and distances, navigation, and nautical astronomy, particularly the principles on which the various formulæ for ascertaining the longitude are constructed, and practical astronomy, so far as may be required for determining the latitude and longitude in all cases.

5th. The uses of mathematical and nautical instruments, the quadrant, sextant, compasses, and chronometers.

6th. The theory of projectiles, and its application to gunnery.

7th. The classics, to such as enter with some knowledge of Latin and Greek.

Although the knowledge of French, as well as other modern languages, and of the principles of drawing, will not at first be required as indispensable qualifications, it is very desirable that naval schoolmasters should be able to give instruction in these branches of education; and preference will always be given to such as possess these attainments.

No person will be considered eligible for the situation who is under 20 years of age or more than 35. Schoolmasters established by the above-mentioned order in council are to be designated "Naval Instructor and Schoolmaster."

A seaman, belonging to the *Eliza*, schooner, while at Launceston, last week, was unfortunately bitten by a snake, and notwithstanding every precaution, died next day. The rareness of this occurrence in this island leads us to believe that the health of the unfortunate man had previously been such as to facilitate the poisonous effects of the virus. In all cases of the kind, the wound should be instantly and forcibly sucked, and if danger is apprehended, the part cut out, or at least scarified or punctured, and induced copiously to bleed. The application of an alkali may be tried with great prospect of success. The editor of the 'Cornwall Chronicle,' who appears familiar with the customs of the Africans, where venomous reptiles abound, recommends a strong decoction of red or cayenne pepper, taken internally, as a means of counteracting the dissemination of the poison throughout the system.

The name of the unfortunate young man was Macbride, he was well connected, and had been bred to the medical profession. He had gone on shore to collect fire wood with another man, on the banks of the Tamar. The day was hot and his feet were unprotected, except by a pair of thin shoes. When the snake bit him, his companion sucked the wound, but in spite of every effort, in a few minutes the whole mass of his blood was affected by the poison, vomiting, insensibility, and locked jaw continued until an hour before sunset next evening, when he became sensible, made his will, and died. The snake was black and of a rare species.

Captain Pinel, of the French brig *Furieux*, put into La Rochelle, states that on the 19th of March, in lat. 48° 24' N., long. 8° 30' W., being at that time short of provisions, and in a most distressing situation, himself and crew having subsisted for some days on the sweepings of the bread room; he perceived a brig, to which he directed his course, made signals of distress, and soon approached and made known his desperate condition. Notwithstanding the tempestuous weather, he intended sending his boat on board to procure provisions, but, on nearing her, she stood off and bore away and left them. She was recognized to be English, and named "Amy, of London." Captain Pinel, the same day, fell in with the Hanoverian galliot *Comet*, Haasloop, from Bremen for Charleston, who kindly supplied them with every thing they required.

Law Proceedings.

ADMIRALTY COURT, Jan. 30.—THE EARL GREY—SALVAGE.

This was a suit for salvage services rendered by the steam-boat *Solway* to the Earl Grey, which was found in a disabled state some distance from Liverpool. The case was heard on a former court day, and 900*l.* awarded to the salvors. The court was to-day called upon by the owners of the steam-boat to allot the money.

Sir John Nichol shortly referred to the facts of the case, which have already been made public. The court thought that, to encourage the owners of steam boats to allow their vessels to render assistance to ships in distress, or where towage was required and they could render efficient aid, he should direct that 450*l.* be paid out of the 900*l.* to the owners, 50*l.* extra to the captain, the remainder to be provided *pro rata* among the captain and the crew of the *Solway*.

THE SISTERS—SALVAGE.

This was a suit promoted by the captain and crew of the smack *Providence* for salvage services alleged to have been rendered to the Sisters, off Whitstable, on the 29th of November last. The Sisters was on her voyage from Cork to London, and in a heavy gale had lost her anchors and cable, and a part of her rigging. The smack proceeded to her assistance, and, with the aid of a man who was put on board, succeeded in getting into Whitstable in safety. The admitted value of the ship and cargo was 1,950*l.* and 25*l.* had been tendered for their services, but which was refused.

Dr Addams, for the salvors, submitted that a meritorious service had been rendered to this vessel. Every one would recollect the dreadful hurricane of the 29th of November last, and it was then that the salvors assisted the vessel. He submitted that, taking all the circumstances into consideration, the tender was insufficient, and that the Court must award the salvors a higher remuneration for their services.

Dr. Nichol, for the owners, said the tender was most liberal for the services rendered, which consisted of mere pilotage. The *Providence* had slipped her cable to assist a brig which was in distress, and passed the Sisters without offering aid, when two men were sent in a vessel to get her into Whitstable. The vessel had not been given up to the care of the man put on board, and he (Dr. Nichol) hoped the Court would pronounce the tender sufficient.

Sir John Nichol, having referred to the facts admitted in the case, considered that the whole salvage service rendered, consisted in the man who was put on board from the *Providence*, having assisted the Sisters into a place of safety, which the captain had previously decided upon. He therefore thought that 5*l.* or 10*l.* would have been an ample remuneration for their trouble, but the vessel had been arrested and bail required to the amount of 150*l.*, the tender of 25*l.* having been refused. The court was always anxious, where real salvage services were rendered, to give a liberal reward, but nothing could be more injurious to *bona fide* salvors than to encourage such frivolous suits as the present. He should therefore pronounce that the tender was sufficient, and to prevent further expenses being incurred by the taxation

of the costs in the suit, he should direct that 10*l. nomine expensarum* should be paid by the pretended salvors, out of the sum which had been tendered to them.

THE ELEANOR AND NANCY.

This was a case of collision between the above vessels, both of which had proceeded for damages, each alleging that the accident proceeded from the other's unseamanlike conduct. From numerous affidavits of the master and crew of the Eleanor, it appeared that she is a schooner of 117 tons, and left Plymouth in ballast, on the 15th of October last, bound to Penzance to take in a cargo of pilchards for the Mediterranean market. On the evening of the same day, between seven and eight o'clock, while beating down Channel, off the Dodman, being close hauled with a S.W. wind, with her larboard tacks on board, standing in for the land, the man on the look out suddenly perceived a large ship (the Nancy, from Havre to the South Seas) under her lee, having her starboard tacks on board, steering such a course as would have brought her under the Eleanor's stern: he called out to bear up, which was not complied with, for the ship stood on till within a cable's length of the Eleanor, when she sprung her luff, which had the effect of bringing her in contact with the Eleanor's starboard-quarter with such violence as to carry away her mainmast and cut her down completely to the wales. The Nancy also lost her bobstay and bowsprit, with its rigging.

Dr. Burnaby, for the Eleanor, contended the collision arose from the carelessness of those on board the Nancy, which was so much to leeward of the Eleanor, that the latter's people could see her weather foreyard arm to windward of her jib. This fact was much relied on to show that by the relative position of the vessels the Nancy would have gone clear had she not altered her course when abreast of the Eleanor.

On the other side it was argued that the accident proceeded from the Eleanor not complying with the established rules of navigation, which state, that where two vessels are beating to windward and in danger of collision, the one which has her starboard tacks on board continues her course, whilst the other bears away. The Nancy was so placed in this instance, and the duty of the Eleanor was to bear up. To this it was answered she could not so have done, for from her weatherly position, had she put before the wind, she must have come into the Nancy. Both parties asserted they were keeping a bright look-out.

Sir John Nichol stated the facts as above, and said that the law, recognized by all maritime states was, the vessel with the larboard tacks should give way. In this instance the rule was not observed, the defence set up being, that the Nancy's master, when he saw the collision was inevitable, had done all in his power to diminish its violence by putting his helm down, thereby deadening the ship's way through the water. After consulting with two of the Trinity-house masters, the learned judge said it was the opinion of the gentlemen by whom he was assisted, and in which opinion he fully concurred, that no blame was imputable to the masters of either vessel. By suddenly coming on each other in a hazy evening they were placed in a situation of some difficulty, from which they had done their best to extricate themselves. The sentence of the Court was that each party should pay its own damages and costs.

THE EDWIN.

Dr. Addams said this was a question of some importance to the shipping interest, relative to the construction of the 5th and 6th of his present Majesty, cap. 19, concerning the recovery of wages by mariners. A seaman, named Keith, was hired to go in the Edwin, in October, 1835, from Newcastle to Brazil. The vessel returned to Cowes, where the seaman left, and she proceeded to the Mediterranean. On the return of the ship, the mariner preferred a complaint before the magistrates of the Thames Police-office, under the provisions of the act, for his wages. It was provided by the act in question, which was passed to give facility to mariners in obtaining their wages, that in cases where the sum demanded was under 20*l.* the case might be decided by the magistrates at the port where the vessel unloaded, &c., the award to be decisive and final upon the captain or owners of the ship, and upon the seamen. The case was heard before the magistrates at the Thames Police, and a decision against the claim of the seaman came to. Notwithstanding the provisions of the act, the vessel had been arrested in a suit commenced by the mariner, for the subtraction of wages. He (Dr. Addams) should submit that the seamen having selected his *former*, was not at liberty to appeal to that Court, but must abide by the decision of the magistrates of the Thames Police-office.

The King's Advocate, on the other side, said the case had been referred to that Court, a nice point of law arising in the question at issue.

Sir John Nichol considered the magistrates, under the act referred to, had not the power to decide on a total forfeiture of wages, the act being to enable seamen to recover their wages, and they were not barred in a case like the present, from an appeal to a maritime court. There were many circumstances which might be brought to the notice of the court, as to whether the wages should, in part or wholly, be forfeited. He should, therefore, overrule the protest entered against the suit, and direct the seaman to give bond for costs before he proceeded with his action to recover his wages.

THE PALAMBAM—SALVAGE.

This suit for salvage was promoted by the master and crew of the sloop Pearl, consisting of seven men, against the owners of the foreign vessel the Palambam. It appeared that on the 3d of Dec., 1836, between the hours of 1 and 2 P. M., as the sloop was looking out to render assistance to vessels in distress, she discovered the Palambam, which is a ship of 490 tons, on its voyage from St. Petersburg to London, laden with tallow, hemp, and similar produce, off the western rocks of Harwich, with signals of distress flying; that four of the crew of the sloop rowed immediately in her boat, and boarded the Palambam, when they found that her windlass was disabled; that they were asked by the captain whether a vessel drawing nineteen feet of water, as his vessel did, could not get into Harwich harbour: and nobody being on board who knew the navigation of that sea, they took her under their control, and by means of the assistance of their boat, which pointed out the buoys to them, got her safely into port. This was the story set up on behalf of the alleged salvors, but it was in part contradicted by the

other party, who denied that any signals of distress were flying, and stated that the signal which the crew of the sloop saw was only one to obtain the assistance of a pilot, and that the services rendered were only those of mere pilotage. The ship was arrested, and the action entered in the sum of 3,000*l.* The value of the ship and cargo amounted to about 20,000*l.*

The King's Advocate was heard for the crew of the sloop, and Dr. Addams appeared on the other side.

The learned judge stated that, though in general he was opposed to and disapproved of exorbitant demands, yet, he was not surprised that a large sum had been sought for on the present occasion, for great discussion had arisen as to the actual worth of the ship and cargo, which is now admitted by all to be of the great value of 20,000*l.*, and the party who demanded the 3,000*l.* on finding that the value of the ship did not equal their expectations, instantly released her from arrest, and did not attempt to harass or vex the other party. This circumstance did not, therefore, throw any imputation on the case generally, and the court would look into the circumstances, and give its opinions, as to the services done, and as to the amount of reward which the salvors ought to receive for those services. Having gone minutely through the details of the case, which it is needless to recapitulate, the learned Judge thought that the services were not of so small importance as they were argued to have been by the counsel for the other party, for he could not agree with them that a pilot could have rendered the same services which the party promoting this suit had done. The only question which then remained for the decision of the Court was with regard to the amount of reward, and it found great difficulty in settling it, and wished that a tender could be made by the owners of the Palambam.

The Proctor, for the owners, here stated that his party had gone down to Harwich with the intention of giving a liberal reward. They had offered 50*l.*, and would have given 100*l.*, but they could not come to terms with the other party, and the treaty was accordingly broken off.

The learned judge stated that justice demanded of him not to award less than 200*l.*, with costs.

COURT OF EXCHEQUER, FEB. 16.

(London Sittings at *Nisi Prius*, before Lord Abinger and a Common Jury.)

COLLISION.—ALEXANDER AND OTHERS *v.* DITCHBURN AND OTHERS.

This action was brought to recover for damages done to an Ipswich-trader, the *William Haldimand*, by the *Gem*, Gravesend steamer, [the particulars of which have been reported in the *Shipping Gazette*] and as usual, there was much conflicting evidence.

The evidence for the plaintiff was given by Richard Orford, the master of the sloop, the mate, and the only seaman who was on board. They said their vessel was, on the evening of the 16th of October, in the Woolwich-reach; they were within 40 yards of the land on the north side, and were preparing to anchor for the night; they had got down one sail, and were standing by to lower the other, when they saw a steam-boat within 100 yards of them, and coming right upon them. They hailed as loud as possible, but were not answered, nor was there

any apparent change in the course of the steam boat. The tide was against them, and they had so little way that they could not get out of the way; but their helm was put hard a-port, which turned the bows of the vessel into the north shore. The steamer was not stopped, but came right up, and the paddle-box caught their anchor, struck them very severely, and carried them into the middle of the stream before they could get separated. They lost two of their shrouds, a great part of the bulwarks, stuncheons, &c. The night was foggy. The damage done amounted to 28*l.* or 30*l.*

On the part of the defendant, the captain, the mate, and the two look-outs of the *Gem*, and three pilots, who were passengers on board, were called. Their statements were—that the *Gem* left London at six o'clock in the evening; the weather was then hazy, but when off Greenwich a thick fog came on, and the captain ordered that they should go at half speed. The *Gem* had the tide with her, and therefore they kept out in the middle of the stream. They first saw the sloop when about 100 yards from it. The captain, who had not been off the paddle-box from the time of leaving London, thought the vessel, being in the middle of the stream, was one dropping down with the tide; he, therefore, ordered the helm a-starboard. When he got a little nearer, he saw that the vessel was coming up, and that they had put their helm a-port, so that the collision was almost impossible to be avoided. The captain of the steamer stopped the vessel, and ordered the engine to work backwards; but it was too late, and the vessel struck. All these witnesses deposed that there was a good look-out kept on board the steamer on both bows, and that they were in the middle of the stream, which was a most improper position for a vessel either to anchor in, or to work up the river against the tide, and that all the blame was attributable to those on board the sloop.

The judge summed up, and said it was a question peculiarly for the consideration of the jury. There was much conflicting testimony, but he believed that all were speaking what they believed to be strict truth; for it was very easy for any one to be much mistaken as to distance in such a night as the one in question. If they thought there was negligence upon both sides in navigating their respective vessels, then they would find for the defendant; if the negligence was on the part of the people on board of the steam-boat, then they must find for the plaintiff.

The jury immediately found a verdict for the plaintiffs, with 30*l.* 5*s.* damages—28*l.* for the repairs, and 2*l.* 5*s.* for the wages of the men during the five days the vessel was under repair.

Lord Abinger said there was always much difficulty in such cases, for the evidence was always contradictory. Where there was not much doubt in the case, he thought the best and safest plan for the public was to find against steam-boat companies, in order to teach them that upon occasions of fog or other difficulties, they ought to go at a slower rate.

Mr. Cresswell appeared for the plaintiffs; Mr. Thesiger and Mr. Martin were counsel for the defendants.

COURT OF COMMON PLEAS.

(London Sittings before Lord Chief Justice Tindal.)

WILKINSON AND ANOTHER v. RUTHERFORD AND ANOTHER.

This was an action by the plaintiffs, who are shipbrokers, against the defendants, who are shipowners, to recover a sum of 45*l.* as brokerage, at the rate of two-and-a-half per cent. on a freight of 1,300*l.*, alleged to have been obtained for the defendants, through the agency of the plaintiffs.

Mr. Sergeant Talfourd and Mr. Richards were counsel for the plaintiffs, and Mr. Sergeant Acherly and Mr. Jervis for the defendants.

It appeared that a vessel belonging to the defendants was engaged to perform a voyage to Antigua and back on certain terms, and that she had brought back a cargo from that place, the freight on which was 1,800*l.* No regular charter-party had been executed by the parties on that occasion, but an agreement had been drawn up, embodying the terms of the arrangement. According to the custom prevailing between shipowners and brokers, a broker, through whose agency a ship is chartered, is entitled to two-and-a-half per cent. on the amount of the freight. The question raised in the present case was, whether or not, although there was no formal or technical charter-party signed by the parties, the vessel in question had been really and substantially chartered, so as to bring the case within the above custom; because, if so, the plaintiffs, through whose agency the vessel had been engaged, would be entitled to their regular brokerage.

The jury returned a verdict for the plaintiffs—Damages 45*l.*

THE SAME v. MARTIN.

This was an action by the same plaintiffs to recover 29*l.*, the amount of their claim for brokerage on the sale of a vessel called the *Emerald*, which had belonged to the defendants. It appeared that the purchaser of the vessel had been introduced to the defendants by one of the plaintiffs: but it was after the purchaser had been shown the defendant's vessel by another party who had pointed it out to him as one likely to suit him; and although the plaintiff was present at some of the negotiations which afterwards took place in respect of the sale of the vessel, yet ultimately it was concluded without his further intervention, the defendant, who is himself a broker, having managed the matter in that character for himself. The question for the jury was, whether or not the sale had been substantially accomplished through the agency of the plaintiffs.

The jury returned a verdict for the plaintiffs.—Damages 29*l.*

THE ALBION STEAMER.—“The loss of the *Albion* may be fairly attributed to an act of humanity on the part of her commander, who, to prevent his vessel running over a boat, which they discovered just as they were rounding *Skomar*, at the north-west entrance of *Jack Sound*, gave his vessel a shear to avoid this boat; and before they could stop her, she struck on the outer rock off *Midland*, called the *Crab Stone*; after clearing her of this rock, they were obliged to run her on shore, to save the lives of her crew, which they happily did, just as the water

in her hold had reached the fire under the boilers, and she took the ground on the beach to the northward of Gatholm."

We have much pleasure in recording the foregoing, as the opinion of a high authority on the spot where the accident took place.

CALDERARA'S BAROMETER—We have had one of these instruments by us for some time, and can safely assert that the violent pumping motion of the mercury in the common ship's barometer has been entirely overcome in this, and that the contrivance of Mr. Calderara for keeping air out of the tube is simple and efficient, without the use of a cock, or other extraneous aid.

On inspecting the copper of H. M. S. Cornwallis, and on weighing 20 sheets stripped off from each side, it was ascertained that the greatest weight lost on a sheet did not exceed six ounces, and in some instances barely two ounces; the sheathing, which is outside a coat of chunam, and payed with pitch, appeared like a varnished tea tray—it was put on in India ten years ago.

PROPOSED SHIPPING COMPANY IN SOUTHAMPTON.—It is a well known fact that the port of Southampton has been considered by competent judges to be one of the finest ports, in a commercial point of view, in the British channel, and it has often been remarked and lamented that the spirit of enterprize, with regard to the shipping interest, has so long lain dormant, and that a port like this should be without its fair proportion of shipping belonging to it, while ports of comparative insignificance, both eastward and westward, have their shipping traversing the seas in all directions. There are about 500 vessels trading to this port annually, of which there are, on an average, 350 vessels in the coal-trade, about twenty vessels from America and the Baltic, about 100 from Ireland, the remainder from Cadiz, Oporto, Lisbon, Mediterranean, St. Michaels, &c., and out of the above number there are but very few belonging to this port. Several individuals of this town having taken the subject into consideration, have turned their attention to the formation of a shipping company, conceiving that it would greatly benefit and add to the prosperity of the town, by the money distributed among the various tradesmen and others, interested in the repairing, victualling, &c. of the vessels, and give employment to numbers, as sailors and others, connected therewith; it would also, it is presumed, offer an opportunity for profitable investment of capital, considering the trade carried on at this port, and the demands and wants of an increasing population.

A meeting of merchants and traders, largely connected with the trade and commerce of Southampton, took place at the Sun Inn, on Thursday evening, to hear the prospectus, drawn up by the committee appointed at the first meeting, read. After some discussion, the prospectus was agreed to, and a provisional committee and secretary *pro tem.* appointed.

It is necessary that the proceedings of the company should be marked by the greatest activity, for we perceive by the papers that similar companies are in progress of formation on the Medway, and at Lympington.—*Hants Advertiser.*

FALMOUTH, MAY 30.		Last Packets sailed.	Next Packets due.
Lisbon }	Every Saturday	Camden, May 15.	H. M. B. Pantaloon, [May 28.
Madeira }			
Spain }	First Day of every month	H.M.S. Volcano, May 3.	H.M.S. Firely, May 28
Gibraltar }			
{ Malta, Greece, and Corfu, Egypt, and India }			
Madeira }			
Brazil and B. Ayres }	First Tuesday in each month	H.M.B. Linnet, May 5.	H.M. B. Star, July 4. { H.M.B. Reindeer, June 10
America }	First Wednes. do.	H.M.B. Pandora, May 6.	
{ Jamaica, Leewrd. Islands, & Hayti La Guayra . . . }	First Day in every month	H.M.B. Mutine, May 3.	H.M.B. Lyra, May 26
Mexico & Havannah }			
{ Jamaica, Leewrd. Islands, & Hayti Carthagera . . . }	15th ditto . .	H.M.B. Skylark, May 18.	H.M.B. Delight May 25
	15th ditto . .	H.M.B. Sheldrake May 17	H. M. B. Opossum, [June 9.

NEW BOOKS.

NARRATIVE OF AN EXPEDITION to the East Coast of Greenland, sent by order of the King of Denmark, in search of the lost colonies, under the command of Capt. W. A. Graah, of the Royal Danish Navy. London. J. W. Parker, West Strand. 1837.

An interesting and graphic account of the proceedings of the expedition, as well as of the manners and customs of the Greenlanders, translated from the Danish, for the Royal Geographical Society of London. It is accompanied with a chart, which includes the coast as far as lat. 73° N. We shall avail ourselves of an early opportunity to give a full account of this expedition.

NAUTICAL AND COMMERCIAL POCKET DICTIONARY, and Dialogue Book, for Navigators, Merchants, and Travellers, in English, French, Danish, German, Swedish, Dutch, Spanish, and Italian. By C. Henckel and W. F. Borne, Copenhagen.

Having given at length the title of this little work, we need only add, that the terms appear well selected; they extend to above a hundred pages, and are such as cannot fail to be of service to the commanders of our merchant shipping.

THREE VOYAGES IN THE BLACK SEA to the coast of Circassia, including Descriptions of the Ports, and the Importance of their Trade, &c. By the Chevalier Taitbout de Marigny, Consul, &c. Murray, Albemarle Street. 1837.

This is an interesting account of voyages performed by the Netherland consul in the Black Sea, and throws much light on the manners and customs of the Circassians, which the commanders of our merchantmen who visit those parts, would do right to make themselves acquainted with, both as regards their personal safety, as well as the success of their voyage.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain.—C. Pearson, late of Sparrowhawk.

Commanders.—A. Wakefield, J. Paget.

Lieutenants.—C. Starmer, R. Duncan, R. Symons.

APPOINTMENTS.

Captain.—T. Maitland, 39.

Commanders.—J. Hains, J. Kingcome, 39; J. Wilkinson, 44.

Lieutenants.—H. Stroud, 1; F. Blair, 2; H. Rogers, 4; J. Nicholas, S. Tancock, 13; D. Grant, 14; R. Duncan, 22; E. L. Harvey, 23; R. Lory, 27; J. Campbell, J. Nichol, 2; D. B. G. Grant, 14; J. W. Tarlton, 12; A. C. Dixon, 33; H. Taule, 3; J. S. French, 45; J. Hollingworth, 19; W. Hay, 2; T. Smyth, 4; E. E. Gray, 12; W. W. Chambers, 39; G. Morritt, 40; J. Bowden, T. P. Clerke, J. F. Herbert, H. Johnstone, 41; J. W. T. French, 44; C. Jenkin, 42.

Surgeons.—Dr. J. Kirk, 19; H. Williams, 4; J. Watson, 12; M. Mc. Enally, 42; J. Stevenson, 44.

Masters.—T. Werness, 4; J. Shepherd, 12; R. W. White, 14; G. Wilson, (act.) 44.

Pursers.—J. Gain, 14; T. Harris, 12; R. Wilson, 14; J. H. Greaves, 44.

Second Masters.—W. Ellis, 23; J. F. Crout, 25; W. Roberts, W. Forbes, 14; J. P. Weston, 42.

Schoolmaster.—J. Steele, 15.

Chaplain.—E. Paget, 15.

Mates.—Bradley, 6; Seecombe 8; W. F. Tead, H. Pope, 9; G. G. Philips, 12; J. O. Bathurst, *Coll.* 16; C. Ludlow, 10; W. R. Smith, 30; A. Smith, 31; C. W. Hallett, 32; A. Crawley, 19; W. Mould, 12; J. M. White, 4; W. R. Smith, 30.

Midshipmen.—F. C. Elves, W. L. Gibbard, 29; H. P. Hope, 9; R. Hall, 29.

Volunteer, 1st Class.—A. Phillimore, *coll.* 21.

Masters' Assistants.—Ricketts, 6; W. H. Dix, 10; J. W. Symonds, 11; R. Dean, 11; W. Wills, 22; A. Mc. Arthy, 26.

Assistant Surgeons.—Dr. James Browne, 3; W. Minchier, A. B. Mc. Pherson, 15; A. Barr, G. Whitmarsh, J. T. Metcalfe, A. G. G. Tucker, Supernumeraries, 15; H. S. Robertson, hospital mate. Jamaica, R. Denmark, 24; M. Covey, 6; F. Mansell, 28; J. Campbell, (d) 4; Dr. S. Sproule, 19; R. Mc. Crae, 36; W. Baily, 43; S. Donnelly, 44; Dr. Fitz Mansell, 45.

First Engineers.—W. Shaw, 20; M. Power, 37; A. Witham, W. Pearman, 14.

Second Engineer.—J. Richards, 38.

Clerks.—J. Archer, 5; J. Barnes, 7; C. Elkins, 7; Admiral Sir Charles Paget, J. Angelly, 24; J. Kealing, 42.

Gunners.—H. Gilbreath, 7; W. Williams, 12; J. George, 19; H. Gilbreath, 7; J. Shallow, 15.

Boatswains.—John Stanley, 17; W. Andrews, 19; W. Bunt, 4.

Carpenters.—R. Hains, 12; J. King, 19; E. Andrews, 4.

[Vessels' Names to whom Officers are Appointed.]

1, Asia; 2, Coast Guard; 3, Royal Adelaide; 4, Comus; 5, Speedy; 6, Fair Rosamond; 7, Sparrowhawk; 8, Sparrow; 9, Hercules; 10, Seaflower; 11, Britannia; 12, Ringdove; 13, Ordinary at Plymouth; 14, Victory; 15, Cornwallis; 16, Pique; 17, Princess Charlotte; 18, Scylla; 19, Sappho; 20, Hermes; 21, North Star; 22, Excellent; 23, Wizard; 24, Saracen; 25, Royal Sovereign; 26, Messenger; 27, Delight; 28, Greenwich Hospital; 29, Castor; 30, Seringatam; 31, Mastiff; 32, Salamander; 33, San Josef; 34, Brune; 35, Hastings; 36, Scorpion; 37, Flamer; 38, Firefly; 39, Wellesly; 40, Hastings; 41, Ordinary at Sheerness; 42, Romney; 43, Thalia; 44, Hazard; 45, Greenwich Hospital.

Births.

At Lamphey Court, Pembroke, on the 17th April, the lady of Captain Laws, Royal Navy, of a son.

On the 13th May, the lady of Dr. Chas. Inches, R.N., of a son.

On the 10th May, at Wells, Norfolk, the lady of Lieut. Westbrook, R.N., of a son and heir.

On the 25th April, the wife of Lieut. Thomas Young, R.N., Coast Guard Service, Langstone Harbour, of a son.

At Fort Twiss, Hythe, on the 2nd April, the lady of Lieut. H. N. Atkinson, R.N., of a daughter, which died a few hours after.

Marrriages.

At Plymouth, Captain H. D. Parker, R.N., to Josephine Maria, eldest daughter of Capt. R. L. Hornbrook, R.N.

On the 2nd May, at Stoke Church, Plymouth, Charles Thurtell, Esq., Lieut. R.N., to Ann Augusta, daughter of John Morgan, Esq., Surgeon, R.N.

On the 11th May, at Clapham, by the Rev. Frederick Borradaile, Nathaniel Frederick Edwards, Esq., Lieut. R.N., son of the late John Edwards, Esq., of Worting-house, Hants, to Mary, youngest daughter of the late William Cotton, Esq., of Balham-hill, Surrey.

At St. George's Church, Stonehouse, Devon, Mr. James Paynter, R.N., to Miss Hayes, of East Emma Place.

At Anthony, Devon, Mr. Austen, master, R.N., to Miss Gordon, of Torpoint.

Captain C. Bell, R.N., second son of the late M. Bell, Esq., of Woolsington, Northumberland, to Rachel, daughter of R. W. Brandling, Esq., of Low Gosforth.

On the 27th April, at St. Paul's Church, Hammersmith, Albert Levison, Esq., of Kingston, Jamaica, to Charlotte, eldest daughter of the late Captain Woolward, R.N., Ramsgate.

On the 11th instant, at Budock, Lieut. John M. Montgomery, of the 49th foot, to Jane, daughter of the late Lieut. John Moore, Commander of H.M.S. Delight.

Last week, Lieut. Frederick Blair, R.N., to Mary, eldest daughter of the Rev. L. Massingbird, Rector of Kettlethorpe.

At Montreal, Canada, on the 11th April, John Bleakley, Esq., to Mary-Ann, daughter of Stephen Garwood, Esq., R.N.

Deaths.

On the 19th ult., at Dieppe, Lieut. Daniel Harrington, R.N., an old follower of Lord Nelson, in whose ship he served at the battle of Trafalgar.

On the 26th of April, at Ross, Herefordshire, Captain J. Caulfield, R.N., aged 71.

April 24, at Wickham, Hants, aged 72, Pitt Burnaby Greene, Esq., Capt., R.N.

On the 23rd April, at Bognor, in the 19th year of his age, Thomas Marten, the only son of Thomas Marten, Esq., R.N.

On the 24th April, in the 75th year of her age, at her residence at Titchfield, Mrs. Carolina Vans, relict of Lieutenant Samuel Barrington Vans, R.N.

At Hoop Cove, near the Berry-Head,

Lieut. H. P. Law, R. N. (1812), Coast Guard Service.

On Saturday, the 22nd April, in the Asylum, at Plympton, Lieut. J. H. Servante, R.N. (1809), aged 51.

At Fowey, on the 21st instant, aged 57 years, Mrs. Hearle, wife of Com. Hearle, R.N.

On the 29th April, at New Field Villa, Entry-Hill, Lieut. Novosielski, R.N.

On the 12th May, Capt. John Parish, R.N., (1817), and latterly a magistrate for the county of Somerset.

On the 12th May, at Edinburgh, Capt. R. H. Barclay, R.N.

On the 12th May, retired Commander Wm. Chivers.

At Gibraltar, on the 20th April, Lieut. Duncan Frederick Campbell, R.N.

At Holywood, Co. of Antrim, Lieut. G. H. Sarratt, R.N., (1815), chief officer of the coast-guard on that station.

May 13th, in Charlotte-street, Morice Town, Devonport, Mary, the wife of Lt. Wells, R.N., aged 33 years.

At Jever, Grand Duchy of Oldenburg, Dr. J. L. Tiarks, F.R.S., His Britannic Majesty's astronomer, under the 5th article of the Treaty of Ghent, aged 48 years. He will be remembered by his measurement of the longitude of Madeira.

At King Street, Portsea, Mrs. Inches, wife of Dr. Charles Inches, Surgeon, R.N., who recently sailed in charge of a convict ship for New South Wales.

On the 11th May, in Stepney-square, Jane, the eldest daughter of the late Rbt. Cooper, Esq., purser, R.N.

On the 27th April, at Fisherton, Lieut. Thomas Phelps, R.N.

Lately, near Helston, Com. Samuel Kempthorne, R.N., (1761,) aged 81.

Lately, at Porto-Bello, North Briton, Mrs. Frazer, widow of the late Admiral Alexander Frazer.

On the 14th April, at Nice, in Piedmont, Charlotte, wife of Com. George Hope, and daughter of Vice-Admiral and Lady Elizabeth Tollemache.

At Verney Place, Exeter, on the 17th April, Richard George Peacock, Esq., R.N., aged 72.

At Ross, county of Hereford, James Caulfield, Esq., Capt. R.N. aged 71.

On the 2d May, in Great Southsea-street, Capt. Dutton, R.N.

At sea, on his voyage to Mexico, Lieut. Moore, commander of His Majesty's packet Delight.

Lately, at Bath, Mrs. Admiral Mackenzie, aged 83.

At Greenwich Hospital, Mr. John Buist, Assistant-Surgeon, R.N., (1806,) assistant dispenser at that establishment.

At Jersey, at the residence of her son-in-law, Commander Eager, Lucy, widow of the late Capt. Bullock, R.N.

On the 30th April, on board H.M.S. Medway, at Plymouth, Lieut. James Derri-man, R.N.

Lately, at Perth, Mr. Peter Blair, retired surgeon, R.N., aged 71.

Lately, in Cornwall, Com. Sam. Kemp-thorne, aged 81.

At Paris, Ann, eldest daughter of the late Hon. Archbld. Cochrane, Capt. R.N.

At Southsea, Commander Thomas Dutton, (1812.)

On the 14th April, at Kings-bridge, Devon, Lieut. H. P. Lew, R.N.

Lately, Lieut, John Goldie, R.N.

Commander John Roberts, (on the retired list,) aged 64, died very suddenly at the house of Mr. Wignmore, York-street, Dover, lately.

On the 14th April, at her father's house, deeply regretted, Julia, wife of A.H. Gilbert, Esq., R.N., eighth daughter of W. H. Price, Esq., of Kingsland-place, Middlesex.

On the 6th May, at Shanklin Parson- age, Isle of Wight, in the 21st year of his age, W. A. Christian, Esq., ensign in his Majesty's 37th regiment of foot, son of Capt. H. Hannay Christian, R.N.

METEOROLOGICAL REGISTER,

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

APRIL, 1837.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	S	In. Dec.	In. Dec.	41	45	29	47	N.W.	N.W.	3	3	Bc.	Bc.
2	Su.	29.90	29.88	35	45	25	45	N.W.	W.	2	3	Bcm.	Bcm.
3	M.	29.94	29.88	35	45	25	45	S.W.	S.W.	7	7	Qbc.	Op (3)
4	Tu.	29.61	29.65	37	43	29	46	N.W.	N.W.	3	4	O.	O.
5	W.	29.66	29.72	38	42	33	45	N.E.	N.E.	6	7	Qo.	Qo.
6	Th.	29.86	29.90	37	42	30	44	N.E.	N.E.	6	6	Bcq.	Qbcps 3x4
7	F.	30.06	30.12	38	38	29	44	N.	N.E.	4	5	Bcq.	Qbcps (3)
8	S.	30.33	30.32	37	43	31	43	N.E.	N.E.	6	6	Qbc.	Qbc.
9	Su.	30.28	30.24	34	39	27	40	N.E.	N.E.	7	7	Qbc.	Qbcps 3x4
10	M.	30.06	29.94	36	36	26	39	N.E.	N.	6	6	Qbcps 2)	Qbcps (3)
11	Tu.	29.66	29.62	32	41	21	42	N.W.	S.E.	2	2	O.	O.
12	W.	29.64	29.68	37	40	23	42	E.	E.	3	3	Bc.	Ops (3)
13	Th.	29.85	29.87	35	38	33	39	N.E.	N.E.	5	5	Gops 2)	Go.
14	F.	29.89	29.84	39	44	33	45	N.	N.	1	1	O.	Bc.
15	S.	29.65	29.57	39	46	28	47	S.	E.	2	3	B.	B.
16	Su.	29.38	29.10	35	37	33	38	N.W.	N.W.	4	3	Os 1) (2)	Ops (3)
17	M.	29.67	29.73	36	42	34	46	N.W.	N.W.	6	6	Qo.	Qo.
18	Tu.	29.87	29.92	38	41	36	44	N.W.	N.W.	6	5	Qo.	Qo.
19	W.	29.95	29.94	43	49	40	52	N.W.	N.W.	1	1	O.	Bcm.
20	Th.	29.81	29.83	52	42	35	55	S.W.	N.W.	2	4	Bc.	Bcp (3)
21	F.	29.75	29.67	47	41	33	50	S.W.	S.W.	3	4	Opr (2)	Ops (3)
22	S.	29.53	29.56	41	46	34	48	W.	N.W.	3	4	Bc.	Bcprl (3)
23	Su.	29.63	29.67	43	49	39	49	S.W.	S.W.	4	5	Op. (1) (2)	Op. (3)
24	M.	29.71	29.75	46	56	37	57	S.W.	S.W.	3	3	Bc.	Bcpr 3)
25	Tu.	29.90	29.92	48	55	35	56	S.W.	S.	3	3	Bc.	Or. (3)
26	W.	29.83	29.85	52	58	39	59	S.W.	S.W.	3	3	Bc.	O B' 4)
27	Th.	29.77	30.72	49	53	38	57	S.W.	S.	4	4	O.	Op (3)
28	F.	29.67	29.62	50	51	38	56	S.W.	S.	2	2	Bc.	Bc.
29	S.	29.52	29.37	50	52	45	55	S.E.	S.E.	3	4	Od (3) (4)	Od (3) (4)
30	Su.	29.45	29.49	53	55	49	57	S.W.	S.W.	6	5	Qor (2)	B.

APRIL—Mean height of the Barometer=29.774 inches; Mean Temperature=40.5 degrees; Depth of Rain fallen=1.10 inches.

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

ORIGINAL PAPERS.

JULY, 1837.

NOTES FROM THE JOURNAL OF CAPT. MASTERS, OF LIVERPOOL, ON MAZATLAN.

ON the whole coast of Mexico (on its Pacific side) from June to November, the weather is very tempestuous, with rain, thunder, and lightning, and in many parts of it this season is also very sickly. On the coast of Oaxaca, and in the Gulf of Tehuantepec, the rainy season generally commences about the end of April, or the beginning of May, from which time the roadsteads are very unsafe, until the bad weather breaks up, which is in December, and on the coast of Guadalaxara, and Sonora in November.

The dry season is remarkably fine, the sky generally clear, and the winds moderate, and rain falls very seldom. From our leaving Mazatlan in January to our sailing from the coast of Oaxaca on the 1st of April we had not even a sign of a shower.

A heavy fall of dew is almost a sure indication of a breeze from the northward. A few hours previous to its springing up, the air becomes sultry and parching, and continues so during the time the norther is blowing. In the Gulf of Tehuantepec particularly, the norther is very uncomfortable. A dismal haze hangs over the land, and the wind comes off in gusts as if it had passed over a furnace, veering from N.N.W. to N.N.E. On the western coast it is generally to the westward of north.

In the dry or summer season a vessel bound to the northward of Cape Corrientes from Chili, or round Cape Horn, should cross the equator in longitude 105° , or between it and 110° , and proceed due north if possible. The wind in her progress to the northward will haul round from S.E. to E. and N.E., with a current sitting in the same direction as the wind is blowing, or nearly so, and at times at the rate of one mile per hour. It is very probable that in standing with the starboard tack on board, that westing will also be made. If a ship be on the larboard tack, and the wind supposed to be N.N.E., she would make a very bad landfall, taking the current into consideration, even allowing her to be as far north as 15° , but by standing on as far as the latitude of Cape San Lucas, there is every chance, indeed almost a certainty, of having the wind from the north-west, and at the same time the whole range of coast under the lee. I stated this opinion to the captain of an American whaler, who had been on the coast several times: he fully agreed with my observations, and said that the prevailing wind on the coast of California is north-west, and that the best way to make a short passage to the Gulf of California or Mazatlan, would be to keep clear of the coast of Mexico, and stand well to the northward. In the winter, or rainy season, as the wind is often from the south and east, a direct course would be the most advisable.

In my passage to Mazatlan we did not stand to the northward, as I afterwards found, far enough, although we did not tack to the eastward until we were in latitude $18\frac{1}{4}^{\circ}$, the wind in general being N.E. As we got to the eastward the wind gradually hauled to the northward, when we made the coast of Mexico, about 40 miles to the S.E. of Cape Corrientes, from which it took us three days to get to the southern of the Tres Marias. When in-shore, the wind, when it blew fresh, was from the N.W., and when moderate from N. to N.N.E. In the morning we had an irregular land-breeze, the current setting constantly to the S.E. From the Tres Marias we were two days getting to Mazatlan with the wind as already stated.

It appears that in the Gulf of California, in the dry, or summer season, the wind is mostly from the N.W., in strong breezes, with a short chop of a sea running. The coasting vessels always keep the California shore aboard in beating up the gulf.

The port of Guaymas is said to be the best in the whole coast of Mexico. It is also more healthy than the southern part of the coast. Vessels in the rainy season lay up here; it is the only place, with the exception of San Blas, that can be considered safe on this part of the coast.

Mazatlan is a port very easily made. It is formed by a cluster of islands; to the southward of them is a long line of beach, with lowland thickly covered with trees, running several miles in before it reaches the foot of the mountains, and continues the same as far to the southward as the north side of the bar of Tecapan, where the land is high.

The port of Mazatlan at its entrance, is formed by the island of El Creston on its western, and the island of El Vienado on the southern side. From the sea the former has nearly a regular ascent, the length of the island lying from east to west, where it terminates in an abrupt precipice, and is covered with small trees. It has from eight to ten fathoms water to within a few fathoms of it. The island of El Vienado has a very similar appearance, and is about half the height of El Creston, being partially covered with trees. These islands can be seen several miles before the land at the back of the town makes its appearance. The outer rock is situated well outside the roadstead, and forms nearly an equilateral triangle with the islands of El Creston and Vienado; it is about eight feet high, and nearly the same breadth, and from seven to eight fathoms long from north to south; there is five fathoms water close to it.

In the chart* of the coast is an excellent plan of the harbour of Mazatlan, and the soundings in general are very correct, but the stranger in coming to an anchor in the night time, should not attempt to pass within the line from the outer part of El Creston to El Vienado, but anchor outside in from nine to twelve fathoms, where he will find sand and mud. Within the port is a long sand, which extends out from the bottom of it, a great part of which is dry at low water, and is shoal for some distance to the south-east, extending nearly as far as the island El Vienado, with a boat channel between it and the island. The inner anchorage is to the westward of this

* [Published by the Admiralty of "Central America," west coast of Mexico: but there is a wide difference as to the names of the islands, and we shall be glad of further information respecting them.—Ed. N.M.]

sand. It is said that the bank is increasing, and that the port has filled very much within a few years past.

In the summer season large vessels anchor between the two islands at about a third the distance from El Creston to Vienado, and moor east and west. The depth of water is from seven to nine fathoms, sand and muddy bottom. A vessel drawing twelve feet water might go inside to the minor anchorage without the least risk, but as the pilot has launches to get employed, he cannot be persuaded to take a vessel in, even drawing nine feet.

North of the island El Creston, and between it and the main land, is the island of Gomez, which is low, and is separated from El Creston by a narrow boat-channel. From about the middle of Gomez a bar extends to the eastward across the port to the sand-bank already mentioned. The pilot informed me that there were patches of shoal-water on it when the water was low, not having more than six feet on them; (which might be the case;) but where I sounded, there was not less than twelve feet. Inside the bar it deepens to four or five fathoms, and close up to the town, abreast of the custom-house at low water, there is from two and a half to three fathoms, with a sandy bottom.

The custom-house is built near the inner point of sand and rock, and is marked in the chart to the northward of what was called a castle. It was merely a platform, with a few guns mounted on it, but it is now dismantled.

When the wind blows strong from the N.W. there is a short chop of a sea heaves in between the island of Gomez and Point Calandare, although the distance they are apart is short, but by anchoring, as already mentioned, opposite Creston, most of it is avoided.

In the rainy season it is very unsafe to lay inside, as gales come on from the southward, which bring in a heavy sea. Vessels of all sizes anchor in this season in the outer roads between the islands and the outer rocks from which they can be got under way, and stand clear of the coast.

To the northward of the present port of Mazatlan, about five miles, is the N.W. port of Mazatlan. It is a very fine bay, and well sheltered from the N.W. winds by the Pajaros or Birds Islands.* It was in the southern part of this bay that vessels formerly discharged their cargoes, but the present port being more secure, it was established in its stead about thirty years since.

The river is said to extend about thirty miles from the port, and passes within a few miles of the town of Mazatlan, where the custom-house formerly was, but was removed to the present port a short time since; and as all business now is transacted at the town of Ragosa, (commonly called Mazatlan,) the old town is falling fast to ruins. About five years since there was not a house standing where the town of Ragosa is now built. When a cargo arrived, a few tents or temporary huts were erected to receive the goods, from which they were dispatched to the custom-house when convenient.

The town of Ragosa, (Mazatlan,) covers a space of three-quarters of a mile square; the western part is where the merchants and shop-

* [This is a single island in Capt. Beechey's plan, and called "Venado," which forms the eastern entrance of the old port, according to Capt. Masters.—ED. N.M.]

keepers reside. The streets are mostly at right angles to each other; the eastern part is built on low marshy ground; it is where the working people live, in small huts made of the palm-leaf. The population is from 5,000 to 6,000, amongst which there is neither priest nor lawyer; nor is there any thing in the shape of either church or chapel in the town. The land behind, and near the town, had a very barren appearance when I was there. The houses are built by driving a number of poles into the ground, in two rows, leaving a space between them for the breadth of the intended wall.

Horizontal pieces are then made fast to them, with raw hide thongs, and the space between filled up with stones and mud, the walls are then plastered with the same material, and whitened with an earth procured near the town, which answers for that purpose, and has the appearance of lime. When finished the walls have a very solid appearance. The roofs are covered in with red tiles, which are also made there. At the western part of the town is a small sandy bay, from this the sand is blown in large quantities through all the streets, which makes it disagreeable when a fresh breeze is blowing. A few troops are stationed at the port opposite the guard-house, three guns are mounted, one of them an old brass piece, said to have been brought to Mexico by Cortez. The climate is considered healthy, even in the rainy season. The market is not well supplied, vegetables are very scarce; there is very little grown here; beef is sixteen pounds per dollar, but by purchasing an ox alive, it can be had for much less; fowls are about four dollars the dozen. There is abundance of fish here, but the people are too lazy to catch them. With a seine in a haul or two, an immense number might be caught, at the outer rock, when the water is smooth, and close to the island of Creston; in its southern and south-eastern part a large quantity might be caught with the grains as well as by hook and line. The fish in general are very large; turtle is also plentiful in the season, and a quantity of shell fish, amongst which is the pearl oyster. In the rainy season, when the water is warm, the divers go down for them, but they are not caught here in large quantities. The woods abound with deer, which very often come down on point Calandare to feed. I saw three together one morning on the beach; they were not the least frightened, although we were close to them. Wild fowls also are plentiful in the small lakes close to the town, and in the rainy season are very numerous.

The watering place for shipping, is a small distance up a creek, which extends up from the east side of the river, and the water is got from a few holes which are dug in the sand, about fifty fathoms from the beach. In January, we could only fill 600 gallons per day, and that rather brackish. There are now several wells dug in the town, from which an occasional supply may be procured.

Wood for fuel is to be had in abundance, for the trouble of cutting. I did not see any trees large enough for building vessels of any size.

Nearly all the trade of Mexico (at this time, January) is carried on in this port, and in the dry season a great number of people from the interior, come down to effect purchases, which makes the place quite alive, as most of them bring dollars or bars of silver, and plata-pena, the pure silver in mass, so called, from pena signifying rock, in Spanish. Of this latter article they have plenty. There are a few

vessels belong to the port that are mostly employed in trading to Valparaiso, for European goods, and to the Sandwich Islands, and Manilla, other ports where Chinese goods can be procured, which latter are in great repute. The exports of Mazatlan are a small quantity of gold, bars of silver, and plata-pena, and a small quantity of dollars, of the latter article, those which find their way here, are generally kept for circulation, besides the greatest part of them are either very much worn, or provisional. The above metals and Brazil or Nicaragua wood are the only articles sold at Mazatlan. The wood at this time was sold on shore at one dollar per quintal, and appeared to be of pretty good quality. The coasting trade is carried on to a very limited extent.

The inhabitants are generally a mixed race, between the white and Indian. During the time of the federal government, murders were frequently committed here, the greatest punishment the perpetrators received, was only a few months' imprisonment. Although the laws are said to be good, they were never carried into execution, or very seldom, either through indolence, or fear on the part of the authorities. It was supposed that the laws would be more respected under the new (central) form of government.

There are several mercantile houses established here, but the trade is mostly in the Spanish and Mexican hands, or those who are natives of what were Spanish colonies. There is more jealously existing among the merchants here, than I believe in any other place, and with the exception of the houses of the American consul, and another, I had not a very high opinion of them. The short time I was here gave me but few opportunities of seeing much of their character, but that appeared to be shuffling, and over-reaching, quite different to what I had expected.

There are several shops in the town tolerably supplied, but not to be compared with those of Vera Cruz, Tampico, or even Campeche.

Whilst we were here, the military authorities took the oath of fealty to the new form of government. The three guns at the guard-house were in great demand for three days, in firing salutes, and as our brig was under the Mexican flag, the commandant sent on board an order to return them each salute, and being from fourteen to twenty-one guns, they very soon decreased our stock of powder.

The last day they had the firing to themselves, or we should have had none left; but, however, the commandant, who was on board the last time we fired, appeared as much pleased as a child with a pop-gun.

From Mazatlan to San Blas, the coast is low, (excepting near the entrance of Tecapan,) and covered with trees, and is clear of all danger. About a mile from the shore, between Mazatlan and Tecapan, the soundings vary from nine to twelve fathoms fine sand. On the bar of Tecapan the water is very shallow, and in general breaks. This place is visited occasionally by canoes for vegetables and fruit, for the Mazatlan market. The Haciendas about here are chiefly for breeding cattle; we saw a large quantity as we passed along the coast.

The island of Isabella is high, and can be seen at the distance of six leagues. Shortly after losing sight of it, in sailing for San Blas from the North, the *Piedra Blanca del Mar*, makes its appearance.

This is a bold rock, steep to all round, and is said to be 130 feet high. It has the appearance of chalk, which in a great measure is caused by the dung of the sea-birds, of which we saw large flocks hovering about it, as we passed. This rock is plainly seen from the town of San Blas, and bears from *Piedra Blanca de la Tierra*, W. b. N., four leagues nearly. In running along shore, from *Piedra Blanca del Mar*, to San Blas, the soundings are very regular, with a fine sandy bottom. Having rounded *Piedra Blanca de la Tierra*, stand in for the entrance of the harbour, and anchor with the *Piedra Blanca*, bearing about W.b.S., and the flag-staff at the custom-house at the town of San Blas north. You will then have about five or six fathoms water, with a mud and sandy bottom. This is considered about the best berth.

We remained at San Blas only six days. The cargo was discharged in two, (it was only about fifty tons,) with the assistance of one of the only two launches at the port. As the anchorage in the roads is very good, we did not moor. The other vessels which were lying here at the same time, had only a single anchor down: one of them, a brig belonging to the port, had her sails unbent, and only three hands belonging to her, tolerably good proofs of the safety of the anchorage at this time of the year. Indeed we did not experience the least swell from the time of passing Cape Corrientes, to the northward, until we repassed it bound to the coast of Oaxaca; the sea was as smooth as if we had been in a river the whole time.

[To be concluded in our next.]

ALTERATION OF THE BUOYS IN THE FIVE FATHOM CHANNEL.
Mouth of the Thames.

THE following notice relating to the buoys of the five fathom channel has been given by the Trinity House:—

It having been ascertained in the course of the Admiralty survey now in progress, that the sands by which the five fathom channel is bounded have undergone considerable alteration, notice is hereby given, that the positions of certain of the buoys therein have been changed, in the manner hereinafter mentioned; and that an additional buoy, coloured white, and named "Middle Spaniard," has been placed on the south side of the channel.

The following particulars respecting the changes of position adverted to, and the marks and compass bearings for the buoys by which the five fathom channel is now marked, are as follow, viz:—

The Spile Buoy has been moved about 1 $\frac{1}{4}$ mile W.S.W. from its former position, and now lies in ten feet water, with—	
A clump of trees at the foot of a slope on the distant land on with the extreme east end of the high land of Sheppy	S.S.W. $\frac{1}{2}$ W.
The Dock-yard Sheers at Sheerness, on with the tower of Sheerness new church	W. b. N. $\frac{1}{4}$ N.
Nore Light vessel	N. W. $\frac{1}{4}$ W.
Cant Buoy	N. Easterly.
Middle Ground Buoy	S.E. $\frac{1}{2}$ S.

The Middle Ground Buoy has been brought in to the southward, and now lies in ten feet water, with—

Shottenden Windmill, in line with the West Muscle House.....	S.S.W. $\frac{1}{2}$ W.
Reculver Towers, their length on the west end of Clewewood	S.E. $\frac{1}{4}$ S.
West Spaniard Buoy	S.E. $\frac{1}{2}$ S.
Middle Ground Spit Buoy.....	E. S. E.

The West Spaniard Buoy has been moved about 200 fathoms to the westward, and now lies in ten feet water, with—

Whitstable church tower, in line with the centre of Whitstable tavern	S. $\frac{1}{2}$ E.
Minster West Windmill, in line with the south side of Reculvers towers.....	S.E. $\frac{1}{4}$ S.
Middle Ground Spit Buoy.....	E. $\frac{1}{2}$ N.
Gilman Buoy	E. $\frac{1}{2}$ S.
East Spaniard Buoy	E. by S.

The Middle Ground Spit Buoy remains in its former position, with—

Whitstable church tower, its width open east of the house next west of it	S. $\frac{1}{2}$ W.
The dock-yard Sheers at Sheerness, their width open southward of Sheerness church tower	W. b. N. $\frac{1}{2}$ N.
Gilman Buoy	E. by S. $\frac{1}{2}$ S.

The Middle Spaniard ; this additional buoy has been placed on the south side of the channel, in thirteen feet water, with—

A black roofed barn on the back land, in line with Whitstable tavern	S. $\frac{3}{4}$ W.
Herne Black Windmill, in line with the west end of Herne preventive station house	S. by E. $\frac{3}{4}$ E.
West Spaniard Buoy	W. N. W.
Middle Ground Spit Buoy	N.N.W. $\frac{3}{4}$ W.
Gilman Buoy	N.E. b. E. $\frac{3}{4}$ E.
East Spaniard Buoy	E. $\frac{1}{4}$ S.

The Gilman Buoy has been brought in to the southward, and now lies in thirteen feet water, with—

The westernmost of two clumps of trees on the back land, in line with the first house next west of Whitstable church	S. by W. $\frac{1}{4}$ W.
St. Nicholas church tower, in line with the east end of Bishopton Cliff.....	S.E. $\frac{3}{4}$ S.
East Spaniard Buoy	E. by S. $\frac{1}{4}$ S.

The East Spaniard Buoy remains in its former position, with—

The West end of Clewewood, in line with the west end of Lower Hale Grove..... S.E. by S.

The Black Mill above Herne, its width open westward of a white mill on the beach

West Pan Sand Buoy

West Last Buoy

Note.—The depths of water are all those of low water spring tides.
(By order,)

25th May, 1837.

J. HERBERT, Secretary.

NEW LIGHTS IN THE MEDITERRANEAN AND BALTIC.

THE following notices to mariners have been recently issued by the Admiralty.

*Light of La Garoupe, or Antibes, Department de la Varre.
Communicated by the French Government.*

Mariners are hereby informed that, from the 1st of July next, a fixed light will be shewn every night from the tower recently constructed on the peninsula of La Garoupe, a mile and a half to the southward of the port of Antibes, and near the chapel of Notre Dame de la Garde, in lat. $43^{\circ} 33' 51''$ N. and long. $7^{\circ} 8' 4''$ E. of Greenwich.

The light will be elevated eighty-two English feet above the ground, and 332 feet above the level of the sea, and will be visible in fine weather at the distance of seven leagues.

In approaching Antibes from the westward, mariners will see the fixed light of Ville-Franche, which stands on Point Mala, latitude $43^{\circ} 40' 30''$ N. and long. $7^{\circ} 19' 46''$ E., and also the intermitting light at the entrance of the port of Antibes, lat. $33^{\circ} 45' 10''$ N. and long. $7^{\circ} 7' 51''$ E., at the same time that they see the fixed light of La Garoupe; but this last mentioned light alone will be seen by mariners approaching it from the southward or south-westward, until they have rounded the peninsula.

Hydrographic Office, Admiralty, 30th May, 1837.

Lighthouse of Hammaren, Bornholm Island.

Information has been received by his Majesty's Government that the light hitherto produced by a coal fire in the lighthouse of Hammaren, on the north point of the island of Bornholm, is about to be replaced by a fixed light from lamps. The necessary alterations are to be commenced this month, but during their progress lamps will be lighted every night on the north point of the said island for the guidance of shipping.

Hydrographic Office, Admiralty, 2d June, 1837.

LIGHT ON THE MOUSE SAND.

To the Editor of the Nautical Magazine.

THE following letter from an old experienced seaman, on a defect in the navigation of the mouth of the river Thames, we are in hopes will meet with the attention which it merits from the Trinity Board.

Sir,—You are probably aware of the corporation of Trinity House, London, having, after the most pressing solicitations, at length placed floating-lights, for the greater safety and facility of the trade on the west end of the "Swin-middle," and north-east end of the "ship-wash." They have also, in the abundance of their zeal, misplaced another in "St. Nicholas Gat," Yarmouth roads. When we, therefore, consider the many shipwrecks, and loss of life, continually occurring on these dangerous sands for the want of these lights, and immense property thus annually sacrificed, we are at a loss to conceive a reason

altogether adequate for so long withholding an improvement so essentially beneficial to the best interests of the commercial navy.

But, grateful as we are to the elder brethren for the establishment of these lights, another one on the west-end of the "Mouse-sand," is still wanted to render the lighting of these narrow and intricate channels complete. Few people are probably aware of the magnitude and extent to which steam-shipping alone, passing through these narrows, has within these few years arrived. At this moment, 9,000 tons of steam-shipping pass twice weekly, navigated by 500 men, carrying goods annually worth, probably, ten millions sterling, and pay for light dues alone, a sum not less than between £6,000, and £7,000.

Now as the Edinburgh, Dundee, Aberdeen, Inverness, Hull, Newcastle, Hamburgh, Stockton, Berwick, &c. steamers, find it necessary to sail from the river in the evening, for the want of a light on the "Mouse," to lead them down to that on the Middle, they are under the painful necessity of anchoring at the Nore till daylight, which occasions a great loss of time, besides adding considerably to the expense of the voyage, and inconvenience of the passengers. Indeed, no ship, without imminent danger, dare take the Swin down from the Nore after dark; and the result is, that every morning at daylight, whole fleets of shipping are seen getting under way, bound to the northward, that certainly would have proceeded, without anchoring, on their respective voyages, with as much safety as in daylight, were a light once placed on that sand.

It is now many years since lights on these sands were requested from the corporation of the Trinity House, but every former request, till very lately, was met by reasons not altogether consistent with the nature and extent of their corporate rights and privileges. May we, therefore, now hope that that body of nautical and experienced gentlemen, who each and all of them, have often felt the removal of a burden almost intolerable, from the mind, on the first discovery of a long-looked for light, and who are now the guardians of the shipping interests, will see the correctness of this appeal for a light on the upper end of the Mouse Sand, and give their directions accordingly. Let them only consider the magnitude of steam trade now passing through these channels, and amount of light-dues paid by them—a sum quite sufficient for the maintenance of all the lights on the coast, from the Nore to Cromer, and they surely never can hesitate one moment in making the system of lighting the Swin, in every sense of the word, complete.

PHAROS.

CHANGES IN LIGHTHOUSES.

THE following alterations in lights on the eastern coast of Great Britain, have been advertised:—

Hartlepool Harbour Lights.

Since the erection for a red light upon Hartlepool pier, on the 22d of December, 1836, a tide-light has been erected, of a white colour, and is placed immediately below the red light, which is lighted at half flood, and continues till half ebb. Two red lights have also been placed upon the dock walls.

The magnetic bearings of the pier light, taken from the lighthouse, and estimated distances, are as follow :—

Outer part of Hartlepool Heugh	E.S.E.	distance $\frac{1}{4}$ mile.
Longscar Buoy	S. $\frac{1}{2}$ E.	2 miles.
Rowcliff	S.E. by S.	12 miles.
Chequered Buoy off the Bar	S.S.W. $\frac{1}{2}$ W.	about 120 fathoms.

For the bearings of the two red lights upon the dock walls, vessels in running for the harbour, must, when the pier light bears N.N.E. $\frac{1}{2}$ E. about 120 fathoms, steer in a N. $\frac{1}{2}$ E. direction, until the two lights are brought into a line, bearing N. by W. $\frac{1}{4}$ W., which is the direct course up the channel to the entrance of the inner harbour.

Hartlepool, April 20, 1837.

Dundee Harbour.

On and after the 1st day of August next, the present high light in the tide harbour, immediately to the westward of King William's dock-gates, instead of a bright light, as at present, will exhibit a red light to the S.E., which light in one, with the red light on the east protection wall, leads vessels clear of the Beacon rock.

J. N. SMART, Harbour-master.

Dundee, June 5, 1837.

BRITISH SEAMEN EAST OF THE CAPE. FROM THE NOTES OF A LONDON TRADER. AND WEST OF NEWFOUNDLAND, by *Commander E. Smith, R.N.*

[As it is one of the objects of this work to improve the condition of British seamen, the Editor requests, that the Commanders of our Merchant-ships on their return home, will transmit to him by any convenient opportunity, free of postage, an account of those occurrences relating to discipline among their crews, that may have taken place during the voyage. It is only by an exposure of the system actually in progress, that those evils can be pointed out, which require remedy.]

ON my first voyage to Calcutta, in February, 1834, I was much surprised to find seamen so plentiful, and on enquiry, I learnt, that it was the common practice for the crews of European vessels to desert from their ships, at that place; and such indeed, by experience, I found to be the case, a very short time afterwards. Seamen generally, have two months' advance of wages paid to them on leaving England, so that not much is due on the arrival of the ship at Calcutta. There the system of crimps is carried on to perfection. These people keep punch-houses, and entice Jack so effectually, that even the best of men, get taken in by them, and are ashamed to go back to their ships, after being too long absent from duty. The result is not unfrequently an untimely grave, from the effects of climate, added to the excesses of all kinds, in which the unfortunate seamen are indulged.

The suppression of these punch-houses in Calcutta, and some wholesome regulations as to liberty men, is certainly well worth the attention of the Government.

It is notorious that the punch-houses of Calcutta, and their crimps, are the bane of British seamen. If these were done away, desertion there would cease immediately; but for political purposes, perhaps,

(the value of the licences being very high,) they are tolerated. The common practice, when shipping men at Calcutta, is to give two months' advance, payable when advices reach Calcutta that they have proceeded in the vessel. This of course is nothing in favour of the seamen, for they must have recourse to crimps, who take good care to have their own score paid first, and can score two for one as well as the London crimps, as well as secure a large discount on the note for taking the risk of the seaman, fulfilling his agreements.

With respect to liberty-men, I do not approve of the practice followed by many of the free-traders, of allowing the ship's company to go ashore for three or four days together, and giving each a month's pay. Their first act is, to repair in a body to the punch-house; the crimps are on the alert for them, they supply them with every indulgence they can demand, as far as their means will go. A band of music is furnished, and a parade through the streets with flags flying finishes the day. The next day is employed in visits on board the several ships that keep up this practice, and the evening is appropriated to the grog bottle, and the company of those females which abound in the punch-houses. A ship-master (a friend of mine) went into one of these resorts, one evening, in search of his carpenter, who had been absent two days. He found him, but such a scene as he witnessed, could not be described here; nor could he have believed it, had he not had ocular demonstration. Were the returns of the general hospital to be looked over, they would shew the number of seamen admitted free, from these receptacles, as if they were entitled to it by belonging to any ship, and alas, were the same returns consulted, how few would be found to have been sent out cured.

I understand that Bombay is very different, and I would quote Demerara, where a seaman is not allowed to be on shore without written leave from the master, and after a certain hour is taken up and pays a heavy fine before he is released next morning; such I believe to be the present regulations at George Town, Demerara. But in Calcutta they may roam about at all hours, without molestation from the police, unless they commit some offence, (too frequently the case,) and if a shipmaster obtains warrants to have his men taken up, these and the constables' fees soon consume a month's pay. Hence they prefer shipping another crew, and risking the deficiency at least, when the ship is ready for sea, in preference to looking after them.

The seamen newly shipped, it may easily be supposed are not in a very fit state to go to their duty for the first two or three days, and in many instances from the dissolute life which they lead while on shore, they are seized with dysentery, and seldom recover from it, or are useless all the rest of the voyage, even where there is a medical attendant.

But to proceed with their conduct as a body of men forming ships companies: and first I shall instance the ship, Captain Cook, of London, in September, 1834. This ship was bound to China with a general cargo from Calcutta, and proceeding down the river, having shipped a sufficient number of seamen to make up the number required, for a vessel of about 400 tons; the height of the freshes was at that date, and the ship had one of the best master pilots on board, as to his local knowledge of the river, and nautical experience. In one of the

reaches between Calcutta, and Mayapore, he was obliged to let go a second anchor, to save the ship; when he ordered it to be hove up again, the seamen told him he might heave it up himself, in language which need not be repeated, insisting, that there was no occasion for letting it go. The pilot, who had frequently seen such conduct exhibited by *British seamen*, knew the only alternative left him, was passive silence, but with the first officer's assistance, they were at length persuaded on to heave the anchor up, and the ship was taken down to a safe anchoring reach, after being nearly on-shore, and receiving considerable damage about the hauseholes. In consequence of this, the ship was detained nearly three weeks in the river, a new crew (Lascars) was shipped, and she got away, but was too late to reach the Chinese sea with the favourable monsoon. I am not aware what the consequences have been, but the owners of the *Captain Cook* will be able to say what they were. When the crew of this vessel, that caused all this detention, (and ultimate loss I doubt not,) were taken before the sitting magistrate, they could give no particular reason for their conduct, and were sentenced to thirty days' hard labour in jail, but they were not ordered, as they should have been, to find a ship, and leave the colony, under a penalty.

The next case is that of the ship the *Lord of the Isles*, of Newcastle: she was bound to Liverpool about the same time, and had got as far down the Hooghly as Saugor roads, when the crew refused to proceed any further, because the ship began to make a little water, and they insisted on her being taken back to Calcutta. In proceeding down the river, the vessel may have strained a little about the bows, from breaking her shear, or bringing up, but she made no water, till she got in the sea-way at Saugor roads, and then by the master's report, only from four to six inches in four hours. Persuasion had no effect here, and in taking the ship back she was lost off Mud point. The immediate cause of her loss, I can only state from report; but the primary cause evidently lay with the seamen, and those only who had been shipped at Calcutta. The loss of this ship was so sudden, that when she took the ground and swung broadside to the tide, she rolled over so far as to carry away the fore and mizen-masts; the main yard-arm took the ground at the same time, and by the mainmast standing fast, the crew, with the exception of one, were saved in the pinnace, which lay on the booms bottom up. When the ship tumbled over, the boat became upright, and was taken hold of by the cook, who happened to be in the long boat at the time, feeding the stock. They had not left the ship many minutes when the mainmast gave way, and the ship rolled over, it being a spring flood tide, only a part of the keel was visible next day, the last that was seen of her; the pilot of the vessel was tried at Bankshall, but no blame could be attached to him, and the seamen were never called in question for their conduct.

Another case of Calcutta, is that of the ship *Stirling*, of London, in the same year. This ship entered eight or nine seamen to make up her crew, and when proceeding down the river, seven of these refused to heave the anchor up. After the ship was got under way with the *Batta Lascars*, the master called them aft, to ask them the reason, of their conduct. The only fault they had to find, was, they did not get two pounds of sugar each per week. When they shipped, they were

promised one pound of sugar every two weeks, with tea in proportion, but there was no specific agreement even for that quantity. The master had no alternative, but to anchor at Kedgerree, (the vessel being below Diamond harbour when this occurred,) the men were put in irons to prevent them from taking the ship's boats, as they had threatened, and they were kept in irons till a crew (Lascars) was sent down from Calcutta. This detained the ship nine days: the consequence, of course, is best known to the owners.

I could go on stating cases like these, out of all number, but I shall only note two more which occurred at Mauritius. When the ship *Lomach* was at Port Louis, in Dec., 1834, six or seven of the crew refused their duty, on no reasonable grounds, and demanded their discharge. They sued the master in the Vice Admiralty Court for their wages, and a decision was given against them, by which they forfeited all. In consequence of this, the master had to pay £86 sterling for defending himself, and he also had paid in a case exactly similar, about twelve months before, at Sydney, (N.S.W.) the sum of £78 9s. sterling, for self defence. It is a well known fact that a sailor has nothing wherewith to pay, and the unfortunate ship must pay all. Why such an abuse should exist, I leave to those who have it in their power, to correct it. The second case was that of the brig *Alice*, of Liverpool. When this vessel was on her passage out to Mauritius, (I cannot recollect exactly the time or place, but it was somewhere near the Cape,) the greater part of the crew mutinied, not by taking charge of the vessel from the master, but by refusing all duty, and insisting on their usual quantity of provisions. Thus they left the master, mate, carpenter, cook, and steward, and one or two boys to take the vessel to her port of destination. This was effected, the vessel was boarded by a pilot, and anchored. Next morning when the warps came off, the seamen of their own accord assisted in heaving the anchor up, and warping the vessel into her moorings.

When the master went to the authorities to get some kind of redress, as he thought, and having stated the whole of the circumstances, as they had taken place, he was told, very gravely, that nothing could be done with the men as he had allowed them to return to their duty after anchoring, and he was advised to discharge them, and get another crew, in which he was assisted; the master of this vessel was a very young man, consequently submitted to the advice of the authorities, and his consignees; the latter of course advised him, knowing that the vessel would have all the expenses of the court to pay. Whether it may be true or not, I do believe, and I find most of my profession agreeing with me, that seamen are much degenerated, and more difficult to manage than formerly. Give them the best of every thing, and that in profusion, there are generally some discontented individuals that you are either obliged to punish, when you can do it with impunity, or get rid of at the first port where that is allowed.

Notwithstanding all that has been done for seamen by the late provisions of parliament, still enough has not been done to enable the master to act safely. There is not a word said about provisions,—as to quantity or quality. I have always found the best provisions the cheapest; and I have heard of more quarrels on this score than any other. Why should not seamen be awarded rations in merchant-ships

as well as in the royal navy and transport service, and the provisions subject to survey previous to the ship leaving England on any foreign voyage? I am no advocate for keeping seamen on allowance, but I have always made it a point, on any complaints being made about beef or pork, to have it weighed out at the rate of one and a half pounds per day for each man and boy; and even with this quantity some crews are not content, while others have not been able to use it. If a limit were laid down by act of parliament, the master in all cases of a difference about provision, would have a certain rule to be guided by, without being obliged to listen to what the seamen will say is their right. I had occasion lately to weigh out provisions for seamen in a vessel under my command, having troops on board. The latter had half a pound of meat daily, and all their other provisions were weighed to them. The seamen had one pound and a quarter of meat, and none of the other provisions were weighed. With all this they were not content, and insisted that two pounds were merchantmen's allowance. I then threatened to put them on transport's allowance, at the same time stating what that was. This had the desired effect. I had always given out a pound and a half of meat; this is the only exception to the practice, and was adopted from necessity, as I found that above two pounds per day had been used by the seamen before we began to weigh it out. I by no means wish it to be believed that all seamen are alike; on the contrary, I find the majority of them inclined to good regulation, but among fourteen to thirty and upwards, the chances are, that a few badly-inclined subjects will be found amongst them, who contaminate the others, if they are so inclined. Many persons profess to be the sailors' friend, and one, in the pages of the *Nautical*, Mr. Ernest, has visited a free-trader's forecastle on her arrival from a long voyage. Let him visit, under the same circumstances, the seamen's accommodations in one of each of the different classes of vessels which trade from London to all the Americas, Africa, and east of the Cape; he will soon perceive the difference in favour of the latter.

I readily admit that with all the care we can bestow on our provisions, they do assume a different appearance at the end of a twelve-month's voyage, to that which they had when shipped. But this we have no further control over, than being certain they are put up in proper packages; and much depends on this, where a ship has to pass through a variety of climates, and to remain long within the tropics. "Mr. Ernest," and the "Sailor's Friend," in particular, will most likely charge me with prejudice; and writing under irritated feelings, (I cannot write when in irritation,) my common practice has been to make notes as soon as possible after receiving the information, or witnessing what I have stated, taking care, at the same time, to trust to none but the most unquestionable authorities, and take due time to put them together in the best shape I am capable of when at sea, when unfortunately we have too much time at our disposal, particularly on long passages. The greater part of the foregoing I had drawn out two years ago, with the intention of publishing it, but some of the most glaring abuses I had stated were enquired into previous to my arrival home, and corrected, as far as could be done, at the time; in consequence of which, I laid them aside. It was chiefly from seeing

the spirited letters of a master of "A British Merchant Ship," and "Lieut. Staysail's" remarks, that induced me to state the facts already noted, which, it will be borne in mind, are confined to the foreign trade within the tropics and east of the cape.

Since going eastward, I have seen a great many foreign seamen, both at Calcutta and Mauritius, and my conclusions have been, that they certainly must have a much better code of marine laws than we have. On inquiring at the police-offices, (the first office all ships report at at both places, and lodge a list of the crew,) the magistrates have told me that not more than once or twice in twelve months, have they had foreign sailors brought before them; and with regard to British seamen, on the contrary, that not a day passed in either of those places, when the magistrates were sitting, that there was not some case or cases brought before them of seamen, either refusing duty, insolence to their officers, or offences committed on shore, particularly in the shipping season at Mauritius, and at least eight months out of twelve at Calcutta.

A considerable quantity of tonnage, belonging to England, has of late years been employed in the country trade, as that has been better than coming home at the low rate of freight, such as in 1834. Nearly all that tonnage was manned by Lascars, so long as it was employed in the trade. Every ship-master that I have questioned on the subject, (and they are not a few,) agree in stating that they prefer Lascars to their original ship's companies. But this would not have been the case, had there been such *laws in force* in Calcutta as would have compelled the men to remain by their respective ships, and at the same time compelled the masters to receive them on board. Such laws, indeed, now lie on the magistrates' desks a dead letter.

A LONDON TRADER.

[Having considered the state of the British seaman at Calcutta, let us now see what is said of him at Quebec, by Capt. E. Smith, R.N., from personal observation.]

During the shipping season in the North American sea-ports, the scenes of riot, drunkenness, and confusion exhibited, baffle all description. The labourers employed among the shipping and timber-rafts lodge in the lowest description of liquor-shops, where a most pernicious kind of spirits are sold at a cheap rate. It is to places of this description that British seamen are encouraged to resort, immediately they arrive from sea, with the additional prospect of their obtaining a large advance of wages on board of other ships in want of crews. This practice is too successfully followed by the keepers of these liquor-shops to induce seamen to desert from their ships.

This class of persons (the crimps) are directly interested in the decoying seamen from their ships, and readily assist them to find out some cause for being dissatisfied with their commanders or officers. Having supplied them with liquor, when once reason is destroyed by a constant succession of drunkenness, the most violent opposition is set up by them to every piece of duty required in the ship, the greatest confusion prevails, and assisted by labourers and others, the crews not only desert their ships, but carry with them their chest, bags, and

bedding, in open violation of all engagements which they may have entered into for a voyage.

The commanders are thus put to serious inconvenience, and are obliged to pay an extravagant price for labourers to take in cargo, every species of imposition being resorted to by these persons, knowing as they do that ships are dependent on them for the necessary labour to get the cargo in and stowed. In many cases it is next to impossible to meet the unreasonable demands of these labourers, while much time is lost in loading, the captains and officers having little or no control over their men. During the last spring-season at Quebec, such was the disorderly conduct of the seamen who had deserted their ships, that not less than thirteen flags were flying at one time on Cape Diamond, displayed by them in open defiance to their respective commanders and officers.

But the British seaman at Quebec wants not the assistance of crimps or labourers to make him discontented. On the slightest pretence he refuses to do his duty, and combines with his messmates to leave the ship. They all go on shore, and apply to a petty class lawyer, with whose assistance they make out a case of being ill-treated and half-starved, to which the whole of them are ready to swear, although there is not one word of truth in the matter. Of this the lawyers to whom they apply are fully aware: but what is that to them? all they care for is their costs, and on this plea they apply for payment of the seamen's wages. The captain, left with all the inconvenience of being without a crew, and busily engaged in preparing his ship for sea, (for this is the period these steps are taken,) when he has not time to resist, is obliged to submit and pay the demands.

From such conduct on the part of British seamen, it is almost impossible to get the ships properly prepared for sea, and such is the situation of almost every captain at Quebec; for even labourers, to stow the cargo, cannot at all times be depended on. Thus not only are serious hinderances produced to ships, but too frequently commanders are compelled to proceed to sea with a short complement of men, giving, at the same time, extravagant wages to those they have, a month of which must be paid to each man in advance, for the purpose of releasing him and his clothes out of the possession of the crimps. The mode of life which they have led while on shore, renders them totally unfit for duty when embarked, and when the ship is under way, they are frequently stowed away in a state of insensibility on wet logs of timber in the fore part of the ship, leaving her to be navigated by the master, mate, and a few lads. Should a gale spring up before they recover their senses, the ship may be lost for the want of proper assistance, and there is too much reason to believe that many losses have occurred to vessels coming down the river and gulf of St. Lawrence attributable to these causes.

In the event of any difference arising between a commander and his crew, two or three respectable residents or merchants should be appointed to act as marine commissioners for the adjustment of such differences, without partiality. In most cases, when seamen get dissatisfied with their ships, there is too much reason to fear that dissatisfaction arises from their own conduct, when a little extra duty is required from them from absolute necessity, not that it is intended to infer that seamen are al-

ways without a just cause of complaint. Therefore, this mode of proceeding would be the most equitable for both parties.

As it is of great importance that cargoes should be properly stowed, for the safety of ships, as also the lives of the crew, inspectors should be appointed at each of the leading ports, by whom all stowers should be licensed, and the labourers employed by him should be subject to such regulations as may be deemed necessary. For all neglect or carelessness in the performance of their duty, they should be subject to fine or dismissal. A stated price for the load of timber, standard hundred of deals, or a *mille* of staves, &c., should be fixed. Stowers should make a daily report of the progress of loading to the inspector. Stated hours of loading should be specified, and if required, longer notice should be given that an extra gang may be sent off to relieve those employed through the day. The stowers should render the commander and officers every assistance, not only in getting the cargo on board and stowing it, but also in preparing the ship for sea; and on no account should leave the ship until the boats are stowed, and every thing secured on the deck: in the execution of this duty it may be necessary to proceed a distance of twenty miles down the river. Stowers, who by their orderly and good conduct are entitled to it, should, at the end of each season, be rewarded in some way by the inspector with a medal. Such regulations, properly established would remedy much of the existing difficulties in getting ships properly stowed and equipped for sea.

Provision should in all cases be of a good and wholesome quality, and sufficient quantity, and the commissioners should be certified of this, and that they are stowed in a secure place below the deck as also a proper proportion of water secured in the same way, and not left to the arbitrary caprice of an individual. For this purpose the master should produce a certificate signed by the mates, carpenter, and two seamen, to be presented at the custom-house at the time of clearing, and no ship, under any pretence, should be allowed to clear without such certificate.

The part of the ship appointed for the seamen to lodge in, should in no case be lumbered up with logs of timber, which is too frequently the case; neither should seamen be compelled to proceed in ships not considered sea-worthy, although they have shipped in a British port to perform the whole voyage, not knowing at the time the ship was defective. In such cases the commissioners should award their wages up to the period of leaving their ship.

THE SURF AT NICE.

THERE is a singularity attached to the waters of the bay of Nice, which very much engaged my attention whilst sojourning at that place: it is, that the surf upon the beach always becomes higher after rains than at any other time.

The subject, generally, is an intricate one, and appears not to have been fully investigated by any philosopher. The commonly received opinion that high wind is the cause, as a single action, is not always supported by facts; that it is often one of the causes there can be no

doubt, because the effect is apparent on many occasions; but undoubtedly there are agents, of which hitherto we have had no conception, that operate in producing the commotion when the air is calm.

Some interesting observations on surfs are given in Marsden's Sumatra; and as his remarks are valuable, not only from the well-known high talents of the writer, but from the subject having been little considered, his work deserves attention. He says, "That the surfs are not, like common waves, the immediate effect of the wind, is evident from this, that the highest and most violent often happen when there is least wind, and *vice versâ*. And sometimes the surfs will continue with an equal degree of violence during a variety of weather."

It seems highly probable that those heavy ground swells which roll in upon some coasts, and are called "rollers,"* may, as supposed, be attributable to a succession of heavy gales far distant, with this addition, that these high winds blow in accordance with the course followed by the tidal wave.

The impression of an undulatory motion received by the waters of the ocean, like the transmission of sound on the vibratory air, must be extremely rapid, although not in such a degree as the latter, but with sufficient velocity to admit the impression to pass over a vast extent of surface in a comparatively short space of time.

Mr. Marsden, however, objects to the opinion that the surfs are the effect of gales at sea causing a violent agitation throughout a considerable tract of the ocean, which at last, meeting with resistance from the land, occasions the water to swell and break upon the shore. He says that there seems no regular correspondence between their magnitudes, and the apparent agitation of the water without them; and that gales, except at particular seasons, are not frequent in the Indian seas, whilst the surfs are almost continual at Sumatra. He attributes the surf there, partly to the effect produced by the constancy of the perennial winds, which prevail at a distance from the shore. "The incessant and powerful swell, rolling in from an ocean, open even to

* [In p. 101 of our volume for 1835, we quoted Mr. Webster's theory to account for this interesting phenomenon, and the close observing mind of that gentleman, as well as his experience, adds much weight to the extremely simple explanation which he gives of it. It is known at Ascension and St. Helena to occur at particular seasons of the year, when the great force of the trade-wind has subsided, and generally in calm weather. If we consider then that the waters over which the trades have prevailed, have been continually hurried forward on their course, (which is usually the case, as the current is known to vary from ten to twenty miles per day,) and compelled to form the gulf-stream, and return whence they came by a circuitous northern route, to preserve the level which nature assigns;—when the cause of their doing so is removed, this effect will cease, and a different one will ensue. The trade-wind subsides, and a succession of calm weather takes place. The waters, thus relieved from the powerful action of the wind, are left at an unnatural level on the western shores of the Atlantic, and the waves, following the nearest course to those parts from whence they came, (for why should they go north,) roll back with irresistible force, but with a smooth unruffled surface; and thus, by nature's own laws, are reinstated in their own domain, from whence they were pressed away by the continual action of the wind. The seasons return again, the trade-wind acquires its usual strength but to lose it again, and again the rollers come. A ship out of sight of land knows nothing of this (to her) silent action of nature, but at the islands it is well known, and the rollers, as they are called, have prevented all communication with them for many days together.—Ed. N.M.]

the pole, seems an agent adequate to the prodigious effects produced on the coast, whilst its very size contributes to its being overlooked." But there is an objection which he states, and endeavours to explain away. The trade-winds are remarkably steady and uniform, and the swell generated by them is the same, whilst the surfs are much the reverse, seldom preserving for two days the same degree of violence; often mountains high in the morning, and nearly subsided at night.

To meet this, he suggests the following :—The tropical region being exposed to the immediate influence of the two great luminaries, the water, from their direct impulse, is liable to more violent agitation than nearer the poles, where their power is felt only by indirect communication. The equatorial parts of the earth performing their diurnal revolution with greater velocity than the rest, a larger circle being described in the same time, the waters thereabout, from the stronger centrifugal force, may be supposed more buoyant; to feel less restraint from the sluggish principle of matter; to have less gravity; and therefore more obedient to external impulses of every kind, whether from the winds or any other cause.

Whatever may be the estimation in which these remarks of Mr. Marsden are held, they cannot apply to the surf at Nice. Indeed, as heavy surfs are not every where to be found within the tropics, a great deal may depend on local circumstances, which have not been at all considered, although no doubt some general law governs the whole.

On the 27th of August, at Nice, after a few hours' rain, the torrents became flooded, and discharged their waters into the bay; bearing with them a great quantity of small wood, reeds, and cones of the pine, of which every succeeding billow bore a portion to the shore, and afforded employment and profit to the poor inhabitants of the place. Hundreds of men, women, and children, were busy in gathering them for fuel. The scene was as animating as it was, to us, singular; and so eager were some of these poor creatures to reap a plentiful harvest of this scarce article, that, in defiance of wet and of danger, many plunged into the surf, and grasping an arm full, returned to the shore with their prize, amidst the foaming of the billows; placing it in heaps, they again and again returned with renewed spirit, until their desire was satisfied, or their strength failed them.

It was pleasing to observe the honesty which the individuals composing this motley group observed towards each other. Although any one of them might have pilfered from the piles of another, as they lay unprotected, yet not a stick was touched—all was harmony and good will, each adventurer congratulating the other on the success of the day.

The scene which followed after the subsiding of the waters, was as calm and peaceful as that which preceded it had been noisy and boisterous; the matrons, with their little flocks seated around them in groups upon the beach, were employed, during the fervour of the day, in drying the store which the bountiful waves had bestowed upon them.

From the foregoing circumstance, it appeared that the rain had been much heavier on the mountains than at the sea-shore, as we there experienced only moderate showers for two or three hours. The

weather was calm, and there did not appear to be an accumulation of water in the bay ; we were therefore greatly surprised to see the surf rise and beat with such violence upon the beach. During three or four days of August, we experienced wet weather, and invariably the surf immediately after became extremely heavy. The winds, which had been moderate from the S. and S.W., were certainly in a direction to press the water into the bay, had they been powerful enough ; the contrary, however, was the case, and the water was smooth and unruffled until the rains fell.

During calms and light airs, the surf, although inconsiderable, increases as the sun acquires height, and subsides as that height decreases. On such occasions there is little or no surge in the early part of the morning, but about 8 A.M. it commences, and continues until after sun-set, when it is scarcely heard ; but the water of the bay has been smooth, and with no other motion than such as is general upon every coast—a very slight, fluent, and reflux action.

On the 23d of September the clouds were dense and low, forming a canopy over the mountains ; but, contrary to expectation, no rain or increase of wind was experienced. The wind was gentle ; the surf, however, rose, and became very high upon the beach. The day before, heavy clouds were seen in the western quarter ; but if a gale had blown, it must have been remote, as there was no other indication of it at Nice, where the wind had been light.

In October we experienced some rainy weather, at which time the flood of the Paglione torrent came down rapidly, and discoloured the sea, in the line of the course pursued by the turbid stream, for some distance in the offing. As on former occasions, I observed that the surf rose and rolled with great violence upon the beach, although it was, and had been for some time, nearly calm.

On 25th of November the weather was gloomy, and the air damp and cold : there was not a breath of wind, yet, unexpectedly the surf rose, and beat with some violence upon the beach. The day before there was scarcely any motion in the water, but the sky was clear and the weather serene ; yet, strange to say, on the 26th, which was also a beautiful day, calm and clear, the surf was rolling most violently upon the beach. We were much surprised, but we subsequently found, that, although we had experienced no rain at the bay, yet plentiful showers had fallen on the mountains, and the margin of the bay became discoloured by the muddy waters of the torrents which had escaped under the shingle bars at their entrances. At noon the surf began to lessen, and gradually subsided.

On the 30th November, there was a fine top-gallant breeze blowing into the bay, but it did not create much surf : on the 3d of December, however, the weather became cloudy and cold, with slight showers of rain, when the surf beat most violently on the shore, throwing up the shingle into ridges.

During the night of the 8th of December, and morning of the 9th, rain fell plentifully, accompanied with lightning and thunder ; at eight o'clock we went down to the beach, and found the surf higher and more violent than we had seen it on any former occasion ; yet we were assured that it had considerably lessened, and this, upon examination, we found correct, as the waves had left their impress full fifty paces

up the beach! The effect, at the height of the commotion, must have been grand; and although at the time we witnessed it, its turbulent action had considerably lessened, yet it could not be observed without astonishment.

The weather at the time was perfectly calm and clear, and there had been only very light airs before the rains, so that the great height of the swell, and the fury with which it beat in successive surges upon the beach, without any apparent cause, could not fail of inspiring wonder. The repeated coincidence of this action of the water of the bay, with the fall of rain, is very remarkable, and impresses upon the mind the belief, that to some atmospheric changes thereby induced, must be attributed this interesting phenomenon.

At the entrance of the Paglione, where the current of fresh water was most rapid, the surf broke highest. The torrent had come down from the mountains with such impetuosity, that it overflowed its banks, swept away trees, walls, and indeed every thing that impeded its exit, and pursued a free course into the open sea, a very small portion only of the great body of water escaping from it, spreading along the shore.

It is well known that there is universally a constant motion of the waters of the ocean upon the sea-coast, whether sheltered or exposed; but has this motion been increased to a violent degree by the discharge of river or torrent-water? in different parts of the world we have often noticed the streams of rivers fall into the sea, but never with so singular an effect as remarked at Nice; on the contrary, these have flowed, whether smoothly or turbulently, rapidly onward until their turbid waters have been blended with that of the ocean. How far the qualities of any river-water may have an effect on that of the sea, so as to cause a ferment, must be left to others, but the waters which flow from the Alps and the Appennines, down the courses of the Nicean torrents, are strongly impregnated with lime.

On examination, during the period of the last commotion, it was found that the surf was considerably higher on the line of beach of the two torrents, Paglione and Manyong, where the sea had been discoloured by admixture with the turbid waters that had escaped from them, than in the other parts, which were clear. And during a strong gale of wind which blew for several days directly into the bay, the surf it raised was not one-third as violent as after heavy rains.

Mr. Risso, the naturalist, who had often noticed the phenomenon, did not assign any cause for its occurrence.

It appears that the terrace breasting the sea-front of the town, was erected on purpose to afford shelter to it from the surf, which, before this barrier was built, rushed up as high as the chapel, now standing thirty or forty paces within it.

A TOURIST.

[The theory of Mr. Webster appears more likely to account for the surf at Nice, than Mr. Marsden's, if for the trade-wind be substituted any northerly wind, the cessation of which would allow a reflow of the waters. Rollers may not be general within the tropics, because the relative boundaries of tropical seas are not all alike. The Pacific has no confining western shore like the Atlantic, and there the waves and current may flow on west, in obedience to the trade, while those of the Atlantic cannot escape, but return whence they came, either in rollers, when the trade subsides, or the Gulf Stream, while it is blowing. The rollers at Nice are of short duration, corresponding to the extent of the sea from which they flow; but an unequal atmospheric pressure, which would appear to be indicated by the rain, may no doubt contribute to produce them.—Ed. N. M.]

COPY OF THE LOG OF THE EAST INDIA COMPANY'S STEAM-VESSEL
 ATALANTA—*Falmouth to Teneriffe, on her way to India.*

IN two of the former numbers of this volume, we have briefly adverted to the passage of the Hon. East India Company's steam-vessel Atalanta, from Falmouth to Teneriffe; but as this passage, as well as that to the cape, appears to have excited considerable interest, we think it right to publish the following copy of her log:—

HONOURABLE EAST INDIA COMPANY'S STEAM-SHIP ATALANTA, JOHN P. CAMPBELL,
 COMMANDER, ON HER PASSAGE TOWARDS BOMBAY.

Hours.	Course.	Knots per Hour. Fathoms per Hr.		Wind.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS ON THURSDAY, 29TH DEC. 1836.
2				North.					Light wind, and cloudy. At 6 A.M. pilot on board. Commenced unmooring ship. Received 9 parcels and 1 box, mails. Weighed, and proceeded out of harbour. Ship drawing 14 fms. 6 ins. fore, and 15 fms. 6 ins. abaft.
4									
6									
8									
10									
12									
2									
4									
6									
8									
10									
12									
									<i>Remarks on Friday, 30th Dec. 1836.</i>
2	W. S. W.	8	4	N. E.	18	25	27½	1	P. M. steady breeze, and clear.
4		8	4		18	25	27½	1	At 0 h. 30 m. P. M. pilot left the ship.
6		8	4		18	25	27½	1	Secured anchors. At 3 P. M. the Liz-
8		8	4		18	25	27½	1	ard Point bore per compass N. E. b. E.
10		8	4		18	25	27½	1	distance 14 to 16 miles. Set fore-top-
12		8	4	N. E.	18	25	27½	1	sails on the foremast. Steady breezes
2		8	4		18	25	27½	1	and cloudy. At 8 set fore and aft sails.
4		8	4		18	25	27½	1	Midnight, do. weather. At 10 A. M.
6		8	4	E. N. E.	18	25	27½	1	all hands employed crossing topsail-
8		8	4		18	25	27½	1	yard, and setting the sail. Two sail
10		8	4		18	25	27½	1	in sight standing to south.
12		8	4		18	25	27½	1	Sun obscure. Lat. DR. 47° 26' N. Long. in. 8 06 W.
									<i>Remarks on Saturday, 31st Dec. 1836.</i>
2	W. S. W.	8		E. N. E.	18	25	27½	1	Fresh breezes, and cloudy. People
4		8			18	25	27½	1	employed under the boatswain crossed
6		8			18	25	27½	1	topgallant-yard, and set the sail. All
8		8			18	25	27½	1	sail set to the greatest advantage.
10		8			18	25	27½	1	Passed several sail standing to the
12		8		N. E.	18	25	27½	1	S. W. Midnight, do. weather. At 8
2		9			18	25	27½	1	A. M. squally, with showers of hail;
4		9			18	25	27½	1	commenced getting coals out of the
6		9			18	25	27½	1	fore hold. Ends at noon with strong
8		9			18	25	27½	1	squalls and hail.
10		9			18	25	27½	1	Sun obscure.
12		9			18	25	27½	1	Lat. DR. 45° 13' N. Long. in. 10 8 W.

HONOURABLE EAST INDIA COMPANY'S STEAM-SHIP ATALANTA, JOHN P. CAMPBELL,
COMMANDER, ON HER PASSAGE TOWARDS BOMBAY.

Hours.	Course.	Knots per Hour. Fathoms per Hr.	Wind.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS ON SUNDAY, 1ST JAN. 1837.	
2	W. S.W.	8	N.E.	18	25	27½	1	<p>Fresh breezes, and cloudy. People employed breaking out coals in fore hold. At 2 P.M. stowed fore-topsail: a sail in sight, standing to the westward. At 4, took in fore-topsail and square-sail; increasing wind. Patent log hauled in, and found her to have eight miles per hour. Midnight, increasing gale, with heavy sea, washed away both after paddle-box cabins. At 10 A.M. heavy gale, and cloudy; obliged to shift larboard cabhouse; heavy sea, ship straining a good deal; two vessels in sight. Ends at noon with strong gales, and cloudy.</p> <p>The increased consumption of fuel to be attributed to the different quality of the coals, and to a quantity of water continually flowing over the steam-chest from the paddle-boxes.</p>	
4		8		18	25	27½	1		
6		8		18	25	27½	1		
8		8		18	25	27½	1		
10		8		18	25	27½	1		
12		8		18	25	27½	1		
2		8		18	26	27½	1		
4		8		18	26	27½	1		
6		8		18	26	27½	1		
8		8		18½	26	27½	1		
10		8		18½	26	27½	1		
12		8		18½	26	27½	1		
<p>Lat. obs. 42° 47' N. Long. DR. 13 10 W. Barometer, 29.5 ins. Thermometer, 57°.</p>									

Hours.	Course.	Knots per Hour. Fathoms per Hr.	Wind.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS ON MONDAY, 2d JAN. 1837.	
2	S.W.	9	N.E.	19	26	27½	1	<p>These 24 hours begin with heavy gales, and cloudy; heavy sea running; shipped a great quantity of water on deck; obliged to take out the larboard cooking apparatus. At 4 P.M. stove in deck; carpenters employed securing starboard one. At 10 P.M. ditto weather; washed away the after-part of starboard paddle-box, the sea making a complete wash over the deck; knocked out both gangway-posts. Midnight, do. weather. At 8 A.M. do. At 10 A.M. more moderate; set the fore and aft mainsail; a strong cross sea; shipped a great quantity of water on deck. Ends at noon more moderate; all sail set to advantage; a sail in sight. At 10 A.M. commenced burning Welsh coals.</p>	
4		9		19	26	27½	1		
6		9		19	26	27½	1		
8		10		19	26	27½	1		
10		10		19	26	27½	1		
12		10		19	26	27½	1		
2		9		19	26	27½	1		
4		9		19	26	27½	1		
6		9		19	26	27½	1		
8		9		19	26	27½	1		
10		9		19	24	27½	1		
12		9		19	24	27½	1		
<p>Lat. obs. 39° 42' N. Long. in. 16 50 W. Barometer, 30 ins. Thermometer, 57°.</p>									

Hours.	Course.	Knots per Hour. Fathoms per Hr.	Wind.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS ON TUESDAY, 3d JAN. 1837.	
2	S.S.W.½W	8	North	19	24	27½	1	<p>Begins with steady breezes, and clear; people employed variously clearing away the wreck of paddle-boxes; carpenters employed variously. Midnight, do. weather; all sail set to the greatest advantage. At 8 A.M. do. weather; employed getting coals up from fore-hold. Ends at noon with light winds, and cloudy.</p> <p>Lat. obs. 36° 23' N. Long. chr. 17 19 45" W. Barometer, 30 ins. Therm. 58½°.</p>	
4		9		19	24	27½	1		
6		9		19	24	27½	1		
8		9		19	24	27½	1		
10		9		19	24	27½	1		
12		9		19	24	27½	1		
2		8	N.W.	19	24	27½	1		
4		8		19	24	27½	1		
6		8		19	24	27½	1		
8		8		19	24	27½	1		
10		8		19	24	27½	1		
12		8		19	24	27½	1		
<p>Lat. obs. 36° 23' N. Long. chr. 17 19 45" W. Barometer, 30 ins. Therm. 58½°.</p>									

HONOURABLE EAST INDIA COMPANY'S STEAM-SHIP ATALANTA, JOHN P. CAMPBELL,
COMMANDER, ON HER PASSAGE TOWARDS BOMBAY.

Hours.	Course.	Knots per Hour.		Wind.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS ON WEDNESDAY, 4TH JAN. 1837.
		Fathoms per Hr.							
2	S b. W $\frac{1}{2}$ W	8	1	Calm	19	26	27 $\frac{1}{2}$	1	Begins with light winds, inclining to calm; employed getting up coals; several sail in sight. Midnight, a breeze from the S.E. At 4 took in sail; altered course to port one point. At 10 the S.W. point Madeira bore per compass S. by E., distant 30 miles. At 11 A.M. the "Atholl" barque was spoke, bound to Ascension and Cape Good Hope, out eight days from Portsmouth. Ends at noon, strong breezes, and clear. At 2 P.M. commenced burning North-country coals. At 10 A.M. Welsh coals.
4		8	1		19	26	27 $\frac{1}{2}$	1	
6		8	1		19	26	27 $\frac{1}{2}$	1	
8		9			19	26	27 $\frac{1}{2}$	1	
10		9			19	26	27 $\frac{1}{2}$	1	
12		9			19	26	27 $\frac{1}{2}$	1	
2		8			18	26	27 $\frac{1}{2}$	1	
4		8		S.E.	18	26	27 $\frac{1}{2}$	1	
6		8			18	26	27 $\frac{1}{2}$	1	
8		7			18	26	27 $\frac{1}{2}$	1	
10		6			18	25	27 $\frac{1}{2}$	1	
12		6			18	25	27 $\frac{1}{2}$	1	

Lat. obs. 33° 10' N. Barometer, 29.75 ins.
Long. in. 17 30 W. Thermometer, 63°.

Hours.	Course.	Knots per Hour.		Wind.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS ON THURSDAY, 5th Jan. 1837.
		Fathoms per Hr.							
2	S. by W.	6		South	18	25	27 $\frac{1}{2}$	1	Commences with strong gales, and showery weather; employed getting up coals from after-hold. At 4, increasing gale; struck fore-topmast, sent down lower yard. At 7 P.M. heavy sea carried away jib-boom, pitching; employed clearing away the wreck. Midnight, do. weather. At 6 A.M. the same. Passed a French sloop-of-war standing to the S.E. Ends the same. At 8 P.M. burning the ashes with dampers half-closed.
4		6	4		18	25	27 $\frac{1}{2}$	1	
6		6	4		17	25	27 $\frac{1}{2}$	1	
8		6	4		15	15	27 $\frac{1}{2}$	1	
10		6	4		12	15	27 $\frac{1}{2}$	1	
12		6	7		12	15	27 $\frac{1}{2}$	1	
2		6			12	15	27 $\frac{1}{2}$	1	
4		6			12	15	27 $\frac{1}{2}$	1	
6		6			13	15	27 $\frac{1}{2}$	1	
8		5			13	25	27 $\frac{1}{2}$	1	
10		5			14	25	27 $\frac{1}{2}$	1	
12		6			14	25	27 $\frac{1}{2}$	1	

Barometer, 30 ins. Therm. 65°.

Lat. obs. 31° 32' N.
Long. chr. 17 05 30" W.

Hours.	Course.	Knots per Hour.		Wind.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS ON FRIDAY, 6th Jan. 1837.
		Fathoms per Hr.							
2	S. by W.	7		South	15	25	27 $\frac{1}{2}$	1	Begins with strong gales, with rain at intervals; employed all hands in getting out coals from the fore and after hold. At 8 P.M. do. weather. Midnight, dark, cloudy do. A strong head-sea, and ship pitching a good deal, and shipping a great quantity of water on deck. At 4 A.M. more moderate; shift of wind to westward. At 6 A.M. made the Island of Tenerife, the peak bearing S. by E., distant forty miles—set fore and aft sails. At 1 P.M. brought up in
4		7			15	25	27 $\frac{1}{2}$	1	
6		7			16	25	27 $\frac{1}{2}$	1	
8		7			17	25	27 $\frac{1}{2}$	1	
10		7			17	25	27 $\frac{1}{2}$	1	
12		8			18	25	27 $\frac{1}{2}$	1	
2		8			19	26	27 $\frac{1}{2}$	1	
4		8	4		19	26	27 $\frac{1}{2}$	1	
6		8	4		19	26	27 $\frac{1}{2}$	1	
8		9			19	26	27 $\frac{1}{2}$	1	
10		9			20	26	27 $\frac{1}{2}$	1	
12		9			20	26	27 $\frac{1}{2}$	1	

Barometer, 30.5 ins.
Thermometer, 66°.

twenty fathoms; veered away sixty fathoms chain; Port d'Anaga bearing ———, dist. eight or nine miles: the town a quarter of a mile. The rest of the day employed washing the ship. At 8 set the watch. This ends at midnight, containing 36 hours to commence harbour log.

Total coal consumed, 117 tons; average per hour, 12.2 cwt.; per hour per horse-power, 6 $\frac{1}{2}$ lbs. Distance run, 1,487 miles; time employed, 8 days 1 hour, or 193 hours; average rate, 7.7 miles per hour.

ON THE PROTECTION OF SHIPS FROM LIGHTNING. *By William Snow Harris, F.R.S., &c. &c.*

No. II.

Probable Nature of Electrical Action, and the Principles on which Ships may be secured against Damage from Atmospheric Electricity.

8. ALTHOUGH the meteorological explosions occasioning damage to ships, are in some instances of an anomalous character, and have been usually distinguished by the general term fire-balls, yet such damage is for the most part observed to happen during that state of the atmosphere termed a thunder-storm, the connection of which with ordinary electrical phenomena, will be an immediate subject of our present consideration.

9. The existence of an invisible and extremely subtle principle in the material world, termed electricity, may be inferred from the tendency of bodies toward each other, when subjected to a peculiar kind of excitation, by means of various mechanical, chemical, and other operations, viz. by friction, changes in the temperature and constitution of bodies, mechanical contact, and the like. Many striking facts seem to warrant the conclusion, that this agency consists of an exquisitely subtle form of matter, every where present, and operating between bodies according to certain laws.

10. Different views, however, have been taken of the action of this wonderful agency. Some philosophers have imagined it to consist in a sort of temporary separation of the electric matter into two distinct elements, which having a powerful attraction for each other, constantly tend to recombine and resume their previous state of neutrality. Others, again, consider it as the result of a tendency in the electric principle itself to a given state of distribution, so that when caused to assume any other state of distribution, an attractive force ensues between the bodies whose electrical condition is thus changed, producing what is termed an electrical discharge. There are others, on the contrary, who have supposed electrical action to be merely a species of vibration in bodies, or to consist of impulses propagated through a universally present medium, and which medium they suppose to pervade all space.

11. But it is not necessary to our present purpose, to discuss the merits of these different views, since every theory may be considered as an artificial creation of the mind, for the purpose of classifying and connecting observed phenomena, so as to eventually arrive at more definite ideas of physical causes; the province of human knowledge, (as is justly observed by a most accomplished writer,) being really "to observe facts, and trace what their relations are."*

We may venture, on this ground of theoretical speculation in science, to resort to the following explanation of the phenomena of atmospheric electricity, which seems, upon the whole, to accord with the facts observed in the numerous instances, in which ships have been damaged by lightning.

12. The active principle of a thunder-storm may be considered as an extremely subtle species of matter pervading all nature, being dis-

* Abercrombie on the Intellectual Powers.

tributed in bodies in quantities proportionate to their several capacities for it, thereby producing a sort of equilibrium of force in every direction: but inasmuch as it may become disproportionately distributed, by certain natural processes, so, whenever such new distribution arises, then this subtle principle seems to exert a self-adjusting tendency, by which it endeavours to equalize itself by diffusion, either into the general mass of recipient bodies, or into any particular part of the earth's surface, or atmosphere, which may at the time be deficient of its own equivalent quantity. This act of diffusion is frequently marked by a certain train of phenomena, e. g. a reciprocal action takes place between the overcharged and the undercharged bodies, involving all the consequences of a violent expansive force, the effect of which is so rapid and irresistible, that the most compact bodies, if opposing any considerable impediment to the action of equalization, are immediately shattered by it; at the same time, so great an evolution of heat occurs in the course of this discharge, that other substances became ignited, or fused.

The real nature of this wonderful agent is as yet unknown. It has, however, been occasionally termed the matter of lightning, or more commonly, electricity, or the electric fluid, in consequence of its identity with the cause of the phenomena observed on exposing vitreous and resinous bodies to a peculiar kind of excitation by friction.

13. The conditions incidental to the operation of this all-powerful agency, on which thunder-storms have been found to depend, become, in relation to our present subject, important points of consideration. To trace the laws which regulate electrical actions, has been the endeavour of many profound and enlightened inquirers, for more than half a century. Nor have their efforts been without success; for a copious induction of facts has led to so much valuable knowledge of these laws, that we may consider the approximations to the truth, in this department of science, sufficiently near for any practical purpose.

14. Some substances oppose but comparatively little resistance to the passage of the electric fluid, whilst, on the contrary, others seem to greatly impede its course. Thus the various bodies in nature have been by electricians considered in relation to their transmitting or resisting properties; and, consequently, substances which oppose but comparatively little resistance to the progress of electrical diffusion, (12,) have been termed *conductors*; whilst, on the contrary, those which obstruct it have been termed *non-conductors*, or *insulators*.

15. The conducting class comprises *all the metals*; more especially concentrated acids, well-burnt charcoal, *wood* in its ordinary state, saline fluids, *hemp*, stones, smoke, steam, and highly rarified air. If any of these substances, whilst touching the ground, be connected with the conductor of an electrical machine during the time at which a current of sparks is passing from it, then the sparks will immediately cease, the electricity being transmitted by them to the earth; an easy and striking experiment.

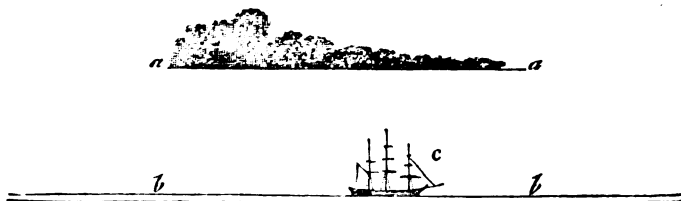
16. In the non-conducting or insulating class, we find all *vitreous* and *resinous* bodies more especially, as also *silk*; dry permanently elastic fluids, such as *air*, baked wood, feathers, paper, oils, wool, hair, and most dry vegetable substances. If, whilst a current of electrical sparks is passing, any of these bodies be connected with the con-

ductor of the machine, as in the former instance, (15,) little or no difference will be perceived: the sparks will continue.

17. Although for general purposes the various bodies in nature may be considered as belonging to one or the other of these classes, yet such a gradation of effect is observable in them, that the *conducting* or *insulating* power of some substances, when compared with that of others, may be considered imperfect: hence arises a sort of neutral class, which may be occasionally referred to either of the former. Thus the conducting powers of wood, hemp, stones, and the like, may be considerable in cases of ordinary electrical accumulation, but of no great consequence to a more powerful one.

18. When accumulations of electricity prevail in the atmosphere, their mode of operation, in producing discharges of lightning, may probably be referred to the following principle: if two substances of the conducting class are directly opposed to each other, and are separated by a substance of the non-conducting or insulating class, one of the opposed bodies being insulated, and the other having an indefinite capacity for electricity, that is to say, being connected with the mass of the earth; then the proportionate state of distribution in the insulated body (12) may become deranged in the greatest possible degree, causing at length an intense electrical force (12).

19. The above conditions (18) are found in nature, in the relative position of the sea and clouds, and intervening air; so that when, from any cause, an accumulation of natural electricity takes place in the atmosphere, or the contrary, and heavy masses of vapour become evolved, we have immediately an insulated conductor, a cloud, as *a a*, opposed to a conductor of indefinite capacity, as *b b*, the surface of the earth, the



air from *a* to *b* being an intervening insulated medium; hence results a charged battery of enormous force, and the attractive tendency of the oppositely charged surfaces becomes at last so irresistible (12) that the accumulated electricity, in endeavouring to regain a state of proportionate distribution, breaks down the intervening air, *a b*, in its weakest point, with a terrific and heavy explosion, falling directly either upon the surface of the sea or land; or otherwise through any elevated body, *c*, which may happen to be immediately within the sphere of action.*

* When masses of vapour are *not present* so as to form an insulated conductor, the conditions may then be considered to be merely those of a conductor of indefinite capacity in contact with an insulating charged medium, the air; which may be exemplified artificially, by employing a square of glass, previously electrified, to represent the atmosphere, and placing it on an extended surface of tinfoil. If, under these circumstances, certain natural changes occur in the electrical conditions of the respec-

20. The year 1752 constitutes an important era in the science of electricity; from the celebrated discovery of the principle above-mentioned, (19,) under the form of the Leyden Jar. The natural philosopher was from this time furnished with a ready means of concentrating a large quantity of electricity, produced by artificial methods, so as to discharge it upon, or through bodies, with an instantaneous and violent explosion. When, therefore, the cause of lightning became identified with that of ordinary electricity, and the gigantic attempt of Franklin and others, of actually drawing down from the clouds the matter of lightning, had fully succeeded; the effects produced on bodies by these minor electrical discharges, together with the laws of their action, acquired a new interest. Thus most important inquiries into the laws and operation of natural electricity were successfully carried on by artificial means.

21. In the course of these researches it was found:—

First, That in every case of electrical discharge, there are invariably two opposite points of action, *one from which* the electric matter may be considered to proceed, and *another toward which* it may be supposed to tend.

Secondly, At the instant before which the discharge takes place, the stream of electricity, in the act of moving to restore the equilibrium of distribution, seems, by a wonderful influence, to *feel its way, and mark out, as it were, in advance,* the course it is about to follow; which course is *invariably through the line or lines of least resistance, between the points of action.*

22. Some further evidence from experience, of damage by lightning, may serve to render these facts evident:—

(p) The Brig Belleisle, of Liverpool, in November, 1811, was lying afloat, abreast of Mr. Evan's yard, at Bideford, in Devonshire, when a vivid flash of lightning shivered her fore-topmast and foremast, tore up the fore-castle deck, and struck a hole through her starboard side, starting several butts in the bends, and *from whence it passed into the sea.*¹⁶

(q) The United States ship Amphion, Blone, master of, and thirteen days from New York, bound to Rio, was struck by lightning on the 21st of September, 1822; the lightning descended the mizenmast, destroyed the compasses, splintered and tore in pieces the ceilings, bulk heads, and rudder trunk, as well as most of the cabin furniture, it shivered two of the hold beams, and passed out *through the quarter into the sea.*¹⁷

five bodies, (the earth and air,) a quantity of electricity may be caused to pass rapidly upon some given point of the earth's surface, or reciprocally; thereby producing that peculiar form of meteor, termed more particularly a fire-ball, and which has been observed to occur, although rarely, even in serene weather. In a similar way, the luminous appearances frequently observed on the pointed extremities of a ship's masts and yards, are referable to the gradual process of electrical equalization, and which may sometimes occur, even without the presence of clouds: whatever form, however, these phenomena assume, they may be all considered as originating in the same source, the tendency of the electric agency to a state of proportionate distribution, until an equilibrium of force in every direction is attained.

16. From the late Mr. Pyke, of Bideford.

17. Extracted from the log of the brig Mirabiles, and given to W. Lockery, Esq., comptroller of the customs at Plymouth.

(r) His Majesty's frigate *Palma*, commanded by Captain Worth, was struck by lightning in 1814, in the harbour of Carthagena, Spanish America; the fore-topmast was knocked over the side; the lightning descended beneath the hoops of the mast without hurting them, as far as the main deck; here it fell upon the wet cable, which had been just shortened in, and which was lying against the after beam; in doing this, it knocked out a piece of the beam, and *finally passed by the wet cable out of the hawse-hole into the sea*. It was perfectly calm at the time; and the lightning, besides striking the ship, was also observed to *strike down upon the sea*, directly, several times, at a distance from the ship.¹⁸

(s) In January, 1830, H. M. ship *Etna* was struck by lightning, in the Corfu channel, in the Adriatic; in this instance, three terrific explosions fell upon a metallic chain attached to the mainmast, and *passed into the sea*, without damage to the vessel.¹⁹

(t) The packet ship *New York*, in her passage from New York to Liverpool, was struck by lightning twice in the same day, April 19, 1827.

The first explosion shattered the main-royal-mast, and mast-head, penetrated the deck, demolished the bulk-head and fittings below, then dividing, one part fell on a lead pipe, which it traversed as far as the side of the ship, and from there *passed out into the sea*, after starting the ends of three four-inch planks.

The other portion entered one of the after-cabins, where it shivered in pieces the plate of a large mirror, without damage to the frame; it fell upon a piano-forte, which it touched with no very delicate hand, leaving it dismounted and out of tune; thence it passed through the whole length of the cabin floor, which was at the time wet with water, and out of the *stern windows into the sea*.²⁰

(u) The second explosion fell upon a spike and chain, subsequently attached to the mast, and, after partly fusing, and disjuncting the chain, *passed into the sea*, without further damage to the vessel.²¹

To the foregoing may be added another remarkable instance of damage occasioned by lightning to H.M.S. *Phæton*, Captain Sturt, while lying in Gibraltar Bay, in 1824. The following is an extract from the log of that vessel:—

“Tuesday, 14th Sept., P.M. eight.—Fresh breezes and cloudy, with lightning and thunder. At eight to ten, the ship was struck with lightning, which rent the foremast, fore-topmast, top-gallant, and royal masts considerably; set fire to the fore-topmast-head, and fore-topgallant and lower studding sails. Beat to quarters, and extinguished the fire.

“Wednesday, 15th Sept., A.M. four.—Sent fore-topsail yard, fore-yard, and fore-topgallant mast on deck. Unbent fore-topsail and fore-sail. Got the fore-topmast with rigging, top and cap down, and sent them to the dockyard, and the fore-yard up as a sheer.

“Thursday, 16th Sept., A.M.—Employed rigging sheers, &c. P.M.—Cut the foremast sixteen feet above deck, and sent it to the yard.

18. Captain Worth, R.N.

19. Extract of a letter from Captain Lushington, then commanding the *Etna*.

20. Liverpool Chronicle.

21. Idem.

Carpenters employed fitting a cap to the stump. Rigged a spare main topmast for a jury-mast, &c., &c."

It may also be mentioned that H.M. surveying vessel *Adventure*, commanded by Captain Smyth, was lying by the *Phæton* with conductors at her mast-heads, a practice which Captain Smyth invariably adopted at night, and this vessel sustained no injury.

23. We may observe in these, as well as in the instances of damage by lightning, given in the former paper—

1st. That the points *to* and *from* which the electric matter is passing, may be considered as being *out of the ship*, i. e. (19), in the sea and atmosphere. Accordingly, all the cases just given, particularly prove this fact—that the ship is merely an intervening object.

2d. That the points through which the explosion is experienced, are invariably in the *line or lines of least resistance* between the points of action, that is, through the best conducting lines; cases (r) (s) (u) more especially illustrate this, and a similar result may be traced in all the others.*

24. If we examine still further, the circumstances attending these and all other cases of damage by lightning, on ship board, we may remark, that the greatest mischief always occurs where good conductors of electricity cease to be continued, as if whilst occupying the good-conducting substances, the electric matter was transmitted in a low state of action, and again concentrated with intense force at the instant of leaving them, thereby producing all the disastrous consequences of an expansive agent. The damage, therefore, happens usually, *not where good conductors of electricity happen to be placed, but where they are not present*. Hence the mariner has to contend with a constantly exploding principle, which continues its devastations in all those points where it ceases to be freely transmitted, and which, by providing for itself a passage between the points of action, invariably pursues the track which, upon the whole, opposes to it the least resistance.

25. Such effects being constant, not only on ship-board but on shore, it becomes a question in science, how far it would be prudent to provide for the electric matter an efficient line of conduction between the points of action, which line, by affording the least possible resistance to the progress of the electric matter, would allow the process of equalization to proceed without damage to the mass of the vessel, on the principle that persons dreading an inundation would provide a capacious channel for the water to flow through; an idea, as is well known first suggested by the celebrated Franklin, and since carried into effect with considerable success, the conducting line being denominated a *lightning rod*.

26. The mere application, however, of a metallic rod to a building, or to a ship's mast, might not, alone, be of any considerable moment: there are many other conditions to be fulfilled, without which, such a rod would be altogether useless. In defending a ship more especially

* The only electrical force which can be conceived to belong to the vessel itself, is that depending on the opposite electrical state of the general mass. The ship can only, however, be regarded as a mere point of the great surface influenced, and which, disconnected with the vast capacity of the surrounding sea, is evidently of no great consequence.

from lightning, the general principles which suggest themselves are,—to perfect, first, the conducting power of the masts, which, together with that of the rigging, is comparatively small, but which, having some power of conduction, (15,) and constituting at the same time the most prominent points, would, from their necessary position, transmit the electric matter with damage to the hull :* this being accomplished, it is further requisite to connect, by efficient conductors, the masts thus defended, with the copper expanded over the bottom of the vessel, or with the sea ; and, finally, to connect in a similar way, all the detached metallic bodies in the ship, both with each other, and with the general system, wherever such can be effected. In this way we complete the conducting power of the whole mass, and remove, as it were, all resistance to the process of electrical diffusion.

27. If we reflect on the conditions under which ships are placed, in respect of atmospheric electricity, it will appear evident, that of all artificial elevations, they are the most open to damage by lightning ; at the same time, however, by a judicious employment of the above principles, they may be the most effectually guarded against its devastations. Unlike buildings on shore, which are frequently surrounded by other projecting bodies, and sometimes by trees, hills, and the like, whose irregular forms greatly facilitate electrical diffusion, ships are placed on what may be considered as a vast conducting plane. Thus as they offer the only pointed projections, which extend sometimes above two hundred feet into the air, they are necessarily and directly exposed to the operation of atmospheric electricity, (fig. art. 19,) without being in a condition to palliate its fury. Nor is this all : they are destined to be placed under a variety of new circumstances, and, laden with rich cargoes, to traverse latitudes in which lightning is very prevalent.

By completing the conducting power, however, throughout, we may place ships in a state of greater security even, than can be usually obtained for stationary elevations on shore.

28. In the application of lightning-rods to buildings, it is quite essential to preserve to the rods a perfect freedom of action ; this is usually effected by connecting the rods with deep wells of water ; these acting as uninsulated conductors, obviate in a great degree the obstruction arising from the imperfect conducting power of the ground. When this is not attended to, and the ground is at all dry, the advantage likely to be derived from a conducting-rod is somewhat uncertain ; and damage to the mass of the building may possibly still ensue.

This imperfect conducting power of the ground is well illustrated in the case related by Mr. Kinnersley, of a conductor struck by lightning on the house of a Mr. West, at Philadelphia, where, notwithstanding the continued rain, the electric light was seen at the foot of the conductor breaking over the pavement. The point of the conducting-rod on which the lightning fell was partially melted.

29. Now, a body which actually floats in a uniformly conducting substance, such as sea-water, may be defended with a great degree of certainty. The circumstances, also, under which many of the separate metallic bodies in a ship are placed, tend still further to increase the security. Thus, all the metallic bolts, together with the iron knees,

* See all the foregoing cases.

and which enter so abundantly into the construction of his Majesty's ships, may be all considered as tied together in one vast conducting mass, by the copper expanded on the bottom, or at least sufficiently so. We have therefore only to connect the masts, when made good conductors of electricity, with these masses, by means of adequate metallic bands, passing in appropriate directions, and we immediately provide the most effectual security against the extensive damage from lightning so frequently occurring on ship-board.

30. It will further appear, on due consideration of the principles above stated, that the removal of resistance to the electrical diffusion in all directions, is the only principle on which we can rely with safety, in our attempts to defend buildings and ships in thunder-storms. Many persons, however, have been led to suppose, that the ill consequences arising from lightning would be best avoided, by placing balls of glass, and other non-conducting bodies, on the mastheads, or on the most exposed points; a notion which, although entitled to investigation, seems altogether fallacious; indeed, it will be found quite at variance with all experience, as will be explained in the course of these papers. Surely, the obstacle, or other assumed influence of any insulating substance of this kind, could have no appreciable value in resisting an agency such as the matter of lightning, the action of which, depending on an overwhelming force, exerted perhaps between 100,000 acres of electrified clouds and the surface of the sea, (19,) is so powerful as to break through a mile or more of dense air; the most perfect, if not the most compact of all insulating bodies.

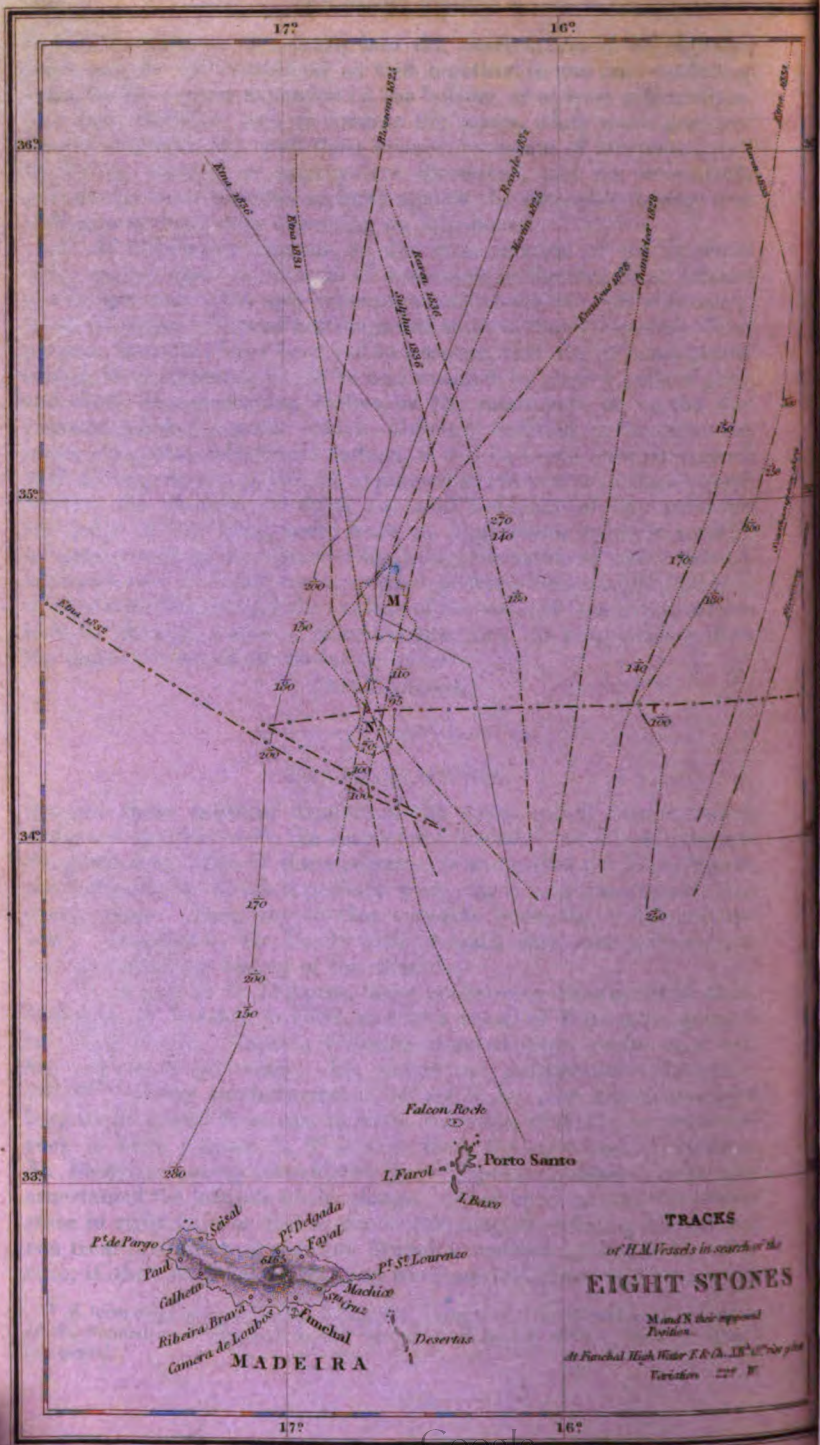
[To be continued.]

THE EIGHT STONES.

AMONG those doubtful dangers of the ocean called *Vigias*,* which disfigure our charts with the character "doubtful" attached to them, to the great discomfort of the navigator, is one called the Eight Stones, the authority for which is perhaps more vague and questionable than many others. Referring to that valuable book, the "Atlantic Memoir," compiled by Mr. Purdy with so much care and judgment, we find the following history of this shoal:—

"According to M. D'Apres, these rocks were discovered by Capt. Vobonne, of London, in 1732, and by a vessel of Bordeaux, going to the West Indies. Captain Vobonne counted eight rocks even with the surface of the water. He placed the southernmost of them in $34^{\circ} 30'$, and the northernmost in $34^{\circ} 45'$ N. lat.; he gives them three leagues of extent from east to west, and adds, that the southernmost rock is forty leagues N. 5° E. true from the east end of Madeira. M. Fleurieu having considered that Captain Vobonne must have ascertained the latitude of this danger, either by an actual observation when in sight of it, or else by dead-reckoning, calculating his distance run from it to the east point of Madeira, concludes, that in the latter case, if the east point of Madeira were not laid down upon the charts

* A term originating with the old Spanish navigators, "*vigia*" being the imperative of the Spanish verb "*vigiar*," to look out, or watch for any thing; thence "*vigias*," the plural.



TRACKS
of H.M. Vessels in search of the
EIGHT STONES

M and N their supposed
Position.

At Funchal High Water F. & A. 18° 11' 00" side plus
Variation 22° E.

then, existing as it is *now*, the position ascribed to this danger by Captain Vobonne must partake of the error. Now, the English and Dutch charts of that time lay down the east end of Madeira in $32^{\circ} 30'$ N. lat. only; and in an old English chart this danger is laid down, agreeably to Captain Vobonne's description, and on that chart the east end of Madeira is placed in $32^{\circ} 30'$ N. In our chart the reef appears extending from $34^{\circ} 40'$ N. to $34^{\circ} 50'$ N., in long. $16^{\circ} 35'$ W. If, however, Captain Vobonne determined its latitude by *observation*, then its position, as given by him, will be correct. We have adopted the idea, that Captain Vobonne ascertained its position by *dead-reckoning*, and have therefore placed it on the chart according to the corrected latitude and longitude, and of course rather more to the northward than Captain Vobonne, although nearer to Madeira than he stated it to be.

"Messrs. Verdun, Borda, and Pingré, observe how surprising it is, that a danger of such large extent should not have been discovered before the year 1732, and that it should not have been often seen since, so much frequented as these latitudes are. It is, however, inserted on the chart, without pretending to vouch for its existence. In 1826, it was vaguely reported at Madeira that the Eight Stones had been lately seen."

Such is the account of the Eight Stones, and it would appear that the vague report alluded to, of the shoal having been seen in 1826, may have originated in the following circumstance, which we find mentioned in the remarks of Lieut. W. P. Croke, commanding the *Emulous* packet in 1828:—

"The boatswain's mate of H. M. P. *Emulous*, under my command, William Ward, who is a steady good man, and worthy of credit, states, that, when serving in the merchant-ship *Nautilus*, of London, commanded by a Mr. George Hall, a lieutenant, R.N., they fell in with a shoal, as he thinks, about thirty leagues to the north-west of Porto Santo; that a boat was lowered, and he, the said Wm. Ward, went with Mr. Hall, and plainly perceived breakers, weeds, and the rocks; that the weather was fine, and that he heard his commander and the mate say, that 'these rocks must be the Eight Stones.' W. Ward does not know the latitude or longitude, but says that both were well known to Mr. Hall, and that chronometers and lunar observations were constantly used."

Lieut. Croke also adds, "I beg further to state, that during the last voyage, on the 28th Jan., 1828, I passed over the spot where the Eight Stones are laid down in the Admiralty charts, and consequently they do not exist *there*. It was a fine day, and I had three good chronometers, which, on making Porto Santo the next day, perfectly agreed."

The remarks of Captain Beechey, published in his account of the *Blossom's* voyage to Bhering Strait, and we may add those of the other officers generally, whose tracks we have laid down, are so much to the same effect, that we may save the reader a repetition of them. But we may be permitted to observe, in conclusion, that, though the existence of these rocks appears more than doubtful, yet, that it would be unwise and unsafe to expunge them from the chart, till all the neighbouring sea has been ploughed by careful navigators, in the

manner shewn in the annexed plan. Our active and enlightened Board of Admiralty directed those tracks to be pursued; and we hope that those of our readers who have it in their power will second their Lordships' endeavours, by forwarding to the Admiralty any accounts they may obtain, which may throw any further light on the Eight Stones, or which may lead to the discovery of any other dangers.

CONDITION OF BRITISH SEAMEN—*Defective Discipline of Merchant Ships.*

To the Editor of the Nautical Magazine.

MR. EDITOR,—My letters which you have published on the above subject, have elicited remarks, and although some are not couched in terms the most courteous, or flattering to me, yet, as they promote discussion, and prove that the subject is attracting notice, I am glad to see your pages so occupied; feeling quite certain, that the more it is inquired into, the nearer eventually will all parties agree in my view of it; and however the sensitive mind may be shocked at my description of honest "Blue Jacket," that it will in the end be found correct.

Should the subject of these letters attract the notice of those who have the power to effect some good in it, I shall consider my time and attention well applied, in my attempts to shew the unenviable situation of we poor misnamed "Commanders of Merchant Ships," and having taken the lead in so doing, I cannot help noticing the letter contained in your last number, under the signature of "Observer," remarking on that of mine, which you published, for the second time, in your last March number.

I consider that the observations I have made through your magazine, would incur the risk of being weakened in the minds of those who are not well acquainted with the subject, were I not to notice the letters referred to of last month. Although I am extremely adverse to any thing like egotism, and would willingly not see, what may appear personal, (as far as anonymous writers can suppose any observations of another *incognito* to be so,) yet, I cannot allow any remark to pass unnoticed, which may have the slightest tendency to detract from the weight which I positively claim, in despite of all the Observers in the world, to be due to my experience, and many years of practical observation and employment, in the capacity which my signature denotes me to hold. I must, therefore, however unpleasant the task, say a word or two, of my own pretensions, in reference to what "Observer" is pleased in plain terms to style his belief to be, *viz.*, that my opinions are not entitled to much weight. He has thought proper to assume my unfitness to conduct a command over a ship's company, either, "with comfort to myself and passengers, or benefit to my owners." Now, in reply to this, I will tell him that I have very frequently had the same men serving under me for several years, that upon the completion of our voyage, (about the longest that can be made,) I have had the whole ship's company, to a man, re-shipped, and afterwards begging to follow me into another ship, into which I have shifted my command, and I have taken them. As to the satisfac-

tion of passengers, I have very often been highly complimented by them, upon the good order, and the efficiency of my ship; and if it suited my purpose, I could shew such *written opinions* on this point, (and those by good judges,) the equal of which I would challenge any one to produce. Further, that I at present command a ship, in which nearly every man has been with me some time; and I verily believe, that a threat of discharging any one of them would be considered as a serious misfortune. So much as to my being unfit to command a ship's company, though not being able to do so, "with advantage to the owners," as "Observer" is pleased to believe, is, to say the least of it, a most wanton and inconsiderate remark, seeing that I might perhaps now be in command of a ship belonging to others; and were we writing under our own proper names, such remark would be properly termed *malicious*. As to what I have gone through, to complete my fitness for command, let "Observer," or any one else, detect me in an unseaman-like act or expression, or shewing any ignorance of what I profess to understand; and then it will be time enough to prove to him, how far I am qualified not only to command men, but to do every duty on board a ship, which, for "Observer's" information, I may tell him that *I have performed* in every essential branch.

This ungrateful task disposed of, I will follow up my *deliberately formed opinions* of the shocking state of *disorder* in which the merchant ships of our country at present exist, and shew, how very ineffective all laws hitherto enacted are to remedy the evil, and how nothing short of childish and chimerical all such half-measures must of necessity be, as those which your correspondents have from time to time ventured (in their excess of praiseworthy and kind feelings towards seamen) to imagine, would be sufficient to control them.

In respect to the *famous* act, known as "Sir James Graham's," I repeat that it is in every feature the most ineffective piece of legislature that ever was conceived. I have already shewn (vide February number of last year,) its absurdity in what was intended for one of its chief provisions, viz., the attempts to retain on board a whole ship's company against their will, or contrary to the wishes and interest of the commanders and owners, and were it not so universally acknowledged to be so, not only by all practical seamen in charge of ships, but also by magistrates, and all authorities, called upon to act under its provisions; I would undertake to shew its inefficiency, from "clue to earing." I challenge "Observer," (who seems extremely hurt at this hobby of Sir James' being so roughly handled,) to shew one good, wholesome provision in it, (being also an improvement upon what existed before,) and I will promise him, either to confute his shewing, or to admit myself in error. Does it man the navy? does it induce order in merchant ships? does it enable a magistrate, or consul, to remedy effectually any disturbance or mutiny? I say no, and would be glad to be informed what earthly good it does effect, except it be creating a pretty tolerably expensive provision, for, no doubt, some worthy registrars and clerks!!

I will tell "Observer," that the same scenes of brutality, drunkenness, and insubordination, which I have described in previous letters, continue unabated; and that, in point of fact, the evil is ten times worse than it was thirty years ago; and further, that, till something

effectual is done to check it, it will progress from this state to worse still. It is, however, to be hoped, that something really effectual will ere long be done, before public attention is called to the subject by some such daring and licentious acts as will make it a matter of serious consideration, whether or not a "British Merchant Ship," is a secure conveyance either for person or property.

That an evil of such "obstinacy," is to be cured by "voluntary association, communicating through committees with the outports," and which "association" in itself, and branches, is not only to hear, but to *remedy every complaint*, is the most curious, and visionary idea, that surely ever entered into the head of any one. But it is to do more, it is to attend to the *construction and improvement of ships, and all that belongs to them!* What think you of this, Mr. Buckingham, Mr. Ballingall, and Mercator? Then the funds for this gigantic association, which, be it observed, is also to build hospitals, and endow all old and meritorious masters and seamen, are to be raised thus: "Observer" says, "they (the funds) *should* be subscribed by *every body* (which in effect is nobody) connected with shipping!" Builders, tradesmen, brokers, underwriters, merchants, &c., &c., as well as seamen!!

I would not have it imagined for one moment that I underrate the value of all, or any of those plans which have in view the comfort and care of the old, meritorious, and disabled seamen—no such thing—nothing would be more gratifying to me, than such a refuge "under my lee." But really, those persons can know little of human nature, and the life of a seaman, who fancy such schemes, however well-intentioned, keep the unruly beings in order, for whom such amiable plans are intended; and who are supposed, no doubt, to become so *full of gratitude*, for these attentions to their future comforts, that it will cause all hands to be on the alert, to be attentive to their duties, to turn up at a moment to shorten sail, and enable them to withstand the grog-shop, and all other temptations they are subject to. All this to be effected through the comfortable prospect of a hospital, and *quiet, sober, well-conducted*, seaman's house. I say that a man must divest himself of all recollection of the world in which he has lived, if he can bring himself to believe all these things can happen. No, your friend "Observer" must be allowed an age or two to try his schemes, and "Jack," as I have before said, must be made "a reasonable, educated being." Human nature must be reformed, and this will doubtless be effected, when "Observer's" second step is made, which is, "to exclude from the sea all the worthless blackguards," (this is a strange admission of what *they are*,) and which "is to produce at all times, serving apprenticeship, 15,000, to 20,000, *well-disposed* boys," excluding "all who are not of robust, and healthy habits, and admitting only such as are brought up in the fear of God, and of honest parentage!!" the poorer the better! (why?) "No one to be taken on board ship, without a good character, chest and hammock!"

There has, from time immemorial, been a saying about the sea, and a certain ugly machine formerly used at Tyburn, "refusing nobody." All this, "Observer," and the philanthropists of the present day, intend to alter—I wish they may.

Further quotation can hardly be necessary, to shew how completely

visionary such schemes are—how they are concocted, without any proper notion of the subject—and, in fine, how wholly ineffectual they are, to work any good in practice, as secondary measures. Let me repeat, that every plan which can be devised to ameliorate the sailor's condition, I heartily commend; but let it be kept in view, that what in these letters is contended for, is, first of all, *improvement in the discipline of a merchant ship.*

I quite agree with "*Observer*" in the necessity of regulating the allowance of provisions for seamen—that I have set out with as indispensable to good order, although it is a point which seems to have been overlooked in my critic; neither is he quite correct, in stating that *we* can send a seaman to the house of correction for thirty days; a magistrate *may* do this, upon complaint of the master, and *sometimes* will do so. *A master can mulct* a seaman of double his pay for refusing his duty—a pretty compensation this, when it may be easily supposed, that a man may refuse a duty for an hour, the mulct for which would amount to two hours' pay, and the consequences may be fatal to the ship! Indeed the most serious consequences may result from such affairs, and it requires no stretch of the imagination, even in those most ignorant of nautical affairs, to at once comprehend how the most trivial disobedience of orders may cause even the loss of a ship. I have often known the most serious risks to arise from such myself; and in my letter, republished by you, Mr. Editor, in last March number, have stated the delay and danger occasioned to a most valuable ship, and the very great inconvenience and expense resulting from such an occurrence. To talk of a mulct of a man's pay being compensation, is sheer nonsense, and there are occurrences every day on board British merchant-ships of this nature, which I will maintain would not be overpunished by forfeiture of wages, and a month or two of imprisonment. Life and property are put in jeopardy continually, to an extent few people are aware of—though of course Sir J. Graham, his "naval officers," and those "highly respectable persons of the city of London," who framed the present precious laws by which the merchant service is governed, knew nothing of this grievance, otherwise it would have been provided against. I will only notice one more remark of "*Observer*," in reference to my letter, which shews a haste and carelessness not easily to be accounted for, and quite at variance with his adopted signature, inasmuch as I defy him to shew, in any part of my letters, that I have advocated the *having recourse* to corporeal punishment; (that, however, *we have* that power, and, moreover, *that it cannot be taken away*, I think I have pretty clearly proved;*) he says, "that we should not require the power of administering corporeal punishment—that we have the power of putting a seaman in irons, and feeding him on bread and water"—all which observations are evidently made, to chime in with the mistaken leveling notions of the day, and to catch the eye of the misjudging philan-

* A case in point, that of the Manly, Captain Davis, was decided only the other day, the particulars of which will appear shortly in our pages. In this case, three dozen lashes were inflicted, and in the magistrates opinion most justly. But that the power of inflicting such punishment is invested in the captain, "under a most serious responsibility," has been repeatedly recognized by Admiralty judges, and it is well that it is so.—Ed. N. M.

thropist. A man in command of a well-regulated ship has undoubtedly all this power, and if one of judgment and decision, will make use of it upon proper occasions. But he well knows he will do so upon a most serious responsibility, and that the occasion must justify it; and I defy any one to say, that the threat I used, and which "*Observer*" evidently had in view, was not strictly justifiable, of putting in irons, and keeping on bread and water, men who had committed robbery, and conducted themselves in the manner I described them to have done.

Seriously, Mr. Editor, human nature—man's debased habits, arising from bad education, and low life, (and if you please, his evil nature,)—and especially *the life of a sailor*—are all circumstances lost sight of (if ever known) in discussing this question, by your well-meaning correspondents.

There is *one point*, and to that I adhere; and I defy any one to say that it can be dispensed with, if it is intended, not only to improve, but to complete discipline and good order on board a merchant-ship; and that is simply "*obedience*:" it may sound harsh and arbitrary, but without this it is, I maintain, impossible that a ship can be managed with safety to the lives and property entrusted to the master's charge, and is, after all, no more than is insisted upon from inferiors in every other situation in civilized society, as betwixt master and man. This is looking at the difficulty in its plain, common-sense, and only practicable and tangible view—it is the grand desideratum; and it is only required to constitute "*obedience*" "*law*," and in default, to apply a *certain, defined, and severe punishment*—not to be applied by the master, (except in such extreme cases as would justify any measures,) but, upon conviction, by a public officer. Let this only be settled "*as law*," and then, if "*Observer*" can carry his plans into effect, and bind 15 to 20,000 *good boys* to serve a seven years' apprenticeship, and exclude all "*blackguards*" from the sea, (and what a change would come over us!) let him do this, Mr. Editor, and to witness it I should be as much delighted as any of your most philanthropic friends, and as I am sure you would also be yourself.

I am, Sir, your most obedient servant,

A MASTER OF A BRITISH MERCHANT SHIP.

London, 25th May, 1837.

GALLOWAY'S WHEEL.

To the Editor of the Nautical Magazine.

Glasgow, June 9th, 1837.

SIR,—I have just read in the "*Nautical Magazine*" for the present month, a communication from Mr. Joshua Field, on the subject of my paddles, described in your number for February.

I feel extremely glad that Mr. Field has put forth this claim in your journal, as it gives me an opportunity of publicly shewing the absence of any right on the part of that gentleman to the merit of a prior claim to this invention.

You have referred to an article in "*Newton's Journal*," by Mr.

Field, dated November, 1835. Now my patent was sealed in August of the same year, and the paddles were publicly tried by me before September. In the article alluded to, and which was not published until nearly three months after my experiments were before the public, Mr. Field gives diagrams of three arrangements of divided paddles, one of which he states he had tried on a vessel plying on the Thames. The other two, it appears by his own statement, were private models, of which I or the public knew nothing, until the success of my invention induced him to publish them. Now the arrangement so tried by Mr. Field is well known to have been a failure; and, in fact, Mr. F. predicted to several of my friends, and others, on first hearing what I was doing, that such would also be the fate of my attempts, as a divided paddle necessarily involved a loss of speed to the vessel.

It must therefore be obvious that Mr. Field's claim rests on any resemblance which may exist between my invention and his public experiment; and if any one will take the trouble to examine his diagram, (marked fig. 2 in "Newton's Journal,") they will perceive that such a paddle fails to comply with the condition upon which the superior action of a divided paddle is founded, namely, that of each series of the bars which form a paddle, entering the water at the same point, or nearly so.

I repeat, that with Mr. Field's private models I have nothing to do. It appears that he had abandoned the subject for years, until he found that I had succeeded in bringing my invention into successful operation. If he approached nearer to efficiency in these models than in his public experiment, it must be to him a very natural source of regret that he has so narrowly missed the favourable result which I have obtained. In this age of scientific investigation, it is so common an occurrence for two persons to be (unknown to each other) pursuing nearly the same course of experiment, that I can well understand, and it will be readily conceded, that Mr. Field and myself may have been thus separately occupied. I do not, therefore, pretend to dispute Mr. Field's statement as to his having private models, which were nearer my plan than his public experiment was; but I wish clearly to shew that Mr. Field, having abandoned his arrangement as a failure, I was the first to bring an efficient divided paddle before the public, and therefore am fully entitled to the exclusive privilege of my patent, as well as to the merit of the invention.

As you have repeated the assertion of the writer in "Newton's Journal" that you cannot perceive the difference between Mr. Field's arrangement and mine, I trust the distinction I have drawn between his public experiment and his supposed models, will enable you to see that there is a difference as wide as Acheson, namely, the broad line which can always be drawn between success on the one hand, and failure on the other. As a practical, and therefore a tangible, and indisputable proof that this difference is fully established, I take leave to point out, that in every one of forty or fifty vessels, to which my paddles are applied, (and in the majority of cases they have been used by steamers of the largest class, among which I may instance the whole of those which ply between Glasgow and Liverpool,) there has been an improvement in the speed of the vessel; whereas, in a recent case, in

which a vessel was fitted under the superintendence of Mr. Field, I am informed by the owners of that vessel that the alteration was not worth the expense, the vessel having lost speed in smooth water !

In conclusion, referring to the statement made by you, that Mr. Field is applying his paddle to one of H.M. steamers at Woolwich, I beg to say, that not having been in England for six months, I was ignorant of the fact until you announced it.

I am, Sir, your obedient servant,
E. GALLOWAY.

ERICSSON'S LEAD.

WE have just received the following favourable opinion of Ericsson's lead, and have much pleasure in complying with the wishes of our correspondent, and doing all in our power to promote the use of this valuable invention.

To the Editor of the Nautical Magazine.

H.M.S. Imogene, Rio Janeiro, Feb. 17th, 1837.

SIR,—Perhaps you will have the kindness to give insertion to the following statement:—

Captain Gosselman, of the Swedish navy, on his passage to Brazils, in H.M.S. Imogene, introduced on board Ericsson's sounding machine. I am happy to bear testimony to its great correctness, as well as its simplicity, having made repeated trials with it in competition with Massey's, Birts's, and the common lead, the ship going six, seven, and eight knots, with the depths varying from fifty to eighty fathoms. The accuracy of Ericsson's has been such as to cause the greatest confidence in it; and its utility, in my opinion, as well as other officers of this ship, is such as to give it a decided preference to any sounding machine yet used; so much so that I think every vessel should have one on board. The above trials were made in the English Channel, on the Abrolhos Banks, in the entrance of the river Plate, off Cape Frio, and in the neighbourhood of Rio Janeiro, Santos, &c.; and it has invariably given correct soundings, without trouble, or loss of time, in heaving to, or shortening sail.

I am, Sir, your obedient humble servant,
RD. THOMPSON, Master of H.M.S. Imogene.

PROPOSED SETTLEMENT IN DAVIS STRAIT.

To the Editor of the Nautical Magazine.

Hull, 21st May, 1837.

MR. EDITOR,—I confess that I was not a little startled to find, in the very next pages to those in the *Nautical Magazine* in which my letter to you is inserted, what at first appeared to me an answer from your correspondent "Baffin," and who dates also from Hull, although I cannot imagine that he has ever navigated the bay from which he

takes his name. I agree, however, so far with "Baffin," that it is high time "some energetic measure should be adopted by Government, to prevent the recurrence of such disastrous and distressing events" as those which have recently attended the northern whale-fishery. "Baffin" is also perfectly right when he does not consider that *one* settlement would be adequate to the purposes in view; but if he had added that *twenty* would not be adequate, he would have been just as near the truth. The fact is, that in the three additional places he has mentioned there is no harbour at all! If ever "Baffin" has been in Baffin's Bay, let me call to his recollection, that Ponds Bay (the first he has mentioned) is a large open bay, with no harbour whatever in it; that Coutts Inlet (the second place he has mentioned) is as wide as the British Channel at Dover; and lastly, that Home Bay is one of the positions that would be obnoxious to a great pressure of ice. I have said thus much, to prove that "Baffin" was either locally ignorant, or that he should recollect himself better.

I must now point out the absurdity of establishing four settlements, with the uncertainty of doing what could be effectually accomplished at one-twentieth of the expense, and without the *risk of being never heard of*, should the ice (as it did for many years) never quit the coast. "Baffin" says, IF a good harbour could be found: but I can tell him, that IF a good harbour, or one such as a ship could safely spend the winter in, was found, it would not be open on that coast above one month in the year; so that the ship must manage to get damaged in that *lucky* month, or she could not be repaired there, and the fortunate, or rather unfortunate, crew of the ship that was wrecked, who could reach either of these depôts, must make up their minds to remain there at least ten months, and at the end must consider themselves lucky fellows if they get away at all the next season! With respect to the sailors abandoning their ships, I can give "Baffin" the case of the *Active*: even after that ship was well stored with provisions from the other ships, and frozen fast in a safe bay, the crew could not be persuaded to remain on board her; and I could name several others who behaved in the same way. Captain James Ross was therefore perfectly right, when he expressed his fear that the men would abandon their ships, and especially if they had not been successful, as they would then have nothing to lose, while they would be supported during the winter at the depôt at the Government expense.

I have in my last exposed the impolicy of establishing *one* colony, or station, which, if successful, would do away with the nursery for seamen; but if the whole four settlements were successful, would not that success complete the destruction of the fishery? "Baffin," who says he is deeply interested in the success of the whale-fishery, may in that case lay up or dispose of his ships, and go out as Governor-General of the new Yankee (Esquimaux) colony; and I venture to predict that Governor "Baffin" will remain no longer than one year, *if he can help it*. In short, for many reasons besides those I have stated, the plan carries absurdity on the face of it. I am far from supposing that the whaler's friend "Baffin" has any other motive in view, than the well-being of that gallant and enterprising class of men whose case calls so loudly for consideration; but I cannot con-

clude without adding, that I have consulted many of the most experienced owners and captains in that trade, on this interesting subject, and that they have been unanimously of opinion, that the expensive plan of colonizing the west coast of Baffin's Bay, were it practicable, would not alleviate the misery complained of, or be of any service to the fishery; but, that by adopting the plan which I have proposed, of re-establishing the bounty, and thereby obliging every ship to carry a sufficient quantity of provisions, preserved meats, lime-juice, sugar, and clothing, to sustain the crew on board their ships, in the event of being frozen in; which, if not wanted in one season, would do for the next, or each succeeding voyage, and if properly packed in tin cases, &c., as in the discovery ships, it would only be a *first cast* that would be required. Ships' crews would then have more comfort than they could have any where else; there would be no inducement or plea for abandoning the ship, and they would be constantly enjoying the hope of getting away at least early in the spring, instead of dwelling on the chances of never getting off at all. Let us hope that some truly philanthropic M.P. will yet take the business up; and I am confident that if truly and justly represented to Government, of whatever denomination, any effectual measure for curing this crying evil would not meet with a dissenting voice.

I am, Sir, your obedient servant,
A. B.

Naval Chronicle.

HIS LATE MAJESTY, WILLIAM THE FOURTH.

IT now becomes our painful duty to record that event, which, by depriving us of our beloved Monarch, KING WILLIAM THE FOURTH, has spread the gloom of mourning over our land. For some time past the health of our late Sovereign had been the subject of deep solicitude every where, and fears, too well grounded, were entertained of the result, which time has realized. That result is best conveyed in the following official bulletins:—

“ Windsor Castle, June 9, 1837.

“The King has suffered for some time from an affection of the chest, which confines his Majesty to his apartment, and has produced considerable weakness, but has not interrupted his usual attention to business.

(Signed)

“HENRY HALFORD.
“WM. FRED. CHAMBERS.”

“ Windsor Castle, Monday, June 12, 1837.

“The symptoms of the King's disease remain the same, but his Majesty has acquired some strength since the date of the last bulletin, and continues to do the business of the country.

(Signed)

“HENRY HALFORD.
“MATTHEW TIERNEY.
“WM. FRED. CHAMBERS.
“DAVID DAVIES.”

“ Windsor Castle, Tuesday Morning, June 13, 1837.

“His Majesty has had a good night, and continues, in all respects, the same as yesterday.

(Signed)

“WM. FRED. CHAMBERS.
“DAVID DAVIES.”

Windsor Castle, Wednesday, June 14, 1837.

"The King has passed another tranquil night, and his Majesty appears refreshed this morning. (Signed)

"HENRY HALFORD.
"WM. FRED. CHAMBERS.
"DAVID DAVIES."

Windsor Castle, Thursday, June 15, 1837.

"The King has had a good night, and is in some respects more comfortable this morning. (Signed)

"WM. FRED. CHAMBERS.
"DAVID DAVIES."

Windsor Castle, Friday, June 16, 1837.

"The King has had a good night, and the symptoms of his Majesty's disorder are less urgent.

"His Majesty is feeble, but his attention to business has scarcely been interrupted. (Signed)

"HENRY HALFORD.
"MATTHEW TIERNEY.
"WM. FRED. CHAMBERS.
"DAVID DAVIES."

Windsor Castle, Saturday, June 18, 1837.

"The symptoms of his Majesty's disease have undergone no essential change since yesterday morning. (Signed)

"WM. FRED. CHAMBERS.
"DAVID DAVIES."

Windsor Castle, Sunday Morning, June 18, 1837.

"The symptoms of the King's disease have not increased, but his Majesty is more feeble to-day. (Signed)

"HENRY HALFORD.
"WM. FRED. CHAMBERS.
"DAVID DAVIES."

Windsor Castle, Monday, June 19, 1837.

"The King continues in a very weak and feeble state, notwithstanding his Majesty had some quiet sleep in the night.

"After transacting his usual business yesterday, his Majesty received the sacrament from the hands of the Archbishop of Canterbury with attention and great apparent comfort. (Signed)

"HENRY HALFORD.
"MATTHEW J. TIERNEY.
"WM. FRED. CHAMBERS.
"DAVID DAVIES."

Windsor Castle, Tuesday, June 20, 1837.

"It has pleased Almighty God to release from his sufferings our most excellent and gracious Sovereign, King WILLIAM the FOURTH.

"His Majesty expired at twelve minutes past two o'clock, A.M., this day. (Signed)

"M. J. TIERNEY.
"WM. F. CHAMBERS.
"DAVID DAVIES."

Thus has passed from among us our much-loved King. He, whose heart was ever open to the sorrows of the unfortunate, who was ever attentive to the claims of unrewarded merit, and whose greatest happiness was that of doing good. He is gone,—and a nation's sorrow proclaims the loss of a good, a benevolent, and an excellent king. If William the Fourth, as the monarch of a free people, has, by his uniformly gracious manner, by a happy exercise of his royal power, won the affections of his people, which assuredly he has done, how much more has he endeared his memory to our naval readers, those whose good fortune it has been to look up to him, not only as their KING, but as their chief in an arduous and glorious profession, and in that profession as their FRIEND. We well know that our readers will find a response in their own bosoms to the justness of our remarks. We well know that many of them are now left witnesses of all that we have advanced; that at this moment the breast of many an officer

glows with gratitude for his Sovereign's attention to his claims—that the wants of the seaman were not urged to him in vain—that the widow has mingled with tears of sorrow those of gratitude for his kindness—that the destitute orphan has been provided for by our lamented naval monarch, WILLIAM THE FOURTH. He who has shared with British seamen the joys of the sea, and the perils of the battle and the storm.

It will afford some gratification to our readers, to know that his late Majesty received every consolation that could surround the death-bed of mortality—the affectionate sympathy and solicitude of his family, and the resources of religious faith, and the consolation arising from a knowledge that, “millions of his loyal subjects were uniting in mournful regret over the sufferings of their king.” The appearance of the metropolis, from the temporary cessation of business, the course of which was arrested by the event, well bespoke the sincerity of these regrets, and with truth it has been said, “a more universal display of sorrow, than that in which the metropolis has been cast by this sad event, we never beheld.” Every greeting is as that of “men who had forgot to speak,” of those who carry with them not the outward semblance only, but “the warm heart's real grief.” On the 18th, the anniversary of the battle of Waterloo, the usual offering of a flag was sent to the castle by the duke of Wellington, in acknowledgment of the tenure by which he holds the estate conferred upon him by the nation. The earl of Munster, thinking that the circumstance might have some refreshing effect on the king, carried the flag to him. His Majesty was with some difficulty made aware of the fact, but then laying his hand upon the flag, and gently grasping its folds, he feebly ejaculated: “Ah, it was a glorious day for England.”

The following is from the London Gazette :—

Whereas it has pleased Almighty God to call to his mercy our late sovereign lord, King William the Fourth, of blessed and glorious memory, by whose decease the imperial crown of the United Kingdom of Great Britain and Ireland, is solely and rightfully come to the High and Mighty Princess Alexandrina Victoria, saving the rights of any issue of his late Majesty King William the Fourth which may be borne of his late Majesty's consort: We, therefore, the lords spiritual and temporal of this realm, being here assisted with those of his late Majesty's Privy Council, with numbers of others, principal gentlemen of quality, with the Lord Mayor, aldermen, and citizens of London, do now hereby, with one voice and consent of tongue and heart, publish and proclaim that the High and Mighty Princess Alexandrina Victoria is now, by the death of our late Sovereign, of happy memory, become our only lawful and rightful Liege Lady Victoria, by the grace of God, Queen of the United Kingdom of Great Britain and Ireland, Defender of the Faith, saving as aforesaid. To whom, saving as aforesaid, we do acknowledge all faith and constant obedience with all hearty and humble affection, beseeching God, by whom Kings and Queens do reign, to bless the Royal Princess Victoria, with long and happy years to reign over us.

Given at the Court at Kensington, this twentieth day of June, one thousand eight hundred and thirty-seven.

God save the Queen.

At the Court at Kensington, the 20th day of June, 1837, present, the Queen's Most Excellent Majesty in Council. Her Majesty being this day present in Council was pleased to make the following declaration, viz:—

The severe and afflicting loss which the nation has sustained by the death of his Majesty, my beloved uncle, has devolved upon me the duty of administering the government of this empire. This awful responsibility is imposed upon me so suddenly, and at so early a period of my life, that I should feel myself utterly oppressed by the burthen were I not sustained by the hope that Divine Providence, which has called me to this work, will give me strength for the performance of it, and that I shall find in the purity of my intentions, and in my zeal for the public welfare, that support, and those resources which usually belong to a more mature age, and a longer experience.

I place my firm reliance upon the wisdom of Parliament, and upon the loyalty and affection of my people. I esteem it also a peculiar advantage, that I succeed to a sovereign, whose constant regard for the rights and liberties of his subjects, and whose desire to promote the amelioration of the laws and institutions of the country, have rendered his name the object of general attachment and veneration.

Educated in England, under the tender and enlightened care of a most affectionate mother, I have learned from my infancy to respect and love the constitution of my native country.

It will be my unceasing study to maintain the reformed religion as by law established, securing at the same time to all the full enjoyment of religious liberty; and I shall steadily protect the rights, and promote, to the utmost of my power, the happiness and welfare of all classes of my subjects.

Whereupon the Lords of the Council made it their humble request to her Majesty, that her Majesty's most gracious declaration to their Lordships might be made public, which her Majesty was pleased to order accordingly.

C. C. GREVILLE.

PROCLAMATION of her MAJESTY ALEXANDRINA VICTORIA THE FIRST.

ON Wednesday, the 21st June, at half-past ten o'clock, the ceremony of proclaiming her Majesty ALEXANDRINA VICTORIA, took place. The Procession moved from St. James's Palace in the following order.

The Deputy High Bailiff of Westminster, (Mr. Lee,) with a strong body of the Metropolitan Police, Bow Street officers, and other constables, led the way, then followed—

Two Videttes of the 1st Life Guards.

One ditto.

The Veterinary Surgeon of ditto.

Four Pioneers, with axes in the rest.

The Beadles of St. James's and St. Martin's parishes, in full dress, with their staves of office.

A detachment of New Police Constables.

Band of the Royal Horse Guards, in state uniforms.

Eight Marshalls on foot.

The Knight Marshall, and his attendants.

The Household troop.

State band, kettle-drums and trumpets.

Six Pursuivants at Arms, on horseback.

The Heralds, mounted.

Garret King at Arms, in his splendid surcoat, supported by his Sergeant at Arms, with their maces.

A troop of Life Guards.

The procession being formed, proceeded along Pall-mall to Cockspur-street, and on arriving at Charing-cross, Sir George Nayler, the Garter King at Arms, after commanding silence, read the proclamation. After this, the procession proceeded along the Strand, and on reaching Temple-bar, an interesting part of the ceremony was observed. This consisted in the formal admission of the royal procession into the city of London, through the bar. The officers at arms on reaching it, demanded entrance into the city, (the gate being closed,) for the purpose of proclaiming her Majesty ALEXANDRINA VICTORIA. On the gate being opened, they were met by the Right. Hon. the Lord Mayor, the Sheriffs, Under-Sheriffs, and other civic authorities; on reaching the corner of Chancery-lane the pageant halted, and the proclamation was again read. The procession then proceeded through Fleet-street; Ludgate-hill, St. Paul's church-yard, Cheapside, Woodstreet, Poultry, Cornhill, and lastly to the Royal Exchange, where the proclamation was again read, and the ceremony concluded.

Immense multitudes awaited the proclamations, at Charing-cross, at Temple-bar, and at the Royal Exchange; and universal delight was exhibited at the hopeful promise of the new reign. Between these points, and throughout the whole line of the procession, the streets were thronged, and every window that could command a view, however remote, was absolutely crowded with occupants.

MOVEMENTS OF THE ROYAL NAVY, 16TH JUNE.

Sd., sailed; arr., arrived; rem., remained.

AT HOME.

PORTSMOUTH.—22d May: *Seringapatam*, arr. at Spithead; *Messenger*, St. V., arr. from Plymouth, and on 24th, towed the *Larne* to Spithead. 26th: arr., *Pique*, with one of her masts sprung. 27th: Went in harbour, and commenced dismantling. The fore and main-masts were taken out. She is to have the same masts, yards, and sails as before, but an alteration to take place in her trim; instead of being one foot by the stern, she is to be brought down two feet and a half. *Revenge*, Capt. Sir W. Elliot, arr. from Mediterranean, last from Gibraltar. She went in harbour on 29th, while doing so, it became nearly calm, and to prevent her drifting within the buoys, an anchor was dropped, and signal made for boats; they soon got alongside, and pulled her head round; when a breeze springing up, she slipped her anchor, and ran into harbour. The anniversary of his Majesty's birth-day was celebrated in the customary manner on the 29th. The troops in the garrison, were reviewed on Southsea common by Major-General Sir T. M'Mahon. At one o'clock the *Princess Charlotte*, *Revenge*, *Hercules*, *Seringapatam*, *Larne*, *Fair Rosamond*, and *Sparrow*, at Spithead, and *Britannia* and *Excellent*, in harbour, fired royal salutes. The commander-in-chief and admiral superintendent entertained large parties at dinner; several houses in the town were illuminated, and the ball at the King's rooms, Southsea, was well attended. On the 30th, the crew of the *Revenge* was mustered, and inspected by Adm. Sir P. Durham, who expressed himself highly pleased with her warlike appearance. 2d June: *Larne*, sd. for Lisbon, calling at Plymouth on her way out. 31st May: *Messenger*, St. V., took on board troops, and proceeded to Cork. 1st June: *Partridge*, Lieut. Bisson, arr. from Falmouth, to refit, and *Prince Regent*, trnspt., from the Mediterranean, with troops, and proceeded to Dover. 5th: sd., *Charles Kerr*, Conv. Ship, for New South Wales. *Revenge* is reported ready to be paid off on the 17th inst. 6th: *Fair Rosamond* sd. for coast of Africa. Arr., *Prince Regent*, transport, to discharge, &c. 7th: arr, *Messenger*, St. V. from Cork, with troops, and, having embarked more, proceeded on 9th, to Cork. The port duties are conducted by the admiral-superintendent; admiral Sir P. Durham went on six weeks' leave on Saturday. *Romney* will be ready for sea next week, and *Seringapatam*. *Alligator*, in dock, is ordered to be fitted for Capt. Sir J. G. Bremer, who is to establish a settlement on the N. W. coast of New Holland. 12th: arr., *Parmelia*, transport, Lieut. Davison, R. N., agent,

with troops; proceeded to Dover. *Sparrowhawk* will go out of harbour. *Pique* has got new fore and mainmasts, and will shortly go to Spithead. Arr., 11th, the *Gladiator* American packet, 20 days from New York. Among other passengers, she had Commodore Rodgers, late of the *President* frigate. 12th: the *Independence*, 60, arr. from Charleston, having on board Mr. Dallas and suite, the ambassador from the United States to the Court of Russia. The usual salutes of twenty-one guns passed. The usual complimentary visits passed between him and Sir F. Maitland. 16th: *Edinburgh* taken out of dock, and the *Partridge* and *Seaflower* taken in. *Hazard* and *Romney* hauled out of the basin. 15th: *Athol*, troop-ship, arr. from the Cape of Good Hope, with troops, and *Beagle*, surv. ves., from the river. Ships in Harbour—*Britannia*, *Royal George*, *Victory*, *Excellent*, *Partridge*, *Pique*, *Revenge*, *Seaflower* cutter, *Prince Regent*, and *Parmelia*, transports, *Hazard*, *Romney*, *Columbia* steamer, and *Cracker* tender. At Spithead—*Hercules*, *Sparrow*, *Seringapatam*, *Princess Charlotte*, *Sparrowhawk*, *Athol*, *Beagle*, and *Independence*, (American.) In Basin—*Ariadne*, *Dryad*, *Brisk*, *Benbow*, *Alligator*, and *Hyacinth*. In Dock—*Warspite*, *Illustrious*, *President*, *Tyne*, and *Edinburgh*. At the Jetty—*Prince Regent* transport.

PLYMOUTH.—May 20th: sd., *Hermes*, st., Lieut. Com. W. S. Blount, for Falmth. next mail to Malta. May 22d: moved into harbour, *Jaseur*, 16, Com. J. Hackett. *Pembroke*, 74, Capt. F. Moresby, taken into dock, she has lost the whole of her false keel, and the main one twisted and rubbed in several places—also a part of her fore-foot carried away. Sd. for Portsmouth, *Messenger* st. Mr. J. King. Arr. *Blazer*, st., Lieut. Com. J. M. Waugh, from Falmth., having left the Malta mail. May 24th: *Saracen*, 10, Lieut. Com. W. H. Hill, moved into the Sound. Arr. *Rhadamanthus* st., Lieut. Com. J. Duffil, from Spain; left passages on the 21st instant: on her way out with ammunition, she caught fire, and at one time was in the most imminent danger, but by prompt exertions it was got under. May 25: arr. *Wolverine*, 16, Com. Hon. E. Howard, from Mediterranean, and came into harbour. May 26th: arr. *Wolverine*, st. taken into dock, and undocked on the 1st inst. received but little damage. May 29th: arr. *Galatea* and *Diana*, Danish men of war, from Copenhagen, on a cruise. Sd. *Rhadamanthus*, Lieut. Com. Duffil, for Woolwich. May 31st: *Jaseur* was this day paid off into ordinary. June 1st: Sailed *Scorpion*, 10, Lieut. E. Holland, for Falmth. 3d: sd. *Rajah*, freight-ship, with part of the 32d for Quebec. June 4th: Sd. *Scorpion*, 10, Lieut. Com. C. Gayton, for coast of Spain. June 5th: arr. *Larne*, 18, Com. P. J. Blake, from Portsmouth, and on 7th, sailed for Lisbon, and the E. Indies. Sd. *Galatea* and *Diana*, Danish ships of war, on a cruise; their officers have expressed themselves highly pleased with the attention they have received, and the efficient state of the men-of-war at this port. June 6th: went into the sound, *Wizard*, 10, Lieut. Com. E. L. Harvey. The *Stakesby* arr. this day, and sailed on the 7th, with part of 43rd for Canada. June 7th: arr. *Gossamer*, tender, from Portsmouth. June 8th: sd. *Saracen*, 10, Lieut. Com. W. H. Hill, for Falmth. June 10th: arr. *Columbia*, st., Lieut. Com. G. T. Gordon, from Spain; and *Columbia* sd. for Woolwich, on the 14th. Arr. *Diligence*, trans., from Woolwich and Portsmouth. Sd. *Gossamer*, tender, for Portsmouth, with men for *Hercules*. June 11th: arr. *Menai* yt., from Malta, and sailed on 14th for Cowes. June 12th: *Spey*, pkt., 4, Lieut. R. B. James, towed out of harbour by *Columbia* st. and sd. for Falmouth. June 15th: sd. *Wizard*, 10, Lieut. E. L. Harvey, for S. America. June 16th: *Pembroke*, 74, Capt. F. Moresby, C.B., taken out of dock. *Donegal*, 78, taken in. A Court-martial is to be held on board *Royal Adelaide*, to try a seaman named Walker, for absconding from *Blazer*, st., with money.

IN HAMOAZE.—*Royal Adelaide*, *San Josef*, *Pembroke*, *Ringdove*, *Wolverine*, and *Blazer*, steamer.

ABROAD.

ALGOA BAY.—11th March: arr., *Conway*, 28th: Capt. C. R. Drinkwater, from Simon's Bay, and sd. for Ceylon. 8th April: arr., *Pelican*, from Mauritius, and sd. for Simon's Bay.

ASCENSION.—24th April: rem., *Buzzard*. 10th May: rem., *Lynx*. 20th April: sd. *Rolla*, for coast of Africa.

ATHENS.—3d April: rem., *Vanguard*.

BAHIA.—29th March: arr., *Imogene*, from Rio.

BARBADOS.—29th April: sd., *Griffon*, 3, on a cruise. 28th: arr., *Garnet*, 16, from a cruise. 27th April: arr., *Flamer*, St. V., from Plymouth. 22d April: arr., *Snake*, from Madeira.

BARCELONA.—14th May: rem., *Childers*.

BERMUDA.—4th April : arr., *Melville*, from Jamaica. 8th : arr., *Nimrod*, from Honduras.

BILBAO.—May 21 : rem., *Scylla*, *Savage*.

BOMBAY.—18th Jan. : arr., *Winchester*, 52, from Ceylon.

R. BONNY.—9th April : rem., *Scout*.

CALCUTTA.—15th Jan. : arr., *Andromache*, from Madras. 1st Feb. : rem. : expected in England in October.

CALLAO.—Jan. 20th : rem., *Blonde*. 1st : arr., *Talbot*, 28. Jan. 23d : *Blonde* sd. for Valparaiso. 2d Feb. : sd., *Talbot*, 28, for Valparaiso.

CEYLON.—23d Jan. : arr., *Algerine*, 10, from Madras. 7th Jan. : arr., *Zebra*, from Sydney.

CONSTANTINOPLE.—May 1st : arr., *Carysfort*, Capt. H. B. Martin, from Malta. 3d : sd., *Volage*, for Malta.

GIBRALTAR.—May 2d : arr., *Wolverine*, 31 days from Malta. 6th : *Revenge*, 17 days from Malta. 9th : *Volcano*, St.V., from Falmouth, and cleared on 11th for Malta ; arr., *Harlequin*, from Malaga, and *Orestes*, from Malaga. 29th May : rem., *Orestes*.

HAVANA.—26th April : arr., *Rainbow*, 28, from Tampico. 27th : arr., *Racer*, 16, from Texas.

JAMAICA, P.R.—30th April : arr., *Meteor*, St.V. 11th May : arr., *Vestal*, 28, from Port-au-Prince. 20th April : arr., *Madagascar*. 27th April : sd., *Serpent*, 16, and *Wanderer*, 16, on a cruise.

LISBON.—14th May : rem., *Inconstant*, 36. 6th : sd., *Trinculo*, for Cadiz ; rem., *Hastings*, *Malabar*, *Minden*, *Talavera*, *Inconstant*, *Pique*, *Cameleon*, and *Partridge*.

MADEIRA.—April 21st : arr., *Pelorus*. 22d : sd. for Cape. 3d May : arr., *Fiper*, and sd. next day for African coast. 20th May : arr., *Comus*, 18, from Plymouth.

MADRAS.—23d Jan. : arr., *Algerine*, 10.

MALTA.—April 18th, arr., *Tribune*, 15 days from Smyrna. 16th : *Medca*, St.V. 17th : arr., *Firefly*, St.V., from Falmouth. 24th : arr., *Hind*, cutter from Tunis. 29th : arr., *Asia*, 84, from Salamis. May 2d : arr., *Rapid*, 4 days from Tripoli. April 13th : sd., *Carysfort*, for Constantinople, and *Dido*, 20, for Barcelona. 20th : sd., *Barham*, *Revenge*, and *Tribune*, for Smyrna. 30th : arr., *Asia*, 84, from Athens. May 6th : rem., *Caledonia*, 120, flag ; *Vanguard*, 80 ; *Russell*, 4 ; *Asia*, 84 ; *Rapid*, *Medca*, St.V., and *Confiance*, St.V. April 20th : sd., *Barham*, and *Tribune*, for Smyrna. May 20th : arr., *Volage*, from Constantinople ; rem., *Caledonia*, 120, bearing the flag of Adm. Sir Josias Rowley, Bart., G.C.M.G., K.C.B. ; *Ceylon*, with the flag of Rear-Admiral Sir Thomas Briggs, G.C.M.G. ; *Asia*, 84 ; *Vanguard*, 80 ; *Russell*, 74 ; *Rapid*, 10 ; *Nautilus*, 10, cutter ; *Hind*, St.V. of war ; *Medca*, St. ; *Confiance* ; steam-packets *Firefly*, *Spitfire*, and *Volcano*, and the Neapolitan Government steamer *Veloce*.

PANAMA.—13th Feb. : rem., *Sulphur*, Com. E. Belcher.

PASSAGES.—May 21st : rem. *North Star* ; *Tweed* ; *Phoenix*, St.V. ; *Columbia*, St.V.

RIO-JANEIRO.—Feb. 28th : sd., for Pacific, *Cleopatra*, 26 ; rem., *Dublin*.

SAN SEBASTIAN.—May 21 : rem., *Salamander*, St.V., *Royalist*.

SMYRNA.—April 27th : arr., *Tribune*, Capt. J. Tomkinson, from Malta.

SYDNEY.—27th Dec. : arr., *Victor*, from South Sea Islands. 2 Feb. : sd. for Swan River.

TRINCOMALEE.—7th Jan. : arr., *Zebra* 18.

TRINIDAD.—April 1st : arr., *Griffon*, from Grenada.

TUNIS.—3d April, rem., *Bellerophon*.

THE WHALING SHIPS.

THE following letter to the Editor of the *Shipping Gazette*, announces the return of one of the two whalers left ; the other, the *Swan*, of Hull, we much fear will be heard of no more :—

“ Sligo, June 14, 1837.

“ Sir,—Aware of the anxiety there must be of obtaining the earliest information respecting the missing whalers, we hasten to inform you of the arrival in this port of the ship *Advice*, Captain Deuchars, of Dundee ; she got in with the assistance of a pilot and boat's crew, picked up about fifteen miles west of this port, after post-hour yesterday. We

at the same time regret to inform you, that, out of fifty-nine hands, including ten of the crew of the *Thomas*, (lost in the ice,) only seven poor fellows remain living, three of whom were sent to the hospital immediately on arrival of the ship, apparently at death's door; however, it is the opinion of the medical men attending the hospital, that they will, by proper treatment, recover. We give you the names of the survivors. The *Advice* has only two fish, about twenty tons. She left the ice on the 17th March, and fell in about twelve days ago with the ship *Grace*, of Liverpool, in lat. 51° 52' N., and long. 20° W., bound to Glasgow, from Virginia, and got two men from her, who have left the *Advice* here. Captain Deuchars wrote to his owners by the *Grace*, which vessel, we presume, is arrived by this time. The *Advice* is leaky, has lost some sails, and two of her boats.

Names of the Survivors.—Captain Deuchars, of the *Advice*; James Glass, doctor, ditto; William Barry, in hospital, ditto; Wm. Hutchinson, in hospital, ditto; Alexander Deuchars, ditto; Captain Davidson, of the *Thomas*; Alexander Baird, doctor, in hospital, ditto.

“We remain, Sir, your obedient servants,
“THOMAS HUDSON, and Co.”

The following is an extract from the letter received at Lloyd's from their agent at Sligo, dated the 14th of June:—

“The *Advice*, from Davis Straits to Dundee, arrived in this harbour last night in a deplorable state. Out of a crew of forty-seven which sailed from Dundee, five only have arrived with her, two of whom have been sent to the hospital. The *Advice* took on board from the *Thomas*, of Dundee, twelve persons, including the master and the surgeon, all of whom died, except the two latter, and the last in the hospital. There is no doubt the *Advice* would have become a total loss, had it not been that two seamen volunteered to go on board from a vessel bound from Liverpool to America, at a time when the master, officers, and remainder of the crew, had made up their minds to abandon her, but they were deterred from doing so by this timely assistance.”

ARCTIC LAND EXPEDITION.—A meeting of the subscribers to the fund for sending out Captain Back in search of Captain Ross to the frozen regions, took place yesterday at the rooms of the Royal Geographical Society in Regent Street, Sir George Cockburn, bart., in the chair, for the purpose of appropriating the residue of the subscriptions. The chairman stated that the cause of the delay in calling a public meeting before had been, that the committee were previously waiting for the accounts due to the Hudson's Bay Company by the expedition. This had since been liberally foregone, as also the amount of £158 due to them for provisions, and other necessaries. A balance of £612 still remained in the hands of the trustees, which it was proposed partly to apply to pieces of plate to be presented to Captains Back, James Clark Ross, and Maconochie. For the former it was proposed to award the sum of £150 on account of his being more directly the servant of the subscribers, and to the two latter £100 each, that to Captain Maconochie on account of his zealous services as secretary to the fund. The balance it was also proposed to present to the Seamen's Home, an

institution of great merit, and to whose funds it would be of great service. Since coming into the room, a paper had been put into his hand, signed by eighty subscribers, who suggested the presentation of plate to Captains Back and Ross, and that the residue should be applied to the relief of the families of the crews of the distressed whalers, for whom, however, a very adequate subscription had been raised at the Mansion-house. The several proposals of the committee were agreed to, and Sir F. Booth, Captain Bowles, R.N., and Messrs. Baillie and Spence, were appointed a committee for carrying them into effect. Thanks were also voted to the governor and directors of the Hudson's Bay Company, to Captain Maconochie, the Secretary, and the Chairman, after which the association dissolved.

STEAM-BOAT ACCIDENT AT HULL.

AN accident of a terrific nature, by which many lives were lost, took place lately at Hull. We gather the following particulars of it from the *Shipping Gazette*, by which our readers will perceive that it arose principally from want of water in the boiler. A competition was going forward, large fires had been made, and the water in the boiler was reduced so much as to produce the dreadful explosion which took place:—

Hull, June 7.—This morning, at six o'clock, at the moment when the Union steam-boat from hence was about to sail for Gainsborough, owing to some neglect, the boiler burst, and the packet being loaded on deck with passengers, (about 120,) the mischief done, and loss of life, have been dreadful. Several bodies were carried over the pier into the Humber; a fishing-smack picked up one body, and saw two floating down at a short distance, apparently bodies of females. One person was carried into the air a height of some sixty feet, and came down on the roof of Mr. Westerdale's mast manufactory, which is seventy to eighty yards from the place where the packet lay, and is a building forty feet high. The safety-valve was blown against the office of the York packet, (a wooden shed,) about one hundred yards from the spot, with such force as to destroy one side of it.

Mr. Lewis, one of the owners of the Union, who visited her before the explosion, deposed as follows:—I observed the fire-doors, four in number, to be open. I tried the "gauge-taps," which are placed in the boiler to ascertain the height of the water. The first emitted nothing but pure steam. There was no peculiar colour or smell about that steam. The second let out water. When I had turned it, I could not get it stopped; after one effort, I desisted, being afraid of scalding myself. The engineer, Joseph Gamble, came down immediately after me. I said to him, "Joe, what's the matter with this tap?" He said, "It's rather slack," and stopped it immediately. I am certain it was water which came out of the second tap, it flowed so long—I dare say a minute and a half. There was no index to the Union's boiler that I am aware of. I could not be certain, whether the boiler rested perpendicularly in the vessel or not. The vessel was what is called 'tender,' and about a fortnight ago, I ordered some boards to be placed between the funnels and the boiler, to preserve the boiler in its proper place. When the engineer had stopped the tap, I was

looking round to see how the fires burned. The boy was raking a fire : the engineer said to him, 'Let that fire alone,' and ran up stairs. I was then going towards the ladder, and was about two feet from the boiler, when I received a blow which drove me towards the ladder, and stunned me. I remembered no more until I found myself upon deck, in the midst of other sufferers.

"The evidence of Capt. Waterland, who was lying seriously ill in an adjoining room, was also taken. He deposed—I am master of the steam-packet Union. I slept on board on Monday night. I got up about five o'clock yesterday morning. It is usual to have the boilers filled in a morning before we start. The men were pumping to fill them when I got up. I was not down in the engine-room. Between six and half-past, I observed the safety-valve. I was on the pier about a quarter past six o'clock, standing near the Union, when one of the men called to me, and said that he fancied something was wrong with the boiler. I went on board, and asked the engineer, Joseph, if it was the case? He said, "No." I then asked him if the weights were off the valve, and he said, "Oh yes." I then went to the valve, and lifted up the weight to see if the spindle was at liberty, and it was so, and steam escaped. Steam also escaped while the weight was on. Everything was correct, according to my opinion. I then went below to see if there was any one who wanted to go on shore, and had not been below two minutes when the explosion took place. I have had occasion to find fault with the present engineer three or four times for putting too much weight on the safety-valve. I had spoken to him that morning, and told him I always objected to having two weights on before starting; he said there was only one: I went to see, and found it was so. The Spindle sometimes corrodes and sticks fast, which was the reason I examined it—it was perfectly free.

"James Overton deposed—I am an engine and boiler-maker at Hull. I knew the boiler of the Union steam-boat. I have not seen it these two months; it was in perfectly good condition for ordinary purposes when I last saw it; it would bear 10lbs. pressure per square inch; it was adjusted to work at $5\frac{1}{4}$ lbs. or $5\frac{1}{2}$ lbs. per square inch, but was capable of bearing 10lbs. The adjustment was made by means of two weights in this instance, an internal one, and an external one—the internal weight was about 3lbs.; the internal and external weights together made a pressure of $5\frac{1}{4}$ lbs. per square inch, and the internal weight is immediately on the valve—the external weight upon an unequal lever of from four to one. The internal weight can be raised at pleasure, but when left alone, acts of itself: any additional weight must be applied to the lever, and in no other way will it take effect. The external weight was about 7lbs., creating, together with the internal one, an aggregate pressure of $5\frac{1}{4}$ lbs. per inch. In case 5lbs. additional were placed upon that lever, it would make about 8lbs. per square inch pressure instead of $5\frac{1}{4}$ lbs. The engine would bear working at 10lbs. per square inch, but I should prefer working it at 8lbs. The boiler has not been worked six months—it has been made almost twelve months; it was parted with by its first owners, because it did not generate steam so fast as some, but in regard of strength it was superior. Its thickness was 7-16ths of an inch. Marine-boilers are

usually made 5-16ths of an inch in thickness—some are 4-16ths; a 5-16th boiler would bear a pressure of 50lbs. per square inch, but I should not like to work in a vessel of that kind on such a pressure. I believe that the boiler in question, supposing it to be perfect, which I presume it is, would bear working at a pressure of 40lbs. per inch. I have not examined the boiler since the explosion, but it could not have defects, in case there were no original ones—it had not had the work to do it. I have known thicker boiler-plates than these rent, but I never knew perfect plates of this strength rent by steam; the prime cause of this explosion I believe to be insufficient supply of water; if the boiler-fires were acting, and a deficiency of water, the steam would be converted into another element,—gas, which would not be inflammable of itself, as created there; but, if the boiler, particularly the top part of the flues, became red hot, in such a state of things the safety-valve would lose both its power and its name—it would be no safety-valve against gas, although it were against steam. The valve being lifted up would admit atmospheric air, which, coming in contact with the gas, would make the gas inflammable, which thus coming in contact with the red-hot iron would explode. There might be the appearance of steam escaping from the safety-valve,—it would not be steam, but vapour; on lifting the safety-valve, I think very little steam would be seen to escape there—the waste steam-pipes being conveyed by me over the top of the boiler, and let out at the vessel's side near the water's edge—that it might not annoy the passengers—the steam would thus escape near the paddle-wheel; the escape of steam would be scarcely perceptible, the greater part being condensed into water, but it would make a great noise in thus changing its nature. If steam escaped from the safety-valve on being lifted, that would be no criterion how long it would take from that time until the whole contents of the boiler should be converted into steam, and from that into gas. The lowest gage tap was seven inches above the tops of the flues, the second nine; there were only four gage taps, two on each side, and two sluice taps, for cleansing the boilers, one on each side. The gage taps are nearly in a vertical line. If, five minutes before this explosion, water came out of the lower gage taps, and supposing the vessel to sit evenly upon the water, such explosion could not have taken place for want of water, if the vessel was on an even keel, because no change of steam into gas could have taken place in that time. It is my opinion, this explosion was not caused by steam at all. No explosion of a boiler could take place from the breaking of a stay inside the boiler; it would allow the steam to bulge the boiler out, but it could not burst it; five times the working pressure would not burst the boiler, but only bulge the plates. If the lower tap were left open for five minutes, and the water allowed to escape, that would not produce an explosion, because it would leave at least seven inches of water in the boiler above the tops of the flues, supposing the vessel to be on an even keel. I think there would be no warning noise in an explosion of gas. My opinion is, this explosion has taken place from the same cause as that of the Graham, which vessel came out of Grimsby with too short a supply of water, and stopped alongside the United Kingdom before the boilers had got replenished.

Termination of the Inquest—(From the York Chronicle.)—The

coroner and jury who adjourned on Saturday, again assembled on Wednesday afternoon, and proceeded with the examination of witnesses, after which the coroner, having summed up the evidence, the jury returned a verdict of "Manslaughter against the engineer, Joseph Gamble," who is committed to await his trial at the ensuing York Assizes.

STEAM-BOAT ACCIDENTS.

To the Editor of the Nautical Magazine.

London, June 9, 1837.

SIR,—The melancholy accident which has been reported in the papers of this morning, as having occurred at Hull, by the bursting of the boiler of the Union steam-vessel, and by which so many lives have been sacrificed must have awakened the public sympathies and fears.

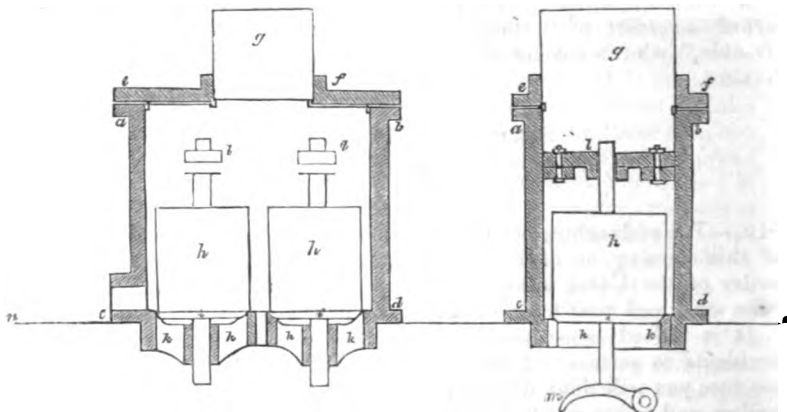
It is indeed lamentable at this period of steam-navigation, that accidents so serious, yet so simply prevented, should occur. And I am sure you will think with me, that engine-makers who construct their boilers and safety-apparatus so as to place the loading of the latter at the option of an ignorant fool-hardy engine-tender or his fireman, is responsible for the loss of life occasioned.

That there are a number of vessels in this country having the safety-valves of their boilers exposed and accessible during the passage to the engine-man and his mates, is beyond contradiction; and it is also equally notorious that in running with other vessels it is the practice to increase the safety-valve, at whatever hazard, for a silly competition of speed. Not a few so constructed enter this river; and it is within the writer's knowledge to state some scandalous practices adopted to urge the speed of the vessel on such occasions, but it would be thought invidious to name them. I trust, however, the sad catastrophe of the Union, and the notice now given, will lead the parties connected with these vessels to adopt immediate means of altering them, unless they wish to be exposed.

In 1817 this matter was brought before a committee of the House of Commons, in consequence of a similar accident at Norwich, when a few individuals were examined, and some fuss made about the safety-valves being placed under lock and key; while there existed for years previous, and at a very early period of steam-navigation, a more simple and effectual mode, adopted by Boulton and Watt, in the construction of their safety-valves, to prevent their being accessible on the passage, or receiving any additional weight, and which is now very generally followed.

For the information of your readers, I annex this sketch of the manner of their construction, which is simple, and will be readily understood: *a, b, c, d*, are sections of the safety-chest in opposite directions; *e, f*, its cover; *g*, waste steam-pipe, equal in area to both valves; *h*, weight; *i*, valves, one of the weights being something less than the other to rise earlier; *k*, seats of valves, made of brass, as also the stems and guides *l*, to prevent corrosion, or the possibility of their sticking; *m*, lever for lifting the valves at pleasure; *n, o*, line of top of steam-box, or top of boiler. From the above, it will, I think, be evident, that these valves cannot be got at without unscrewing the

cover, and removing it along with the waste steam-pipe, an operation of some time and labour, even when the steam is down, and boiler



cold, and still more so when it is up. Independent of this, the chest is made only sufficient in height and width, to allow the rise of the valves with their weights, and afford an area round them, equal to that of the opening of the seats of the valves; consequently, there is no room for additional weight beyond that fixed by the makers, which never exceeds four pounds, but is more generally three pounds per square inch.

Should you consider this worthy of insertion in your widely circulating magazine, it may have the effect of calling the attention of parties concerned in steam-navigation, to adopt the means pointed out of ensuring safety from similar accidents on board their vessels, and establish confidence in a mode of conveyance so beneficial to the public.

I remain, Sir, &c.,

ARCHIMEDES.

COLLIER'S SAFETY VALVES.

9, Maddox Street, Hanover Square, June 2, 1837.

SIR,—In consequence of the calamity which the bursting of the above steam-boiler occasioned, and having heard that there existed a remedy for the evil so justly and loudly complained of, I was induced on Friday last to visit the manufactory of Stephens and Co., at Globe Dock Stairs, Rotherhithe, in company with Sir John Ross, R.N., to see an experiment performed on Collier's patent steam-boiler, to which is attached a safety or breathing pipe, which, in my opinion, and in that of Sir John Ross, appeared to afford a perfect security against the possibility of explosion; if the opinion be confirmed by other professional and practical men, it is, I conceive, the bounden duty of the legislature to compel all steam-vessels in the use of it, and thus prevent a recurrence of the shocking calamity that has recently taken place at Hull.

Possessing a practical knowledge of chemistry, I examined, and noted down the result of the experiment, which I understand has been frequently tried in the presence, and to the entire satisfaction, of several civil engineers, and I send you a copy of my notes.

Experiment.—To shew the perfection of the safety-pipe as the means of preventing the bursting of steam-boilers, the inventor, Mr. Collier, forcibly held down the safety-valve with an iron lever, until the steam pressure was raised to $6\frac{3}{4}$ lbs. pinch, at which moment the water rushed up the safety-pipe, (the altitude of which from the water line in the boiler was twelve feet six inches,) descended the funnel, extinguished the fire, and thus prevented the boiler exploding by any further generation of steam or gas.

I am Sir, yours, most obediently,
W. H. JUDD.

SHIPWRECKED AND DISTRESSED SAILORS' ASYLUM. Under the patronage of her Royal Highness the Duchess of Kent, her Royal Highness the Princess Victoria, the Right Reverend the Lord Bishop of Durham, the Right Reverend the Lord Bishop of Llandaff, the Right Hon. the Vice Chancellor, and Admiral Sir P. C. Durham, G.C.B. M.P.

The first annual public meeting of the friends and supporters of this Institution, was held on Thursday, the 8th ult., in the lower room, Exeter Hall. The attendance was not very numerous, and we observed with regret, that very few gentlemen connected with the mercantile interests took a part in the proceedings, which were conducted principally by officers of the Royal Navy.

Sir E. Codrington, G.C.B. M.P., the president of the Institution, having been moved to the chair, said, that he well knew there were many gentlemen present far more competent, than he to discharge the duties of the situation which had been just imposed upon him; but however arduous those duties, and however great his incompetence, he would with pleasure use his utmost endeavours to discharge them to the best of his ability, and would at all times feel the greatest satisfaction in being in any way enabled to advance the interests of the Institution, were it even for no other reason than through the respect which he entertained for the illustrious lady, who patronized it—her Royal Highness the Duchess of Kent. That lady had been originally not only unacquainted with naval affairs, but even averse to them; but considering the protection of the shipping interests of this country, as one of the most important duties, that would at a future day devolve on her royal daughter, she had taken means to become familiar with the details of maritime life, that she may be the better able to instruct her in every thing connected with her future station, as the monarch of the greatest commercial nation in the universe. He had no doubt but that these kingdoms would at another day reap the benefits of these instructions, and that they would, under her auspices, enjoy such a career of glory and happiness, as would recal to the recollection of Britons the days of their ever memorable Virgin Queen. The object of the present meeting was to raise funds for the purpose of carrying on this charitable institution, which was, in importance,

equal to, if not greater than, any other similar establishment of the present day. They were all familiar with the great benefits conferred by the hospital ship, Dreadnought, on seamen of all creeds and nations, without distinction. This asylum was conducted on the same liberal principles: to be a seaman, and in distress, was the only qualification requisite to secure admission. Let a man but show that he was a sailor, and stood in need of assistance, and he was at once relieved. But the asylum was not confined to this class of distressed seamen alone, but was intended also to save from being plundered, those men who, on landing at our ports, and receiving the wages of their voyage, would bring their chests and bedding to the asylum. At the present day, as soon as these men landed on our shores, they were beset by those odious wretches, who made it a trade to live by imposing on their simplicity and openheartedness, against whose wiles all their gallantry could not save them, and who in a few days robbed them of the fruits of years of labour, danger, and enterprize. It was one of the objects of the society to protect those poor friendless seamen from those land-sharks, by providing them with a large mess-room and a dormitory, each capable of accommodating 150 men, to which they could bring their sea-chests, bedding, &c., and maintain themselves, and be allowed every fair indulgence. By these means, when they would go to sea again, they would have a supply of bedding, and clothing, and some money at command. It was the duty of this nation, to watch over the interests of its seamen, as its prosperity was so closely bound up with the nature of their character. There was one great hardship on the sailor, to which he would particularly refer, and which was, *that if he were engaged to work a vessel to the East Indies, or elsewhere, and back again, and if she were wrecked, by any cause whatsoever, he lost not only his clothing and sea-stores, but also all claim for wages, no matter how blameless his conduct may have been.* Hence it happened that many excellent men were thrown destitute on our shores, and when he informed the meeting and particularly the ladies, that one of the objects of the institution was to save these poor fellows from the miseries thus inflicted on them in consequence of circumstances, over which they could have no control, he was confident that his appeal to their benevolence would not be wholly unsuccessful.

Captain H. M. Marshall, R.N., the honorary secretary, then read the report of the Managing House Committee. The committee congratulated the friends of the establishment, that by the funds placed at their disposal, they had been enabled, during the last winter, to keep open the doors of the institution which would otherwise have been closed. In recording their success, they could not conceal that they had many difficulties to encounter in taking on themselves, on the first of July, 1836, the charge of the institution, which under a different name and management had lost many of its most powerful supporters; but considering that it would be a reproach to this nation, were the doors of the asylum finally closed against the shipwrecked and distressed mariner, they determined, notwithstanding its impoverished condition, to make an effort, that the food and shelter usually afforded, should not be withheld from that class of men, who had the strongest claims on the benevolence of the British public. The appeals which they had

made through the daily, and periodical journals, had been nobly responded to; and they hoped, that as they had restored the institution to the confidence of the public, that the examples to liberality set by the Worshipful Companies of Grocers, Mercers, Drapers, and Apothecaries, and also by several influential individuals, would be followed to an extent, to enable them to carry out the plans they had in view, for the benefit of seamen generally.

The objects of the institution were two-fold—First, To afford a place of refuge to all shipwrecked and distressed seamen, and supply clothing to such as may have been wrecked, and lost their all. And secondly, To afford lodging, free of expense, to seamen, who would bring their chest and bedding to the asylum, where a list is kept of all vessels fitting out in the several docks, captains' names, and destination, and who would prefer such accommodation to the haunts of vice and plunder which awaited them on their arrival in port; for which indulgence the only payment required would be a trifling sum for firing, and the use of cooking utensils, as such men should maintain themselves. The asylum was like "The Dreadnought Seaman's Hospital Ship," open to receive the distressed of every clime, creed, and country, without distinction. It contained a mess-room capable of accommodating from ninety to one hundred men, and a large dormitory with beams for swinging hammocks, in which 150 men could lodge nightly. The committee were anxious to enlarge the building, by erecting a pay-office, savings' bank, and other offices, of which they were greatly in need; and also to be enabled to receive a greater number of seamen, who would board themselves, distinct from the distressed sailors; for which purposes they anxiously hoped for the co-operation of the bankers, merchants, and ship-owners, throughout the British dominions.

There was a chapel attached to the asylum, in which the inmates regularly attended morning and evening to sing their Maker's praise. Sittings were also secured for them in Trinity Chapel, Cannon-street Road, in connection with the Church of England, where they regularly attended morning and evening on the sabbath. The exertions of the society had already reduced the number of the sad spectacles of begging seamen, for whom employment, or medical advice and assistance, if necessary, were immediately procured. There were many applicants for relief at the asylum, who did not come within the objects for whom it was intended. These were old ship-masters and mates, who, being too old to obtain employment, and having outlived their friends, had refuge only in a workhouse; and also aged foreigners, who, having been many years in the Royal Navy and merchant service, had become alienated from their native country, and were reduced to the most abject destitution. The committee gratefully acknowledge a present of ten pounds' worth of testaments from a lady, twenty-four prayer-books and twelve homilies from the Prayer-book and Homily Society, twelve bibles from the Merchant Seamen's Bible Society, and clothing from Lieut. Becher, R.N., and Mrs. Bevan, of Norwich. Since the opening of the institution in November, 1829, 39,335 nights' lodgings had been granted; and since the 1st of July, 1836, 7,639 meals and 3,541 nights' lodgings had been granted, at an expense of only £245 15s. 6d., including all charges, the vouchers for which

were submitted to a quarterly meeting of the subscribers, invited by public advertisements to attend for that purpose. The gross income during the same period was £353 12s. 3d., thus leaving a balance of £107 16s. 9d. to the credit of the institution. The committee had received from the Company of Mercers an annual subscription of £21; of Apothecaries, an annual subscription also of £10 10s.; from the Grocers' Company, a donation of £50; from the Drapers, £50; from Admiral Sir Isaac Coffin, Bart., K.C.H., £10 10s.; T. B. Heath, Esq., £5; Miss Codrington, and her friends, £50; Lord Yarborough, £5; and Captain Hope, R.N., £10. The committee deemed it an act of justice to state, that they were greatly indebted to that most excellent man, the late SIMON COCK, Esq., for the hints and assistance he had given them.

The Secretary had received letters from the Lord Bishop of Durham, the Lord Bishop of Llandaff, Vice-Admiral Sir C. Adam, K.C.B., M.P.; G. R. Robinson, Esq., M.P., Chairman at Lloyd's; Alderman Thompson, M.P.; Alderman Pirie; G. F. Young, Esq., M.P.; Capt. Alsager, M.P.; and W. Clay, Esq., M.P.; apologizing for not being able to attend the meeting.

Sir T. Troubridge, Bart., M.P., moved the first resolution—"That the report be received and printed." Having been a sailor himself, he felt great pleasure in bringing the subject of the relief of British seamen before the public. It was unnecessary for him to dwell on their merits, as they were already too well known, and too highly appreciated. But, much as they were esteemed, and great as were the services which they had rendered to this country, it was astonishing what a degree of apathy prevailed among the public, as to relieving their distresses. No class of men were more liable to all the alterations of good and bad fortune than they; and even were they always successful in their enterprizes, it did not secure them against the accidents of poverty, as the very hardy and hazardous nature of their employment tended to make them careless and uncalculating. The very indifference to danger, and disregard of all personal considerations, which make them the unconquerable guardians of the nation's rights and liberties in the hour of danger, unfitted them for attending to their own private affairs; and therefore it was the duty of the nation that profited by their gallant recklessness, to attend to their interests, as they could not attend to them themselves. At the present day more particularly, was it necessary to look to the shipwrecked and distressed seamen, as by the late poor law amendment act the parish authorities could not afford them that relief which they used formerly to bestow. He would therefore urge on the meeting the propriety of supporting this institution, which had for its objects the protecting of these poor men from the miseries that so often befel them, and hoped the day was arrived when the sailors' comforts would be attended to in this country, to the prosperity of which they so mainly contributed.

R. Prigham, Esq., M.P., in seconding the resolution, deemed it the imperative duty of the people of these kingdoms, to look to the interests of the seamen, on whom alone they could rely for protection in the hour of danger. The seamen of the Royal Navy were always considered the noblest of warriors; but it should not be forgotten that

the merchant service was the nursery, from which they were taken into the royal vessels, according as they were wanted. He would therefore call on all who loved the naval glory of Britain, to contribute to the funds of this institution, which of all others seemed the best calculated to promote the moral and religious interests of the seaman.

J. S. Buckingham, Esq., M.P., supported the resolution—having known by experience the severities of a sea-faring life, he was ever ready to advocate the cause of the seaman; he was surprised that this nation did not pay greater attention to the comforts of its seamen. Its naval force was its only protection against foreign foes: and were that force destroyed to-morrow, Britain's ruin would be instant and inevitable. It was the best guardian of the nation's rights and liberties; and what was most consolatory of all, was, that though it was the best protection of those rights, it could never by any combination of circumstances be employed to destroy them. He was astonished that the people of this great metropolis did not come forward in greater numbers to support this Institution: but he was sure that as soon as the real state of the shipwrecked and distressed seamen would be brought before their views, that they would contribute as liberally to the funds of this Institution, as they did to those of any other, as there was none more deserving of their confidence, patronage, and support.

[As we are desirous of noticing at length the proceedings of this meeting, and we cannot now devote space to them, we have reserved the remainder for our next number.]

PARLIAMENTARY REPORTS.—“The Rev. James Williams, secretary to the Anglesey Branch of the ‘Royal National Institution for the Preservation of Life from Shipwreck,’ begs to call the attention of the Editor of the Nautical Magazine to the very extraordinary misstatement which has got into the Report of the Parliamentary Commission on Shipwrecks, wherein it is stated, (as copied into the Nautical,)—‘In the present year, 1836, no less than thirty-nine vessels were seen on shore in Holyhead Bay at one time, twenty of which were totally lost, with all their crews on board.’ Not one word of the above is true. The only vessel even stranded, during the whole year, was the foreign brig ‘Constant,’ alluded to in our report.”—*Llanfairing Mornwy, Anglesey, 26th April, 1837.*

P.S. It is some years (seven or eight, or more) since there has been any wreck with loss of life in Holyhead Bay.

[We have received the foregoing, with the report for 1836, of the proceedings of the institution referred to, and to which we shall take occasion to allude in another number. In the mean time we must express our regret that such important documents as parliamentary reports should be open to such attacks as these. It bespeaks little for their veracity, and shakes that confidence which is so imposingly claimed for them. The passage referred to will be found in p. 594 of our volume for 1835, and in p. vii. of the REPORT.]

ROYAL YACHT SQUADRON.—Four cups, value £50 each, are ordered to be sailed for at Cowes, in the month of August; one to be sailed for by yachts of the seventh class, above 115 tons, on Monday, August 14: one cup on Wednesday, 16th of August, by yachts of the fourth class, from fifty and under seventy tons; his Majesty's cup, value 100 guineas, to be sailed for on the King's birth-day, Monday, August 21st, by yachts of the second class, from forty and under forty-five tons; one cup on Wednesday, the 23d August, by yachts of the fifth class, from seventy and under ninety tons; and one on Saturday, the 26th of August, by yachts of the third class, from forty-five and under fifty-five tons.

The Royal Yacht Squadron annual ball will take place at the Squadron House, Cowes, on Monday, August 14th, in honour of her Majesty's birth-day. A grand display of fireworks from the parade, West Cowes, on the evening of the 21st of August.

LOSS OF BRITISH SHIPPING.—So deficient is the construction of our ships, that the average annual loss, taking the period from 1793 to 1829, is 557 vessels; but of late years the loss has been increasing in an alarming degree—no fewer than 1068 having, in the year 1829, been wrecked, foundered, upset, or driven ashore. It appears, in fact, that our merchant ships are the worst in the world, and that they have been rapidly declining of late years. The chief cause of this is the system of insurance, combined with classifying the ships at Lloyd's. After a certain length of time, a ship ceases to be in the first class A 1, whatever may be her strength. The merchant, finding the rate of insurance is lowest on new ships, of course prefers them. The ship-owner is thus compelled to have not good, but *new* ships; he, like the merchant, protects himself against the risk of loss from their insufficiency, by insurance: and hence it is only cheap ships that are in demand. A merchant-ship, of 1,000 tons, is only three inches thick in the bottom; while a ship of the Royal Navy, of equal tonnage, is twenty-one inches thick. Many merchant ships are so weak, even when new, that they cannot bear the weight of their own cargoes, unless when afloat; and hence the enormous loss of that kind of shipping, compared with that of the Royal Navy, and the vessels of the East India Company, neither of which are insured. In 1833, 800 merchant ships were lost, and not one of the Royal Navy. Although ship-builders, ship-owners, merchants, and insurers, may all contrive to carry on a lucrative business, the loss of property, amounting to about three millions a-year, ultimately falls on the public, in the form of an increased price of the commodities carried by sea. The loss of life by this state of matters is so great, that Professor Faraday lately mentioned, at the Royal Society, that of all classes of men, sailors are the shortest lived.—*Tait's Magazine*, April, 1837.

We have seen other reasons given for the use of bad vessels; one in particular is so curious that it deserves notice. When a crazy vessel is damaged, it goes at once to the bottom, or is knocked in pieces, and there is no trouble whatever in recovering the value insured; but when a good vessel is damaged, and not totally wrecked, it can be repaired; and there is then a vast deal of trouble, perhaps litigation, in recovering the actual amount of loss incurred. We have an instance

in point within our own experience. Some time ago we sent a large quantity of goods to a distant colony, and the vessel carrying them being partially wrecked, our goods were partially damaged. When we shall receive their value as insured, or payment for the injury done them, we cannot tell. It is a troublesome business. Had the ship gone to the bottom of the sea, instead of hanging together till it got into port, we should long ere now have received the value for which we effected an insurance. There could have been no difficulty in the matter. "But why not compel the underwriter to pay the injury, and be done with it?" we hear some one say. In other words, "Why not ruin yourselves with a law-plea in order to get justice?" We prefer putting up with the loss or the delay, as the case may be. And there closes the argument. There is only one way of putting an end to these absurdities—let a proper maritime code of law be established, which would settle all disputes about insurance off hand, without either trouble or expense.—*Chambers' Journal.*

REPORT OF MR. JOHN FOX, TO THE LORDS COMMISSIONERS OF THE ADMIRALTY, ON MR. HALL'S CONDENSERS.

Basford, May 6th, 1835.

SIR,—I have the honour to acknowledge the receipt of your letter of the 4th instant. I have worked an engine with Mr. Hall's patent condenser upwards of three years; the engine was altered from the old principle by Mr. Hall, and I can with great confidence state, that I find a considerable increase of power, and saving of fuel. I consider, from experiments which I have made, that the power is increased nearly a fourth, and the consumption of coal diminished more than a fourth—and in this statement I am speaking rather under than above the fact. The greatest advantage, I think, arises from the saving of the boiler, which has never been scaled during the whole period, and is now perfectly clean; previously the deposit was obliged to be removed from the boiler by hammering, every three months; now the water is occasionally let out of the boiler, perhaps, on an average, once in six months, but I have never had occasion to do more than sweep the bottom of the boiler, without the necessity of using any force to remove any deposit. I shall be happy to give you any further information respecting an improvement which I consider, from practical experience of its advantages, of great importance.

I have the honour to be, Sir, your obedient servant,

(Signed)

JOHN FOX.

To Capt. Gipps, R.N., &c. &c.

ROYAL GEOGRAPHICAL SOCIETY.—The anniversary meeting was held on 15th May, at its rooms in Regent-street, Sir John Barrow, bart., F.R.S. in the chair.

The President read the report of the council, which congratulated the society on the steady increase in the number of its members, the flourishing state of its finances, and the interest felt by the public in the promotion and encouragement of geographical research. Thirty-nine new members had been elected during the past year; and the society now consists of 545, exclusive of foreign, honorary, and cor-

responding members. It had, however, to lament the loss of many valuable members, and especially one whose melancholy death in northern Africa must be fresh in the remembrance of every member of the society. Young, zealous, and enterprising, this traveller had surmounted all the difficulties opposed to him, in Morocco, Suez, Wadnoon, and had even traversed half the desert which separated him from Timbuctoo, when he fell a victim to the treachery of the faithless Arabs; and the name of Davidson must now be added to those of Horneman, Park, Ledyard, Burckhardt, Belzoni, Laing, Clapperton, and Lander, as the most eminent of those who have sacrificed their lives in the cause of African discovery. (Sir John Barrow, who was evidently much affected whilst pronouncing this eulogium on the deceased, pointed to the busts of the illustrious traveller and his native companion, Aben Beker, which were placed on the table.) Amongst other losses were, William Marsden, Esq., a liberal donor to the society; Captain James Horsburgh, hydrographer to the Hon. East India Company, to whom this nation is also deeply indebted for its present knowledge of all the maritime nations of the eastern world; and two distinguished foreign members, Professor Hoffman, known for his great map of North Western Germany, and Don Ignacio Iberri, a General of Engineers in the Mexican service. The state of the society's finances was satisfactory, although the expenditure for the past year had been considerable, viz., £2,260, of which £490 had been paid towards the expedition into British Guiana, £350 towards that in Southern Africa; and it was gratifying to add that no necessity had existed for touching the capital stock invested in the funds. In addition to the journals, the society had also published, at its own expense, and for the members, a translation of *Graah's Danish Discoveries*, on the east coast of Greenland, and a *Grammar of the Cree Language*. The royal gold medal for 1836, presented by his Majesty, had been awarded by the council to Captain R. Fitzroy, R.N., for his recent survey of the coast of South America, the information acquired having, perhaps, not been exceeded by any circumnavigation or expedition since the time of Cook and Flinders. Other travellers were alluded to, who had distinguished themselves, amongst whom were Lieut. Willstead, Dr. Andrew Smith, Major Mitchell, and Col. Chesney. The expedition under Capt. Back, Schomburgh, and Captain Alexander, and Lieut. Lushington, were particularly noticed. The usual ballot for officers and council having taken place, W. R. Hamilton, Esq., was elected president. A vote of thanks having been passed on Sir John Barrow, and other ordinary business transacted, the meeting adjourned.

HARBOURS OF REFUGE.

To the Editor of the Nautical Magazine.

SIR,—The subject of harbours of Refuge, so important to this naval and commercial nation, and to the maritime commerce of the world, has continued to engage public attention, until the necessity for such asylums in order to lessen the number of awful calamities by shipwreck, involving the loss of human lives, and the melancholy destitution of bereaved widows and orphans, is now universally felt and admitted. And I rejoice to see that a bill has been read a second time in the

House of Commons, for the improvement of Bridlington harbour, although with the unpalatable addition of a passing toll.

The great question for consideration on this subject, is, not so much the cost of constructing such harbours, nor on whom that cost is to devolve, for it is quite evident that the consumer of the articles of maritime trade, must eventually pay the price of such article by whatever expenses the price may be increased, but the only question is, in what situations on the coast can such harbours be constructed, or the existing ones improved, so as to secure *free ingress*, and *egress at all times*, and be free from bar, or any exterior or interior injurious accumulation; for if the first of those objects cannot be obtained, and the latter prevented, it would be quite useless to attempt an expenditure that would tend to increase, rather than diminish, shipwrecks; or if only one of the objects of an asylum harbour be defeated, i. e., that when the wind comes fair, the detained vessels be unable to get to sea, to proceed on their voyages, no commander would take such a harbour except in a case of dire necessity.

Having referred to the question of bars at the entrance of harbours, a subject hitherto much neglected, and on which much scientific discrepancy has got abroad as to the cause of bars, and the means of reducing or removing them. I beg to offer for the consideration of your readers the following practical observations.

Bars must be the effects of some *cause*; ascertain that cause, remove it, and the effects will cease. This brings me to the question as to what is the cause of bars. I answer, the conflicting action of *effluent currents, or tides, passing into the ocean tide at a right angle from the shore*. This is the sole cause of bars at the mouths of harbours, and wherever there is a back water, or what is termed a scouring power, in operation, there a bar exists; and it is an invariable fact, that whenever attempts have been made to remove bars by increasing the velocity of the natural currents into the ocean, there the bars have also increased in proportion. To these consequences no exception is to be found in the whole globe, and in many cases, harbours have, from the causes alluded to, been *blocked up, and lost!* But if the current or tide be by artificial means conducted into the ocean so as to join the sea tide *at an acute angle, no conflicting action can arise, and then no bar will accumulate*, but whatever silt or other matter be in that case held in suspension by the tides or currents, will be carried away from the harbour's mouth, in the direction of the tidal water of the ocean.

The next invariable rule regarding harbours and bars, is, that where no water passes to sea, *that is*, where there is no river, *no back-water, no scouring-power*, there no exterior conflicting action between the out-passing waters, and the ocean can occur; and therefore no deposit can take place, and no bar can be formed. And this rule prevails, whether the harbour be formed by nature, or be artificially constructed, and has no exception throughout the four-quarters of the world, and of the many harbours of this character, some of them are of the most capacious description, as a reference to the maps of the world will demonstrate, so that nature furnishes us, (as she does in all her works,) with an unerring principle on which she teaches us to construct harbours, so as to prevent the possibility of any formation of bar.

The projectors of the proposed harbour of Refuge at Lowestoft, adopting, it may be truly said, these suggestions of Nature, fearlessly state that if this principle be adhered to as they contemplate, that harbour will possess the essential properties of a refuge harbour, *i. e.*, it will be *accessible* to enter, and depart from, at all times, and be free from any exterior accumulation or bar. In this opinion some of the most experienced nautical and scientific men concur—and an eminent engineer's report on the proposed harbour is confirmatory on the subject.

I am, Sir, your very obedient servant,
NAUTICUS.

SIGNAL LIGHTS FOR SHIPS.

To the Editor of the Nautical Magazine.

SIR,—Seeing in your number for February, a proposal of Captain Evans, of H.M.P. Vixen, for the establishment of signals for vessels passing each other, whether steamers or others,

I beg to state, that more than three years since, I proposed to the Right Hon. Earl of Yarborough, commodore of the R. Y.S., a method of preventing accidents by vessels running foul of each other in the night, which was as follows:—

Vessels to have a light on each bow, a red light when going out of harbour, or down channel, a green light going into harbour or up channel, and a white or common-light when laying to or at anchor.

I also proposed it to the Lords Commissioners of the Admiralty, when they visited Portsmouth yard in October, 1835.

My idea was, that it should be sanctioned by government, and all decked vessels be obliged to adopt it. By inserting the above in your next number, you will oblige,

Your obedient servant,
66, High Street, Portsmouth,
21st Feb., 1837.

GEORGE STEBBING.

CAPTAIN COUCH'S SOLID CHANNELS.

To the Editor of the Nautical Magazine.

Stoke Terrace, Devonport, January 6, 1836.

DEAR SIR,—I hasten to acquaint you that I have seen your Nautical Magazine for this month, and beg to tell you that the "*mechanical construction*" of the "*Patent Solid Channel*" (instead of "*CHOCK*") is misrepresented, (*of course in mistake,*) by saying that the "*lower part*" is "*fayed,*" whereas it goes home to the timbers, and becomes a part of the side, and is appreciated as one of its principal qualities. Again, you say, it is "*bevelled forward,*" it is also "*bevelled at both ends.*" I am glad you have described the "*outrigger plan*" of Captain Frazer, as it clearly shews the advantage of *mine* for getting clear of the wreck of the masts from the bottom, by *cutting the "laniards,"* as it happened in the "*Star ;*" also for "*contact,*" and saving "*boats and crews*" from being caught underneath, which must certainly be the case in the "*Planter,*" for these and many other important and valuable advantages possessed in the "*solid channel.*" I am very glad to see the comparison in your number. I hope you

will see the necessity of correcting the mistake as soon as possible in your next, as it must, in its present character, be hurtful, and completely lead all parties into a serious mistake. The "*Chock*" also, you are aware, is a totally different thing to the "solid channel," and as I have taken out the patent for the "*solist*" instead of "*chock*," I hope you will put it in its proper position. I am, &c.,

J. COUCH.

[We must so far exonerate ourselves as to say, that the description which we give was drawn from Captain Couch's papers. However, notwithstanding its importance, we are quite content to part with the subject, in recording, at particular request, the following opinion of Captain Couch's solid channel.—ED. N.M.]

Turnchapel Yard, Plymouth, February 18th, 1837.

DEAR SIR,—It is with much gratification I can now inform you that the "*Herald*" is about leaving this port, fitted with your Patent "*Solid Safety Channel*," and from the best attention that we applied in its construction, can safely assert, that in it will be found all the valuable and important properties, that ships' "*channels*" require; and I beg distinctly to observe, that from the best information I have obtained, as well as from my own experience, there never was such a "*channel*" ever constructed, containing the important advantages, of getting clear of the "*wreck of the masts*" in storms, (the want of which has been so fatal again,) repelling the "*concussion of the sea*," and thereby in a great measure, preventing vessels being "*dismasted*;"—great strength for "*contact*," becoming a complete "*fender*." Boats protected and their crews. The "*solids*" being so constructed upon the most scientific and mechanical principle, that convinces me, (as it has the most experienced builders throughout Great Britain, from whom you have received the most gratifying and ample testimonials,) that all vessels must derive the greatest additional strength in the *weakest part*, (the *upper frame*,) from your reducing so much destructive iron, and adding a small proportion of the best wood. For the above reasons, (and many more,) that this incomparable and original "*channel*" so clearly proves to possess, I feel called upon to give you this document, and have no doubt, but on its coming into general use, will save much valuable life and property at sea. Its application to the "*Herald*," proves it to be *handsome, light, and economical*, and gives the ship a "*buoyant*" and *beautiful appearance*. Wishing you every success, both for the sake of humanity, and the interests of this great maritime country.

I am, dear Sir,

Yours very faithfully,

THOMAS POPE, Ship-builder.

Capt. Couch, R.N.

H. M. SHIP INCONSTANT.—A lithographic print, by Haghe, from a drawing by Mr. Brierly, has been published, of H.M.S. Inconstant, lying off the dockyard at Woolwich. She is represented with her sails loose, and the whole picture is very happily executed, and well worth the attention of our nautical friends.

ENLARGED SERIES.—NO. 7.—VOL. I.

3 q

Law Proceedings.

ADMIRALTY COURT.—22 FEB. 1837.

(Before Sir John Nichol.)

THE STEADFAST—SALVAGE.

THIS is a suit for salvage, promoted by some men of Harwich against the owners of the vessel the *Steadfast*. It appeared that this vessel, whilst on a voyage from Amsterdam to London, got on the Cliff Rock, off Harwich; that they hailed the boat in which the party promoting this suit were, who agreed, for six guineas, to heave her off. That they began to render every assistance in their power to effect this, but before the services specified were completed, the vessel bumped, and damaged her rudder, so that they found it necessary to get her into harbour; that she was, with great labour, and by the assistance of the boatmen, safely taken into Harwich harbour; and that the tender agreed upon, of six guineas, was offered by the owners of the *Steadfast*, but was refused by the other party, on the grounds that the agreement which had been entered into was, from the circumstances of the case, necessarily annulled, the salvors thinking themselves entitled to a higher reward, for, as they contended, preventing the vessel from being placed in a situation of imminent peril, as she must have been, if she had not gained the harbour. The value of the ship and cargo was rated at £3,500.

The King's Advocate (with whom was Dr. Nichol) appeared on behalf of the owners, and contended that as a settled sum had been agreed upon by both parties, and that as the boatmen had expressed themselves perfectly contented with the sum of six guineas before the accident had occurred, it was not to be expected, because they happened to be in this vessel for one especial purpose, viz., of getting the *Steadfast* off the Cliff Rock, that for the small service which they rendered to place her in port, they should receive more than the money fixed upon. Besides that, it would not be consistent with justice that an agreement of this sort should be broken by the parties, and that the forfeiture of the contract should be connived at by this court, as it assuredly would be if the court awarded a larger sum. The learned advocate argued that the actual services of the boatmen were nearly, if not fully, recompensed by the sum of six guineas; for even granting that all the services which were so much boasted of, had been performed, they could not be considered except as mere acts of pilotage.

Dr. Phillimore (with whom was Dr. Jenner) on behalf of the salvors, argued that the exertions of the salvors had been greatly increased by the knocking off of the rudder, and was of opinion that, without their assistance, the master and crew of the *Steadfast* would have found the greatest difficulty in placing the vessel in port, if they would have been able to effect it, which he himself very much doubted.

The learned Judge declared that, considering all the circumstances of the case, the great exertions of the parties concerned in this suit, and the alacrity and readiness to make themselves useful, which throughout the whole of the occurrence they had displayed, he could not award less than thirty-five guineas, with costs.

THE NICHOLAUS WITZEN—SALVAGE.

This was also a salvage suit. The vessel was proceeding on a voyage from Amsterdam to Surinam, but on the 29th of November last (the day on which the dreadful hurricane was experienced throughout all parts of the kingdom) ran on the Kircher Point, near Portsmouth, having been driven from the Motherbank, and lost her anchors and cables. She had her windlass broken, her false keel knocked off, was making water rapidly, and had a signal of distress flying. The salvors, consisting of Hayes, the pilot, and six men, went out to assist the ship at the imminent peril of their lives, and succeeded in bringing her into a place of safety. It was also pleaded, as an additional merit on the part of the salvors, that they proceeded to the vessel while the flag was flying at Portsmouth—a beacon to all the boats belonging to his Majesty's navy not to put to sea. The value of the ship and cargo was about £3,000, and the gale blowing on a lee-shore, the salvors claimed a higher reward than £20 which was tendered to them.

Dr. Nichol, on behalf of the salvors, submitted that they were entitled to a liberal reward for the services they had rendered to this vessel, having, at the imminent risk of their lives, proceeded to her assistance.

Dr. Phillimore, for the owners of the Dutch vessel, submitted that the tender was ample, as the wind having changed, the ship was placed beyond danger, and pilotage services only were then necessary.

Sir John Nichol said the promptness with which the salvors put out to the assistance of the ship, when others would not venture, was the main ingredient in this case, especially as they had proceeded at the risk of their own lives. The ship had been greatly injured by the hurricanes which had prevailed, and it could not be doubted but that she had been saved by the enterprising pilot and the other salvors. It was an important feature in the case, that the salvors had gone out while the flag was flying at Portsmouth, warning the craft of his Majesty's navy not to go in or out; and it was in evidence, that though his Majesty's ship *Serpent* had been dismasted during the hurricane, that men were not allowed to proceed to her assistance. The Dutch vessel had been brought in by the salvors in a seamanlike manner, and in order to encourage those who went out at the risk of their own lives to assist vessels in distress, he should award eighty guineas to the salvors, the chief pilot taking twenty guineas, and the other six dividing the rest.

PARLIAMENT—MERCHANT SHIPPING.

Mr. BUCKINGHAM having moved the second reading of the Merchant Shipping Regulation Bill,

Mr. P. THOMPSON remarked, that however friendly he might be to the principle of a measure relating to a subject analogous to that which was before the house, he doubted whether it would be advisable to read a bill a second time when it was so faulty in its details as, in his opinion, and he believed the opinion of the house, the present bill was found to be. When the hon. member for Sheffield brought this subject before the house on a former occasion, he (Mr. P. Thompson) recommended him not to enter into minute details. He was sorry that the hon. member had not acted upon that suggestion, for the result was, that he had produced a bill which went to destroy the

whole of the commercial maritime law as it now stood, and to set up a power completely arbitrary. He really thought it hardly worth while for the hon. gentleman to press this bill to a second reading, as it would not come out of committee with a single clause as it now stood. A very expensive marine board was to be established by it, and the bill made this new court supreme, giving it greater powers, too, than the Legislature itself possessed. They were to make laws, and when their code was promulgated in a cheap form, it was to become conclusive. There were other powers given by the bill, so extraordinary, that it would be impossible for the house to grant them, and therefore he thought that the hon. gentleman had better not press his bill. He agreed with him in thinking that some inquiry ought to be made into cases of shipwreck, and also that some examination of the masters of merchant ships should take place: but he did not think that that examination ought to be compulsory. He himself, however, proposed to introduce a clause in the Pilots' Bill, which he should shortly bring before the house, by which he proposed to place the examination of masters, so far as their qualifications as pilots were concerned, under the control of the Trinity-house, and he would suggest whether a voluntary examination of masters might not take place before that body. Powers, however, so extraordinary, were given by this bill, that he conceived that the house would be compromised by assenting to a second reading, and therefore he should be very glad if the hon. gentleman would not proceed with his measure.

Mr. INGRAM remarked, that the right hon. gentleman, while making provision for the examination of masters, had not declared his intention of bringing forward any measure with reference to inquiries into cases of shipwreck, the necessity of which was deeply felt by the country. He had consequently not shown sufficient reasons to induce the house to go into committee.

Mr. TOOKE supported the motion.

Mr. PEASE declared that he had no objection to the second reading of the bill, on the understanding that it should be sent to a committee up stairs. Two or three clauses were invaluable, but the rest of the bill was full of faults of detail.

Mr. HUME highly praised the 13th clause, relating to the institution of an inquiry into cases of shipwreck. Under the present system, ships utterly unseaworthy foundered by hundreds; and a great maritime country like Great Britain ought to guard her sailors against the reckless conduct of owners.

Mr. G. F. YOUNG quite agreed with the right hon. President of the Board of Trade in thinking that two objects of the bill, that relating to inquiry into cases of shipwreck, and that of the examination of masters, required legislation. He asserted, however, that the bill was utterly incapable of being worked out to a beneficial result by any committee whatsoever. To go into committee on it would be to waste the time of the house and to hold out delusive hopes. It was true, that the society of shipowners were to be empowered by the bill to delegate a representative to the board which it was in contemplation to create. This was because that society was an influential one. That society, however, was a voluntary association; it might expire to-morrow, and then (as we understood the hon. member) that part of the act would be inoperative. The hon. member also defended the

ship-owners against the imputations which had been thrown upon them, in regard to their indifference to the value of human life. The most exaggerated statements had been made, both in the public prints and before the committee that had been appointed to inquire into the causes of shipwrecks. He pronounced the bill to be a legislative monstrosity, which could not be moulded into any useful form by any committee to which it could be referred; and he trusted that the house, in justice to the large mercantile interests involved in it, would reject the motion for its second reading. The expenses which would be consequent on the passing of the act were also much underrated, as it would be impossible to effect the purposes of it with an establishment so limited as that proposed. He should feel it his duty, unless an intimation were given by the hon. member for Sheffield of his intention to withdraw the bill, to move that it be read a second time that day six months. The hon. member having moved to that effect,

Mr. CHAPMAN seconded the motion.

Sir E. CODRINGTON said he believed that none of the hon. members who had spoken had disapproved of the main object of the bill; and he should think that this alone would induce the house to consent to send it to a committee. It was true the bill was not intended to be one of good to the shipowners exclusively; nor should it be so; but he begged to say, that, notwithstanding that, he had some time since presented a petition, most respectably signed, from South Shields, in its favour. He could not help thinking that the interests of seamen were as worthy of the consideration of the house as the interests of ship-owners, although the latter called themselves "the shipping interest." He trusted, indeed, that the government would give the subject its serious consideration; at all events, he should give the motion his decided support. Whether it were taken up now or not, something must be done to reform the present system. Everybody knew that many ships were lost, and many lives sacrificed, every year; and that seamen, when they went on board a vessel, had no means of knowing what was its condition, or what was the description of the provisions upon which they would be put. Surely that required to be altered; and under all these considerations, he did hope that the house would assent to the motion of the hon. member for Sheffield, and allow the bill to be read a second time.

Mr. LABOUCHERE denied that his right hon. friend the President of the Board of Trade had approved of the principles of the bill. His right hon. friend had expressed his approbation of the object of the bill, but not of its principle. His right hon. friend was opposed to the principle of it, which was one of vexatious interference with the shipping interests. The second reading of this bill would cause very great alarm, and the passing it would inflict a severe blow on those interests. He admitted that an inquiry into the causes of shipwrecks was most desirable, but would the house, when it looked at the expense and cumbrousness of the plan proposed by the bill, think that the best mode to be adopted? He thought it impossible to effect by the bill the object they had in view, and that the house would best consult the interests they wished to benefit by not going into committee.

Mr. BARNARD said a few words, which were inaudible in the gallery. We understood the honourable member to express a hope that the bill would be withdrawn.

Captain PECHSELL thought that, as all were agreed to the principle, it was not too much to ask that the bill should be allowed to go to a committee up stairs. He must state his opinion, however, that it would be most objectionable to establish a second Board of Admiralty in the city. Every body knew, that in the North American timber trade ships were employed which were unfit for any thing else, and wholly unseaworthy. He would therefore vote for going into committee.

Captain DUNDAS expressed a hope that the bill would be allowed to go into committee.

Colonel THOMPSON, as a member of the committee on whose report the bill was founded, had observed that seafaring men attached great importance to the objects of the bill. He had lately been visiting his constituents at Hull; and although much dissatisfaction prevailed, there was none in regard to this bill. On the contrary, he was sure if the house rejected the second reading, it would cause much discontent.

Mr. HUTT never knew a bill more calculated to throw obstacles in the way of commercial affairs. If it passed, the effect would be to discharge half the persons employed in the command of vessels.

Mr. BUCKINGHAM said, that annually property to the amount of £3,000,000, and lives to the amount of 1,000 were sacrificed. A committee had been appointed to inquire into the cause, and they had come to a resolution that it was possible to save two-thirds of the property and one-half of the lives lost. In considering the means of preventing the losses which annually occurred, they had all agreed in the necessity of forming a board to examine the ships as to their seaworthiness, and the masters as to their competency. He said now, as he had said then, that he was willing to resign the matter into the hands of the government if they would take it up. With regard to what had been said touching the propriety of inquiring into the causes of shipwrecks, he thought that it would be much better to inquire previously, so as to prevent shipwreck, than to inquire after vessels had actually been lost. The board which it was proposed to create was not intended to supersede the courts of law, but to adjudicate between the captain and his sailors, (it being well known that no class of persons was so bad as that composed of what were called sea-lawyers.) He was perfectly willing that the bill should go to a committee up stairs. The question was one concerning the interests of seamen, rather than one affecting those of the shipowners. Reserving the nomination of the committee till to-morrow, he should then divide the house on the resolutions.

The gallery was then cleared for a division; and the house divided on the question, "That the words proposed to be left out do stand part of the bill." Ayes, 28; Noes, 176;—Majority, 148.

The motion for the second reading was accordingly negatived.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain.—R. Meredith.

Lieutenants.—G. Harper, J. Ramsay, R. L. Atkinson.

Master.—W. W. White.

APPOINTMENTS.

Captain.—Sir John Bremer, 28.

Commanders.—R. S. Triscott, 1, at Plymouth; F. Bullock, 17; R. Morgan, 1; C. H. Seale, 34, Plymouth.

Lieutenants.—J. A. Stevens, 2, (sup.); Geo. Morrit, 3, from 4; W. T. Stretell, 1;

W. Hoseason, (sup.) 14; J. Coleman, a, 1; J. Markett, 18; J. Cheere, 19, from 20; F. Servente, 1; J. H. R. Wilson, 1; W. G. Maude, C. Jackson, 22, from 21; R. Duncan, 6; J. Nicholas, 34, Plymouth; G. Harper, 6; R. L. Phillips, 30; T. F. Birch, 36, to command; W. Lory, 37, to command.

Masters.—W. Living, (act.,) R. White, (act.,) 2, sup.; W. Sydney, 35, in charge.

Mates.—R. Smith, 5, from 6; G. S. Boys, 23; J. Strange, 26; F. J. Millman, 29; R. G. Campbell, 80; L. A. W. Beauclerk, 6.

Surgeons.—M. M'Enally, 7; J. Steavenson, 9, from 10.

Assistant Surgeons.—F. Mansell, M.D., 11; S. Donelly, 9; R. M'Creagh, 11; T. Somerville, 12; F. N. Slight, R. A. M'Donald, W. L. Methorn, M.D., 13; J. Vaughan, 10; T. Thompson, 26; W. Brown, 26; F. J. Chapple, 27; E. H. Cree, 13; R. T. Euston, 18.

Midshipmen.—R. Wilcox, 9; W. C. Geary, 24; W. W. Addington, 16; T. N. Cheshire, 31; J. Walker, 32; O. W. Lambert, 9.

Second Masters.—W. Forbes, (act.,) W. Roberts, (act.,) 2, (sup.); J. P. Weston, 7; B. Studwell, 8.

Masters' Assistants.—T. B. Graham, 16; W. Clendon, 23; E. Oakes, 33.

Pursers.—R. Wilson, (sup.,) 1; T. Kerrigan, 28.

Clerks.—J. Kealing, (in charge,) 7; R. H. Martin, 15; R. Kellard, 16; J. Autey, 9.

Engineers.—A. Witham, W. Pearman, (sup.,) 2.

[Vessels' Names to whom Officers are Appointed.]

1, Coast Guard; 2, Victory; 3, Hastings; 4, Melville; 5, Seringapatam; 6, Excellent; 7, Romney; 8, Royalist; 9, Hazard; 10, Larne; 11, Greenwich Hospital; 12, Ringdove; 13, Royal Adelaide; 14, Royal Sovereign; 15, Russell; 16, Princess Charlotte; 17, Boxer, S.V.; 18, Magnificent; 19, Bellerophon; 20, Revenge; 21, Melville; 22, Wolverine; 23, Fair Rosamond; 24, Sparrowhawk; 25, Britannia; 26, Haslar Hospital; 27, Fairy; 28, Alligator; 29, Sparrow; 30, Sparrowhawk; 31, Hercules; 32, Wizard; 33, Saracen; 34, Ordinary; 35, Ariadne, coal depot; 36, Lynx; 37, Delight.

Births.

On the 10th June, at Wells, Norfolk, the Lady of Lieut. Westbrook, R.N., of a son and heir.

At Portsea, on June 13th, the Lady of Capt. Morseby, Indian Navy, of a daughter.

On the 14th June, at Portsdown Hill, the Lady of Lieut. J. Long, R.N., of a son.

April 25th, at Fort Cumberland, the Lady of Lieut. Young, R.N., of a son.

Marriages.

On the 8th June, at East Wellow, Hants, by the Rev. J. F. Giffard, A.M., Captain George Evans, R.N., of Wilton Crescent, Belgrave-square, to Mary, youngest daughter of Vice-Admiral Giffard.

At Leith, T. Handasyde, Esq., Mus-selburg, to Mary Ann, daughter of the late Lieut. G. Harris, R.N.

Lieut. John Robert Woodruffe, R.N., Coast Guard Service, son of Captain Woodruffe, R.N., C.B., of Greenwich Hospital, to Jesse, youngest daughter of Capt. Bradley.

On the 29th of May, at Beauminster, the Rev. James Woodward Scott, son of Captain Scott, R.N., of Chudleigh, to Frances, youngest daughter of the late Samuel Cox, Esq., of the former place.

On the 7th June, at Madron, D. B. Bedford, Esq., second son of the late Capt. J. Bedford, R.N., to Frances, fourth daughter of Thomas Bolitho, Esq., Penzance.

At Brydekirk, the Rev. Dugald Stewart Williamson, of Tongland, to Julia, daughter of the late Captain Stanley, R.N.

On the 11th June, at the parish church of Budock, Lieutenant John M. Montgomery, of the 49th Foot, to Jane, the amiable and accomplished daughter of the late Lieutenant John Moore, commander of H.M.S. Delight.

On the 18th June, at Raynham, Norfolk, by the Rev. Charles Campbell, Lieut. Charles Fitzroy, R.N., third son of the Hon. Lieut. Gen. Fitzroy, Kempstone, Norfolk, to Caroline Emily, third daughter of the late Richard Phayre, Esq., of Shrewsbury.

Deaths.

At Fareham, on the 26th inst., Helen, widow of the late Captain Patton, R.N., aged 86.

Lately, at Kingston, Wm. Wilhe, Esq., Purser, R.N.

On the 13th June, at Horndean, in the prime of life, sincerely regretted, Captain Edward Seymour, R.N., son of the late gallant Sir Michael Seymour, bart, K.C.B.

Lately, at Gibraltar, Lieut. Duncan F. Campbell, R.N.

Lately, Lieut. T. Phelps, R.N., son of the late Rev. W. Phelps, of Montacute House, Somerset.

May 22, Mr. W. W. Willie, of North-end, Purser, R.N., aged 57 years.

Lately, at Trafalgar Cottage, Somers-town, Hephzibah, daughter, of Commander F. Frankling, R.N.

On the 1st May, at Jersey, Lieut. Wm. Haines, R.N. (1815).

At Rio Janeiro, on the 15th August, 1836, on board H. M. ship Cornet, having fallen from the fore-yard, Wm. C. Herring, son of Mr. T. S. Herring, of this town.

Lately, at Portsmouth, Sophia, wife of Dr. C. Inches, R.N.

Lately, at Camberwell, Captain Philip Lamb, R.N., aged 79.

Lately, at Greenwich, Lieutenant Dijon, R.N.

Lately, John Bignell, Esq., Purser, R.N., aged 86.

Lately, Lieutenant Byron, R.N. (1799).

At Holywood, county of Antrim, Lieutenant G. H. Sarratt, R.N., (1815,) Chief Officer of the Coast Guard on that station.

At Fisherton Asylum, Lieutenant Thomas Phelps, R.N., (1822,) aged 40.

METEOROLOGICAL REGISTER,

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

MAY, 1837.

Month Day.	Week Day.	BAROMETER.		FAHRENHEIT'S THERMOMETER.				WIND.				WEATHER.	
		In Inches and Decimals.		In the Shade.				Quarter.		Strength.			
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	A.M.	P.M.	A.M.	P.M.	Morning.	Evening
1	M.	In. Dec.	In. Dec.	°	°	°	°	S.W.	S.W.	7	7	Qbc.	Qbc.
2	Tu.	29.73	29.75	55	61	46	61	S.W.	S.W.	3	5	Bc.	Bc.
3	W.	29.96	29.95	54	62	44	63	N.E.	N.E.	3	3	O.	O.
4	Th.	29.79	29.72	58	63	47	64	N.E.	N.E.	4	3	O.	Bc.
5	F.	29.83	29.90	45	54	43	56	N.W.	N.W.	5	5	B.	Bc.
6	S.	30.03	30.06	49	53	40	57	N.	N.	4	4	Bc.	Bc.
7	Su.	30.13	30.13	47	54	36	55	N.	N.W.	2	2	Bm.	Bcm.
8	M.	30.07	30.03	48	54	36	58	S.W.	S.W.	2	2	O.	Or (4)
9	Tu.	29.81	29.73	49	53	43	57	N.E.	N.E.	2	2	Bc.	Bc.
10	W.	29.62	29.60	42	46	36	48	N.	N.	5	6	Opsr 2)	Opsr (5)
11	Th.	29.62	29.66	40	43	32	47	N.W.	N.W.	5	4	Bc.	Bc.
12	F.	29.96	30.00	44	49	34	50	S.E.	S.W.	2	2	Od (2)	Or (3)
13	S.	29.84	29.77	45	53	40	55	S.	S.	2	2	Bc.	P (3)
14	Su.	29.83	29.82	40	50	40	58	N.E.	E.	2	2	O.	Bcpr (3) 4)
15	M.	29.80	29.82	47	57	39	59	N.	N.	5	5	Go.	Go (4)
16	Tu.	30.10	30.10	46	53	43	57	N.E.	N.E.	5	5	O.	Bc.
17	W.	30.31	30.33	47	55	43	58	S.W.	N.W.	3	4	B.	Bc.
18	Th.	30.29	30.25	56	68	39	69	N.	N.	7	7	Go.	Go.
19	F.	30.17	30.15	50	51	47	54	N.	N.E.	5	5	Od (2)	Bc.
20	S.	30.08	30.06	42	54	40	55	N.E.	N.	4	4	Od (2)	O.
21	Su.	29.97	29.92	43	47	37	50	N.W.	N.E.	2	4	Od (2)	Or (3)
22	M.	29.76	29.74	44	45	40	46	N.	N.	6	6	Qprs 2)	Bcpr (3)
23	Tu.	29.76	29.84	44	48	37	49	N.	N.	4	3	O.	O.
24	W.	29.95	29.97	45	54	38	58	S.W.	S.W.	1	2	Bc.	Bc.
25	Th.	29.96	29.94	57	59	38	60	S.W.	S.W.	2	4	O.	Bc.
26	F.	29.84	29.84	54	61	40	62	S.W.	S.W.	3	4	Bc.	Bc.
27	S.	29.91	29.92	58	66	46	68	S.W.	S.W.	2	4	B.	B.
28	Su.	30.00	30.03	54	66	41	69	S.W.	S.W.	3	3	B.	B.
29	M.	30.06	30.02	58	58	46	61	E.	E.	1	2	O.	Or (3)
30	T.	30.00	30.01	61	67	50	68	S.W.	S.W.	2	2	B.	Bc.
31	W.	30.08	30.07	55	62	47	64	W.	W.	5	5	B.	Qbc (3)
		30.04	30.00	52	63	45	65	S.W.	S.W.	4	4	O.	Op (3)

MAY.—Mean height of the Barometer=29.942 inches; Mean Temperature=49.6 degrees; Depth of Rain fallen=0.90 inches.

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

LONDON: T. STANLEY, PRINTER, WHEATSHEAF-YARD, FARRINGTON-STREET.

ORIGINAL PAPERS.

AUGUST, 1837.

LIGHT AT FALSE POINT—BAY OF BENGAL.

To the Editor of the Nautical Magazine.

East India House, the 6th July, 1837.

SIR,—I am commanded by the Court of Directors of the East India Company to transmit copy of a renewed notice, dated Fort William, the 23rd January last, as to the light intended to be exhibited at False Point, in the Bay of Bengal; and I am to request that the same may be inserted in the Nautical Magazine.

I am, Sir, your most obedient humble servant,
JAMES C. MELVILLE.

Referring to the notice published from this Office, under date 19th July last, notice is given, that on the 1st day of March next, a light will be exhibited at False Point, on a Tripod, in latitude $20^{\circ} 19' 25''$ N., and longitude $86^{\circ} 48' 8''$ E.

The light will be exhibited from an elevation of about 65 feet above high water mark, and be visible in clear weather at a distance of about 13 miles, from an elevation of 15 feet above the surface of the sea.

The light will be continued at this height until the end of November, after which it will be discontinued, in order to the removal of the lantern to the top of the permanent building. It will subsequently, viz., on and after the 1st March, 1838, be again exhibited at an elevation of 120 feet above high water mark, and be then visible from 18 to 20 miles in clear weather, from the height of 15 feet from the surface of the sea.

The Pilots' Station will be continued as heretofore, off Point Palmyras, during the S.W. monsoon, that is from the 15th March to the 15th September, during which period the pilot vessels cruise during the day off the point, anchoring during the night in a line east and west, in latitude $20^{\circ} 42'$ to $20^{\circ} 48'$ N., with the point bearing west to W. by S.; the vessel, on board of which the next turn pilot may be, will burn a Blue Light and fire a Maroon alternately every half hour, commencing with the former at eight o'clock, and continuing till day light.

Commanders, on making the light on False Point, are recommended, after bringing it to bear west in from 13 to 14 fathoms, to steer to the N. E., keeping in from 13 to 18 fathoms, as the wind may hang to the westward or eastward, on no account coming under the former depth. In this track the Blue Light and maroon above mentioned will be seen long before the light on False Point is lost sight of. If, however, about the beginning of September, the wind comes from the eastward, or the weather assumes a threatening appearance, the pilot vessels necessarily haul off to the eastward, and will then be found

in a line between Point Palmyras and the Floating Light at the entrance of the eastern channel. Vessels therefore about that period, if the wind hangs to the eastward, or has a threatening appearance, are recommended, after leaving False Point, on no account to approach Point Palmyras, but rather to endeavour to make for the floating light at the entrance of the eastern channel. And it is further notified, that from the 15th September, no pilot vessel will be found to the westward of the western sea reef.

From the 15th September to the 15th March, the pilot vessels cruise during the day between Saugor Sand and the western sea reef, anchoring in the night east and west of each other, in latitude 21° to $21^{\circ} 10'$ north.

Vessels approaching either station during the day, are requested to make for that vessel, on board of which they will see a large red flag flying at the main, whenever they can do so without great inconvenience or delay. In the night, during the N.E. monsoon, that is, from 15th September to 15th March, at the floating light station at the entrance of the eastern channel, the vessel having the next turn pilot on board, will burn a maroon every hour, and in thick weather every half hour, and as before stated, at the Point Palmyras Station, during the S.W. monsoon, or between 15th March and 15th September, such vessel will alternately burn a blue light and maroon every half hour. Commanders are in like manner requested, during the night, to seek their pilot from such vessel, it being however understood that any pilot vessel which may be first seen, is bound immediately to use every exertion to put a pilot on board, night or day, without reference to turn or rotation, and that this latter is only allowed when no delay is occasioned thereby.

By Order of the Marine Board,
C. B. GREENLAW, Secretary.

Fort William, the 23d January, 1837.

COPY OF THE LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL BERENICE. *Falmouth to Teneriffe, on her way to Bombay.*

THE subject of communication by steam with our distant colonies, has at length assumed so important a feature in the commercial relations of this country, that having already devoted many of our pages to its discussion, we are induced to avail ourselves of the liberality of the Board of Directors of the Honourable East India Company, to lay before our readers copies of the logs of two of their vessels, now on their way from Falmouth to Bombay. The two vessels in question, the *Atalanta* and *Berenice*, it may be said, will afford a fair trial of the voyage to India by the Cape, which has been so heavily denounced by a celebrated author, they being in every respect vessels of excellent construction, and fitted with excellent engines. In our March number, (p. 193,) we stated this object of the Board in thus sending these vessels, and for doing which the Hon. Directors well deserve the thanks of the whole country; and we also there stated the tonnage and

engines of each vessel. In our July number, (p. 466,) will be found the commencement of the *Atalanta's* log as far as *Teneriffe*, the continuation of which we now give to *Fernando Po*, with that of the *Berenice* to *Teneriffe*, and it is our intention to continue each to *Bombay*. Giving, as we do, all the particulars which the logs enable us to do, our readers will be able to form their own comparisons between the two vessels, as well as their conclusions respecting the voyage in question. We may briefly observe here, that, while such comparison appears to be in favour of the *Berenice* as far as *Teneriffe*, it must be remembered that the *Atalanta* experienced a southerly gale on the 5th January, which must have retarded her progress.

HONOURABLE COMPANY'S STEAM VESSEL BERENICE, 1837. FROM FALMOUTH TO BOMBAY. GEORGE GRANT, ESQ., COMMANDER.

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	Lying in Falmouth Harbour.							<i>March 16th, 1837</i> —A.M. Moderate and fine. Employed getting ready for sea. Promoted Mr. Bennett to 2d officer, and appointed Mr. Spear purser, the latter being unable to perform the duty of 2d officer, in consequence of a defect in his sight. Discharged Mr. Maule to the shore, he being in an infirm state of health, and unable to do his duty. Promoted Mr. M'Aulay, gunner, to be 3d officer, and J. Johnson, quartermaster, to be gunner. Noon cloudy. P.M. Light airs; 3h. 30m. captain and passengers came on board. 9h. 30m. dispatches arrived on board.
4								
6								
8								
10								
12								
2								
4								
6								
8					E.N.E			
10								
11	S.W. W.	8	1		14	15	27½	
12	S.S.W.	9			14½	15	27½	

10h. 20m. got steam up; 10h. 30m. weighed and stood out of harbour; at 11h. 30m. Lizard Lights W.byN. Set topsail, jib, fore and main trysails. Increased rate of speed one mile per hour. Midnight, Lizard Lights N.W.byN.; moderate and fine; a chopping swell on. Burning Wallsend coals from the bunkers.

1	S.S.W.	9		S.E.	16	15	27½	<i>March 17th.</i> —A.M. Moderate and fine; at 1h. Lizard Lights N.byW. 12 miles; at daylight moderate and cloudy; at 6h. 30m. in foresail; set flying jib and fore-staysail; a ship in sight, S.E., standing S.W.; 8h. 30m. set spanker; at 9h. up top-gallant yard and set the sail; at 10h. in topsail and top-gallant-sail; at 11 set foresail, fore-topsail, and fore-topgallant-sail. At noon set topglt. studg. sail; a sail N.W.bN. hull down, standing to southward; moderate and cloudy. Lat. obs. 48° 30' N., Long. in. 5° 53' W. Draft forward 14ft. 4in., aft. 15ft. 3in. Coal expended by purser, 4 cwt.; getting up steam, 1 t. 12 cwt.; on the fires, 10 t. 1 cwt.; remaining, 296 t. 7 cwt.; tallow remaining, 4,430 lbs.; oil, 346 gallons. P.M. steady breezes; at 4 a schooner S.E.byE. 5 miles; set main-gaff-topsail; fresh breeze and fine; 8. pleasant breeze and fine; at 11 carried away larboard whisker from cathead; midnight, steady breezes and clear. In royal and spanker.
2	S.W. bW.	9			16	15	27½	
4		9	4		16	30	27½	
6		9	2	South.	15½	28	27½	
8		8	8		15½	28	27½	
10		9			16	28	27½	
12		9	3		16	29	27½	
2		9	4	East.	15	29	27½	
4		9	5		16	29½	27½	
6		9	6		16	30	27½	
8		10	.		16	30	27½	
10		10	.		16	30	27½	
12		10	.		16	30	27½	

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	S.W.b.W.	9	6	E.N.E	16	30	27½	<i>March 18th</i> .—A.M. Fine. At 4h. 30m. set royal and spanker; 8, steady breeze and cloudy; at 10h. a long cross swell; ship rolling considerably; at noon cloudy weather; a sail S.b.W. standing to S.W.; sun obscured. Lat. * Long. in. * draft forward, 14ft. lin., aft. 15ft.; coal expended, 17 t. 15 cwt.; remaining, 278 t. 12 cwt.; tallow remaining, 4,380 lbs.; oil remaining, 343 gallons. P.M. cloudy, fresh breeze; at sunset moderate and cloudy; at midnight decreasing breeze and cloudy weather.
4		9	3		16	29½	27½	
6		9	4		16	29	27½	
8		9	7		15	28½	27½	
10		9	4		14½	28	27½	
12		9	6		14½	28	27½	
2				E.S.E.	14	28	27½	
4		8	6		14	28	27½	
6		9	5	E.N.E	14	28	27½	
8		9	6		14	28½	27½	
10		9	9		14½	29½	27½	
12	W.S.W.	9			15	30	27½	
2	W.S.W.	9		E.N.E.	15	29	27½	<i>March 19th</i> .—A.M. moderate and fine. At 10h. 30m. in fore and aft sails. At noon, moderate and clear. Lat. obs. 42° 30' N., long. in. 10° 57' W. Draft forward 13 ft. 10½ in., aft 14 ft. 9 in. Coal expended, 17 tons 5 cwt., remaining 261 tons 7 cwt. Tallow rem. 4330 lbs. Oil rem. 339½ gallons. P.M. pleasant breeze, and fine; congregated for Divine worship. At 5h. in all studding sails, and furled standing sails; spoke a Swedish barque from Falmouth to the Mauritius, five days out. From 8h. to midnight incessant rain; at midnight fine; a light air from S.E.; set fore and aft sails.
4		9	5		15½	28	27½	
6		9	3		15½	28	27½	
8		9	6		16	28	27½	
10		9	4		15	28	27½	
12	S.W.b.W.	9			15	28	27½	
2		9		NE bE	15	28	27½	
4	S.W.½S.	9			15	28	27½	
6		9	4		15	28	27½	
8		9		Calm.	15	28	27½	
10		9	4		16	28	27½	
12		9	5		16	28	27½	
2	S.W.½S.	9		S.b.W.	16	29	27½	<i>March 20th</i> .—A.M. fine. At 1h. passed a brig standing to S.W.; at 3h. passed a ship steering S.W. In all sails, cloudy. 5h. set fore and aft sails; passed a barque shewing Prussian colours. 7h. in all sails; 9h. cloudy; 10 dark weather, heavy squalls of rain; 11h. set fore and aft sails; 11h. 30m. heavy squalls of wind, and rain; in all canvass. Noon cloudy with heavy showers. Lat. acct. 39° 3' N., Long. in. 12° 7' W. Draft forward 13 ft. 8 in. aft 14 ft. 6 in. Coal expended 17 t. 7 cwt., rem. 244 t.; tallow rem. 4280 lbs.; oil rem. 336 gallons. P.M. squally, with rain. 2h. 30m. set jib, fore-staysail, and fore-trysail.
4		9			16	29	27½	
6		9			15	29	27½	
8		8	4		15	29	27½	
10		8	5		15	29	27½	
12		8	6		15	29	27½	
2		8	2	West	14	29	27½	
4		8			13½	29	27½	
6		8		WSW.	12½	26	27½	
8		8	1		13	26	27½	
10		7	6		13	26	27½	
12		7	7		13	26	27½	

3h. took in all sail; 4h. commenced working coals from fore-hold; little perceptible difference in hourly consumption from Welch coal being mixed with Wallsend. 4h. 30m. confused swell, ship pitching heavily. 6h. set fore and aft sails; passed a brig standing to westward. 7h. 30m. took in canvass; fine and clear, very heavy swell from W. by N. moderate breeze.

* Not in original.

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals Expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	S.W. $\frac{1}{2}$ W.	8		W.S.W	13	27	27 $\frac{1}{2}$	<p><i>March 21st</i>—A.M. steady breeze, and fine. 8h. mod. and fine; 9h. sent down topsail-yd. struck topmasts fore and aft; strong wind, with squalls and rain. 10h. heavy swell from westward. At noon heavy long swell, ship rolling heavily. Lat. obs. $36^{\circ} 43' N.$, long. in. $12^{\circ} 56' W.$ Draft forward 13 ft. 6 in., aft 14 ft. 3 in. Coal expended 16 t. 8 cwt., rem. 227 t. 12 cwt. Tallow rem. 4230 lbs. Oil rem. 332 $\frac{1}{2}$ gallons. P.M. squally, with rain; 1h. 30m. set fore and aft sails; rate of going not increased by the sail. 3h. in all sails; a heavy swell on the beam, which caused the ship to roll and strain very much; hauled up head to wind. 3h. 10m. wind more westerly; set fore and main trysails and jib. At 4h. recommenced working coals from the bunkers—all Wallsend. At 8h. sent up fore and fore-topsail yards; set fore-topsail; heavy swell from W.N.W., squally, with rain. Midnight strong breeze, and cloudy, with a heavy confused swell.</p>
3		7	6		13	27	27 $\frac{1}{2}$	
6	S.W. by S.	6	6	West	13	27	27 $\frac{1}{2}$	
8		7	1		13	27	27 $\frac{1}{2}$	
10		7	5		13	27	27 $\frac{1}{2}$	
12	S.S.W.	7	6		13	27	27 $\frac{1}{2}$	
2	S.W.	7	4		13	27	27 $\frac{1}{2}$	
4	S.S.W.	7	4		12	27	27 $\frac{1}{2}$	
6	S.W. $\frac{1}{2}$ W.	6	2		10 $\frac{1}{2}$	28	27 $\frac{1}{2}$	
8	S.W.	7	6		14 $\frac{1}{2}$	28	27 $\frac{1}{2}$	
10		8	4		14 $\frac{1}{2}$	29	27 $\frac{1}{2}$	
12		8	4		14 $\frac{1}{2}$	29	27 $\frac{1}{2}$	

up head to wind. 3h. 10m. wind more westerly; set fore and main trysails and jib. At 4h. recommenced working coals from the bunkers—all Wallsend. At 8h. sent up fore and fore-topsail yards; set fore-topsail; heavy swell from W.N.W., squally, with rain. Midnight strong breeze, and cloudy, with a heavy confused swell.

2	S.W.	9	2	N.W.	14 $\frac{1}{2}$	29	27 $\frac{1}{2}$	<p><i>March 22nd</i>—A.M. 4h. set fore-sail; steady breeze, and fine weather; daylight strong breeze and fine; heavy swell, vessel rolling heavy; crew employed fitting boats' fenders, and gripes; sent up fore-topgallant-mast. Noon fresh breeze, and fine; decreasing swell. Lat. obs. $33^{\circ} 50 \frac{1}{2}'$, long. $13^{\circ} 32' W.$, lunar. Draft forward 13 ft. 3 in., aft 14 ft. 4 in. Coal expended 16 t. 13 $\frac{1}{2}$ cwt., rem. 210 tons 18 $\frac{1}{2}$ cwt. Tallow rem. 4180 lbs. Oil 329 gallons. P.M. steady breezes, and clear, with swell from N.W.; vessel rolling heavily. 5h. set fore and aft sails, and topsail; at 5h. the bunkers empty; working fore-hold; Welch coals received with Wallsend. Midnight fine, and light winds.</p>
4		9	6		14 $\frac{1}{2}$	29	27 $\frac{1}{2}$	
6		9	6		15 $\frac{1}{2}$	29	27 $\frac{1}{2}$	
8		9	6		16	28 $\frac{1}{2}$	27 $\frac{1}{2}$	
10		9	3		16 $\frac{1}{2}$	28	27 $\frac{1}{2}$	
12		8	6		16 $\frac{1}{2}$	28	27 $\frac{1}{2}$	
2	S.W. $\frac{1}{2}$ W.	8	6		16	29	27 $\frac{1}{2}$	
4		9	3		16	28	27 $\frac{1}{2}$	
6		10	.		17	27	27 $\frac{1}{2}$	
8		9	4		17	28	27 $\frac{1}{2}$	
10		9	8	Calm	17	28	27 $\frac{1}{2}$	
12		9	8		17	28	27 $\frac{1}{2}$	

2	S.W. $\frac{1}{2}$ W.	10		N.W.	17 $\frac{1}{2}$	28	27 $\frac{1}{2}$	<p><i>March 23rd</i>—A.M. light winds; 2h. furled the topsail. Daylight calm; furled fore and aft sails. People employed setting up funnel, shrouds, &c. Noon fine. Lat. obs. $30^{\circ} 46' N.$, long. in. $15^{\circ} 1' W.$ Coals expended 16 tons 14 cwt., rem. 194 tons 4 $\frac{1}{2}$ cwt. Tallow rem. 4130 lbs. Oil rem. 329 gallons. P.M. light variable airs; at 3 saw the Great Salvage Island W. by S. about 7 leagues; at 4h. the Salvage bore N. $85^{\circ} W.$; at 6h. Peak of Teneriffe S.W. $\frac{1}{2}$ W., Great Salvage N. $36^{\circ} W.$ 8h. steady incr. breeze, and clear; midnight clear, Teneriffe S.S.W. $\frac{1}{2}$ W.</p>
4		10			17	27	27 $\frac{1}{2}$	
6		9	2	Calm	16	27	27 $\frac{1}{2}$	
8		9	4		16	27	27 $\frac{1}{2}$	
10		9	5		16	27	27 $\frac{1}{2}$	
12		9	6		16	27	27 $\frac{1}{2}$	
2		9	4	S.W.	17	27	27 $\frac{1}{2}$	
4		9	1		17	27	27 $\frac{1}{2}$	
6		9	4		17 $\frac{1}{2}$	27	27 $\frac{1}{2}$	
8		9	7		17 $\frac{1}{2}$	26	27 $\frac{1}{2}$	
10		9	6		17 $\frac{1}{2}$	26	27 $\frac{1}{2}$	
12		9	6		17 $\frac{1}{2}$	26	27 $\frac{1}{2}$	

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals Expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	S. S. W.	9	4	S. b. W.	17½	27	27½	<p><i>March 24th</i>—A.M. moderate and clear; swell from northward. 5h. running in close to the land. 6h. 30m. came to anchor in 15 fms., muddy bottom, off Santa Cruz: Fort N. by E. ¼ E. Grand Canary, centre, S. S. E. ¼ E.; town church steeple, W. b. N. ¼ N. 8h. health-boat came alongside, and, after necessary questions, gave permission to land. Noon, ship's head S.W.; 18 fathoms over the stern. The greatest heat in the engine-room during the voyage was 101°, in the bunkers 120°. 6h. 30m. blew off steam, and extinguished the fires. Steam up 175½ hours, and whole distance run during that time by the log 1571¼ miles. Coal expended 12 tons 1½ cwt., rem. 182 tons 3 cwt. Tallow rem. 4100 lbs. Oil rem. 326 gallons. P.M. moderate and fine. Employed as requisite; cleared the engine, examined bearings, and emptied the boilers.</p>
4		9	4		17½	26½	27½	
6		9			17½	26	27½	
8								
10								
12								
2				Calm				
4								
6								
8								
10								
12								

The boilers are three in number, and of copper; they are blown out every two hours. There is no gauge on the steam-chest, or for the steam. There are nine fires.

The foregoing log gives the following results: total coal consumed, 128 tons 1 cwt.; average per hour, 14 cwt.; average per hour per horse-power, 6½ lbs. nearly. Distance run by log being 1,572 miles nearly, and the time employed 175½ hours, is 7 days 7½ hours for the voyage, or 8·9 miles per hour.

The inconvenient system of reckoning by the astronomical day appears to be observed in the *Atalanta's* log, while that of the *Berenice* is according to the civil day, commencing at midnight. We thought the former method was long since exploded in the merchant service, as it is in the Royal Navy; and the sooner it is abolished the better.

LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL ATALANTA, ON HER PASSAGE FROM FALMOUTH TO BOMBAY—Continued.

TENERIFFE TO MAYO, AND FERNANDO Po.

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS.
2									<p><i>Wednesday, 11th Jan. 1837</i>—Begins with strong wind, dark, cloudy weather, and rain. Employed washing ship. Carpenters finished their work. At 9 A.M. commenced lighting the fires; at 10 h. 30 m. all ready; at 11 A.M. a strong squall from N.E., accompanied with thunder and lightning. Noon, strong breezes and cloudy. This contains only twelve hours to commence sea log.</p>
4									
6									
8									
10									
12									
2									
4									
6									
8									
10									
12									

Hours.	Courses.	Knots per Hour. Fathoms per Hr.		Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS.
2	S. W.	8	4	N. E.	17	24½	27½	1	<i>Thursday, 12th Jan.</i> —Commenced with strong breezes, and cloudy. At 1 P.M. commenced heaving in chain; at 2 P.M. weighed, set the engines going, and proceeded to sea. People employed stowing anchors, and putting chains below. At 5 h. 45 m. Punta Rosa N. b.W. ¼ W., dist. 6 or 7 miles; at 8 set square-sail and fore-topsail; at 10 squally; midnight took in fore-topsail; at 6 more moderate—all sail set to advantage. Carpenters employed in sundry necessary jobs. Ends at noon with fresh breezes, and clear. Coals of inferior quality; considerable difficulty in generating the steam.
4									
6		8	4		18	24½	27½	1	
8		8	4		19	24½	27½	1	
10		8	6		20	24½	27½	1	
12		8	4		20	24½	27½	1	
2		8	4		20	24½	27½	1	
4		8	4		20	24½	27½	1	
6		8	4		20	24½	27½	1	
8		8	4		20	24½	27½	1	
10		8	4		20	24½	27½	1	
12		8	4		20	24½	27½	1	

Lat. obs. 25° 30' N.
 Long. in. 18 05 W.
 Barom. Fair. Therm. 69°.

2	S. W.	9	North.	20	24½	27½	1	<i>Friday, 13th Jan.</i> —These 24 hours begin with light winds, and clear. People employed under the boat-swain. At 11 P.M. light winds, with rain at intervals; took in fore-topsail. Midnight, light winds from the westward; set all fore and aft sails. At 8 A.M. do. weather. Ends at noon the same. Variation 1½ W. Burning coals of an inferior quality.
4				20	24½	27½	1	
6				20	24½	27½	1	
8				20	24½	27½	1	
10				20	24½	27½	1	
12				20	24½	27½	1	
2				20	25	27½	1	
4				20	25	27½	1	
6				20	25	27½	1	
8				20	25	27½	1	
10				20	25	27½	1	
12				20	25	27½	1	

Lat. obs. 22° 14' N.
 Long. in. 19 52 W.
 Barom. Fair. Therm. 69°.

2	S. W.	9	North	20	25	27½	1	<i>Saturday, 14th January</i> —These 24 hours commence with light winds, and clear weather. People employed variously, under the boatswain, fitting poop awning, &c. Stopped two minutes to lighten side-packing. Midnight, light airs, inclining to calm; took in sails. At 8 A.M. steady breeze, and clear; set fore-topsail and square-sail; all hands up hammocks, beds and chests; clearing up fore-castle. The rest of the day allowed to wash and scrub clothes. Ends at noon with steady breezes, and clear. Arm of hand-pump carried away. Engines working warm.
4				20	25	27½	1	
6				20	25	27½	1	
8				20	25	27½	1	
10				20	25	27½	1	
12				20	25	27½	1	
2				20	25	27½	1	
4				20	25	27½	1	
6				20	25	27½	1	
8				20	25	27½	1	
10				20	25	27½	1	
12				20	25	27½	1	

Lat. obs. 19° 0' N.
 Long. in. 21 35 W.
 Barom. Fair. Therm. 71½°.

Hours.	Courses.	Knots per Hr.	Fathoms pr. Hr.	Winds.	Mean Number of Revolutions	Coals in Cwts.	Engine Barometer.	Boilers bln. off.	REMARKS.
2	S.W.	9		North	20	25	27½	1	<i>Sunday, 15th Jan.</i> —Begins with steady breezes, and clear. Employed variously. At 8 p.m. do. weather; midnight cloudy, with rain; engines working very steady. At 2 a.m. stopped the engines; screwed down glands, slides, &c.; sailing under fore-topsail. At 5 h. 30 m. started them again, and made all sail; at 6 the island of Sal bore, per compass, S.S.W. Sent up, and crossed topgalt. Employed getting up coals.
4		9		N.E.	20	25	27½	1	
6		9			20	25	27½	1	
8		9			20	25	27½	1	
10	S.S.W.	9			20	25	27½	1	
12		9			20	25	27½	1	
2		9			20	25	27½	1	
4		4			12½				
6	S. by W.	6			12½				
8		9			20	25	27½	1	
10		9			20	25	27½	1	
12		9			20	25	27½	1	
Lat. obs. 16° 01' N. Barom. Fair.					Ends at noon with fresh breezes, and clear. Bonavista bearing S. by E., dist. 10 or 12 miles.				
Long. in. 23 13 W. Therm. 71°.									
2	Sb. W ½ W	9		N.E.	20	25	27½	1	<i>Monday, 16th Jan.</i> —Commences with fresh breezes, and clear. At 2 p.m. passed the Leton Rocks, bearing E. by S., distant 3 or 4 miles; at 3 saw the Island of Mayo, bearing S.S.W., per compass; all sail set possible to assist the engines. At 5 p.m. the north point of the island E. ½ S., dist. 8 miles. People employed getting chains up from below. At 6 rounded the S.W. end, and brought to in 12 fms. water, abreast the town, it bearing E.; veered away
4		9			20	20	27½	1	
6		9			20	25	27½	1	
8		9							
10		9							
12	S.S.W.	9							
2									
4									
6									
8									
10									
12									
7 fms. chain; stopped the engines; blew the boilers off at 6h. 15m. Employed packing, and refitting engines and boilers. Commenced sweeping the flues at 12. This contains 36 hours to commence harbour log. Midnight the same. Ship drawing fore and aft 13ft.									
2				N.E.					<i>Saturday, 21st Jan.</i> —Light winds, and fine pleasant weather. Found that no more coals were to be sent on board. At 10 h. 30 m. commenced heaving in chain; at 11 h. 30 m. away; hoisted jib to cast ship; all hands on board. Ends at noon, fine pleasant weather. This contains 12 hours to commence sea log. At 9 a.m. lighted fires.
4									
6									
8									
10									
12									
2									
4									
6									
8									
10						6			
12						24			
2	S.S.E. ½ E	8		N.E.	18	24	27½	1	<i>Sunday, 22nd Jan.</i> —Set the engines going at 12 a.m.; begins with fresh breezes, and fine pleasant weather. At 3h. 30m. the island bore by compass N. ½ W., dist. 30 miles; set all fore and aft sails; a strong cross sea running; vessel labouring, and shipping a good deal of water on deck; stopped the engines at 1 p.m. to ease bearing. Midnight strong breezes, and clear; stowed jib; engines working well; therm. 110. At 6 more moderate; reefed fore-topsail, and set it. At 7h. 30m. all hammocks on deck. All hands mustered at 11h. 30m. Ends at noon the same.
4		8			18	24	27½	1	
6		8			18	24	27½	1	
8		8			18	24	27½	1	
10		8 4			18	24	27½	1	
12		8 4			18	24	27½	1	
2		8 4			18	24	27½	1	
4		8 4			18	24	27½	1	
6		8 4			18	24	27½	1	
8		8 4			18	24	27½	1	
10		8 4			18	24	27½	1	
12		8 4			18	24	27½	1	
Lat. obs. 12° 42' N.					Ends at noon the same.				
Long. in. 21 15 W.									
Bar. 29.9 ins. Therm. 76°.									

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS.
2	S.S.E. $\frac{1}{2}$ E	8	4	N.E.	18	25	27 $\frac{1}{4}$	1	<i>Monday, 23d January</i> —Commences with fresh breezes, and fine pleasant weather. At 8 p.m. do. weather; midnight, steady and clear. At 2 a.m. let out reef in fore-top-sail. Employed making gaskets, and in other jobs. Ends with light winds: all sail set to advantage. Lat. obs. 10° 17' S. Long. in. 18 59 W. Barom. 29.9 ins. Therm. 78°.
4		8	4		18	25	27 $\frac{1}{4}$	1	
6		8	4		18	25	27 $\frac{1}{4}$	1	
8		8	4		18	25	27 $\frac{1}{4}$	1	
10	S.S.E. $\frac{1}{2}$ E	8	4	N.E.	18	25	27 $\frac{1}{4}$	1	
12		8	4		18	25	27 $\frac{1}{4}$	1	
2		8	4		18	25	27 $\frac{1}{4}$	1	
4		8	4		18	25	27 $\frac{1}{4}$	1	
6	S.S.E. $\frac{1}{2}$ E	8	4	N.E.	18	25	27 $\frac{1}{4}$	1	
8		8	4		18	25	27 $\frac{1}{4}$	1	
10		8	4		18	25	27 $\frac{1}{4}$	1	
12		8	4		18	25	27 $\frac{1}{4}$	1	
2	S.S.E. $\frac{1}{2}$ E	8	4	N.N.E.	18	25	27 $\frac{1}{4}$	1	<i>Tuesday, 24th Jan.</i> —Begins with light airs, inclining to calm. People employed as yesterday. At 5 p.m. took in all sail; calm; therm. in engine-room 115°; two men knocked up. Midnight, light airs and clear. All hands in good health, except one or two laid up in unforeseen diseases. At 6 light breezes from N.E. Set fore-top-sail and topgallant-sail. Ends with light airs, and calm. Lat. obs. 8° 01' N. Bar. 29.8 ins. Long. in. 16 35 W. Therm. 82°.
4		8	4		18	25	27 $\frac{1}{4}$	1	
6		8	4		18	25	27 $\frac{1}{4}$	1	
8		8	4		18	25	27 $\frac{1}{4}$	1	
10	S.S.E. $\frac{1}{2}$ E	8	4	Calm	18	25	27 $\frac{1}{4}$	1	
12		8	4		18	25	27 $\frac{1}{4}$	1	
2		8	4		18	25	27 $\frac{1}{4}$	1	
4		8	4		18	25	27 $\frac{1}{4}$	1	
6	S.S.E. $\frac{1}{2}$ E	8	4	N.E.	18	25	27 $\frac{1}{4}$	1	
8		8	4		18	25	27 $\frac{1}{4}$	1	
10		8	4		18	25	27 $\frac{1}{4}$	1	
12		8	4		18	25	27 $\frac{1}{4}$	1	
2	S.E. $\frac{1}{2}$ E	8	4	Variable	18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	<i>Wednesday, 25th Jan.</i> —Light airs, and calm. People employed under the boatswain. Carpenters at work making topmast studding-sail boom. Midnight, calm. Lime-juice served to the stokers; therm. in engine-room 120°. Ends at noon, steady breezes and cloudy. All fore and aft sails set. At 4 a.m. altered course to port half a point. Lat. obs. 5° 45' N. Bar. 29.7 ins. Long. in. 13 49 W. Therm. 81°.
4		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
6		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
8		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
10	S.E. by S.	8	4	Calm	18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
12		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
2		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
4		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
6	S.E. by S.	8	4	Calm	18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
8		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
10		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
12		8	4		18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	
2	S.E.	8	4	Variable	18 $\frac{1}{2}$	25	27 $\frac{1}{4}$	1	<i>Thursday, 26th Jan.</i> —Squally, with rain. At 3 p.m. took in all sail; heavy squall from S.E. At 4 p.m. a sail in sight, standing to S.E. At 6h.30m. came up with her, the Rodney, of and from Liverpool, a brig bound to the coast. Strong squalls, and dark lowering weather, with rain. Lightning and thunder during night from S.E. At 8 h. 30 m. commenced getting up coals out of fore-hold. Ends at noon, dark cloudy weather, with rain. At noon altered course half a point; 4 a.m. do. 1 $\frac{1}{2}$ do. Sun obscured.
4		7	4		18 $\frac{1}{2}$	25	27	1	
6		7	4		18 $\frac{1}{2}$	25	27	1	
8		8	4		18 $\frac{1}{2}$	25	27	1	
10	S.E. $\frac{1}{2}$ E.	7	4	Variable	18 $\frac{1}{2}$	25	27	1	
12		7	4		18 $\frac{1}{2}$	25	27	1	
2		8	4		18 $\frac{1}{2}$	25	27	1	
4		8	4		18 $\frac{1}{2}$	25	27	1	
6	S.E. $\frac{1}{2}$ E.	8	4	Variable	18 $\frac{1}{2}$	25	27	1	
8		8	4		18 $\frac{1}{2}$	25	27	1	
10		7	4		18 $\frac{1}{2}$	25	27	1	
12		6	4		18 $\frac{1}{2}$	25	27	1	

Lat. acct. 4° 26' N.
Long. .. 11 06 W.

Barom. 29.6 ins.
Therm. 79°.

Hours.	Courses.	Knots per Hour.		Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS.
			Fathoms per Hr.						
2	S.E. by E.	7		S. E.	18½	25	27	1	<i>Friday, 27th Jan.</i> —Begins with strong squalls, and rain. People employed getting up coals from fore-hold. Midnight fresh breezes, with heavy rain, thunder, and lightning. At 6 cleared up; commenced getting up coals from after-hold. Ends at noon with light winds, and clear; all sail possible set to advantage. Changed course to port one point. Lat. obs. 3° 39' N. Long. in. 8 18 W. Barom. 29·7 ins. Therm. 80°.
4		7			18½	25	27	1	
6		7			18½	25	27	1	
8		8		Variable	18½	25	27	1	
10		8			18½	25	27	1	
12		8			18½	25	27	1	
2		7	4		18½	25	27	1	
4		7	4		18½	25	27	1	
6		7	4		18½	25	27	1	
8		7	4	18½	25	27	1		
10		SE by E½ E	7	4	18½	25	27	1	
12			7	4	18½	25	27	1	
2	E. b. S.½ S.	8	4	N. E.	18½	25	27	1	<i>Saturday, 28th Jan.</i> —Commenced with light variable winds, and dark lowering weather. Employed getting up coals. Midnight, a steady breeze from N. E.; at 2 A.M. set fore-topsail; at 4 took in all fore and aft sails. Ends at noon, fresh breezes and clear. Experienced a strong current to the N. E., for which I allow twenty miles. Thermometer on the platform between the cylinders 128°; in the stoke-hole, 120°. Lat. obs. 4° 3' N. Long. in. 3 43 W. Barom. 29·6 ins. Therm. 82°.
4		8	4		18½	25	27	1	
6		9			18½	25	27	1	
8		9		North	18½	25	27	1	
10		9			18½	25	27	1	
12		9			18½	25	27	1	
2		9			19	25	27	1	
4		9			19	25	27	1	
6		9			19	25	27	1	
8		8		19	25	27	1		
10		8		18½	25	27	1		
12		8		18½	25	27	1		
2	E. S. E.	*	*	*	18½	25	27	1	<i>Sunday, 29th Jan.</i> —Begins with a steady breeze, and cloudy. At 4 P.M. John Lyons (s) drunk, behaving in a disorderly manner, attempted to strike Mr. Marsden, fourth officer, with a stick, and using threatening language; he was ordered on the poop, and put in irons. Frazer, Smith, M'Kinnon, Henvay, and Morton, also drunk, by what means I not yet found out. At 11 A.M. spoke the brig St. George, of Liverpool, bound to Bombay. Ends with light winds, and clear. Therm. on platform . . . 113° " In stoke-hole . . . 105 " Between cylinders 199
4					18½	25	27	1	
6					18½	25	27	1	
8					18½	25	27	1	
10					18½	25	27	1	
12					18½	25	27	1	
2					19	25	27	1	
4					19	25	27	1	
6					19	25	27	1	
8					19	25	27	1	
10					19	25	27	1	
12					19	25	27	1	

Lat. obs. 4° 13' N. Barom. 29·6 ins.
Long. in. 0 11 E. Therm. 83°.

* [These columns not complete in original.—Ed. N. M.]

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	Boilers blown off.	REMARKS.	
2	SEbE $\frac{1}{2}$ E	9 4		S. W.	19	25	27	1	<i>Monday, 30th Jan.</i> —Commences with light winds, and clear. People employed getting up coals out of after-hold, as yesterday. At 4 P.M. a sail in sight, standing to the S.E.; perceived a flash from a gun; immediately put the helm up, and bore away for her. She proved to be his Majesty's gun-brig Waterwitch, on her cruising ground. At 6 the commander came on board; at 7 he left us. Started the engines, and proceeded, steering S.E. by E.	
4		9 4			19	25	27	1		
6		9 4			19	25	27	1		
8		10			20	25	27	1		
10		10			20	25	27	1		
12		10			20	25	27	1		
2		10			20	25	27	1		
4		S.E. by E.	10			20	25	27		1
6			10			20	25	27		1
8			10 4			20	25	27		1
10	10 4			20 $\frac{1}{2}$	25	27	1			
12	10 4		20 $\frac{1}{2}$	25	27	1				

At 10 A.M. released Lyons, after giving him a severe lecture.

Lat. obs. 30° 32' N. Barom. 29.7 ins.
 Long. in. 4 14 E. Therm. 83°.

Therm: on platform . . . 114°
 „ Between cylinders 128
 „ In stoke-hole . . . 100

2	E.b.S. $\frac{1}{2}$ S.	9 4	S.E.	20 $\frac{1}{2}$	25	27	1	<i>Tuesday, 31st Jan.</i> —Commences with steady breeze, and clear. People employed getting up coals out of fore-hold; carpenters at sundry jobs. Midnight, do. weather. All hands at work during the night. Ends at noon with light breezes, and fine pleasant weather. Therm. on platform . . . 114° „ Between cylinders 129 „ In front of boilers 95 Lat. obs. 3° 42' N. Bar. 29.7 ins. Long. in. 7 59 E. Therm. 83 $\frac{1}{2}$ °.
4		9 4		20 $\frac{1}{2}$	25	27	1	
6		9 4		20	25	27	1	
8		9 4		20 $\frac{1}{2}$	25	27	1	
10		9 4		20 $\frac{1}{2}$	25	27	1	
12		9 4		20 $\frac{1}{2}$	25	27	1	
2		9 4		21	25	27	1	
4		9 4		21	25	27	1	
6		9 4		21	25	27	1	
8		9 4		21	25	27	1	
10		9 4		21	25	27	1	
12		9 4		21	25	27	1	

2	E.b.S. $\frac{1}{2}$ S.		S.E.	21	26	27	1	<i>Wednesday, 1st Feb.</i> —Commences with steady breezes, and clear. Employed at coals as yesterday. At 3 P.M. made the land, bearing, per compass, E. by S., distant 40 miles. At 4 do. weather; boatsw. employed getting anchors off gunwhale, chains up, and other necessary jobs, preparatory to bringing up: a sail in sight, standing to eastward. At 5 P.M. rounded Cape Bullen. At 5h. 20m. brought to in 13 fms.; veered away	
4				21	26	27	1		
6				21	26	27	1		
8									
10									
12									
2									
4									
6									
8									
10									
12									

to 25 fms. 7 set the watch. Midnight, do. weather. Burning Welch coals at 12 A.M.; North country do. at 1 P.M. Blowed off the boilers at 5h. 30m. P.M. At 7 A.M. ran out a warp, and commenced heaving the vessel nearer to the shore; veered away 50 fms. a more chain. At 9 commenced getting in coals; took in 41 $\frac{1}{2}$ tons; 21 men engaged from the shore, &c. This contains 36 hours.

The foregoing log gives the following results: Voyage, Teneriffe to Mayo, total coal consumed, 63 tons 11 $\frac{1}{2}$ cwt.; average per hour, 13.3 cwt.; average per hour per horse-power, 7 lbs. Distance run by log being 895 miles, and the time employed 95 hours, is 3 days 23 hours for the voyage, or 9.4 miles per hour.
 Voyage, Mayo to Fernando Po—total coal consumed, 154 t. 10 cwt.; average per hour, 11.5 cwt.; average per hour per horse-power, 6 lbs. Distance run by log being 2180 miles, and the time employed 270 hours, is 11 d. 6 h. for the voyage, or 8.1 miles per hour.

CAISSOONS.

THE following description of a temporary caisson, applied to H. M. steam vessel *Dee*, for the purpose of excluding the water whilst one of the sea-cocks was ground in afresh, by Com. W. Ramsey, R.N., displays that ingenuity under difficulty, for which our seamen are celebrated:—

In describing a caisson that was used by H. M. steam-vessel *Dee*, under my command at Port Royal, in the month of August, 1835, the simplicity of the details are such, that it may perhaps be thought by some hardly worthy the attention of the readers of the *Nautical*; but as all who may have to encounter a similar difficulty may not know how easily it can be overcome, is a sufficient reason for giving them. It is necessary first to state, for the information of those who are not much acquainted with the fittings of steam-vessels, that there are several sea-cocks, which, when turned, admit the water through the bottom of the vessel for various well-known purposes. The most common plan is to have a pipe, which communicates with the sea. About a foot from the outside of the vessel is the cock, upon which another pipe is fixed, which conveys the water to its destination. Now these cocks, by constant use, are liable to leak; when this occurs, the water flows in a stream into the vessel, and the only remedy to be applied is to remove the cock, and what is technically called grind it in afresh, and then replace it. This is, of course, effected without danger when the vessel is in dock, but it is evident, that if attempted when she is afloat, without some method of preventing the water rushing in, if the pipe inside cannot be stopped, which would be very doubtful, the vessel would fill with water.

This being premised, it may be now stated that the sea-cock on the larboard side of H. M. steam-vessel *Dee* was found to be leaking very much. It was considered that taking off the cock, and trusting to being able to stop the pipe from inside would be dangerous, besides the difficulty, perhaps impossibility, of putting the cock on again when reground, with such a rush of water as it is evident would take place, as there are no locks at Port Royal, the only plan was to stop the aperture (by which the water enters the vessel) outside, until the necessary repairs were completed.

The vessel was first given as great a heel as possible to starboard, by which the hole to be stopped was brought within four feet of the water's edge; next having procured several feet of two inch fir plank, a box was made which had three sides, and a bottom, of the following dimensions:—the back was five feet deep by four broad, the sides three feet broad, the bottom of course extending from the back to the ends of the sides. The way in which it was rendered water-tight was this: two folds of very thick fearnought boiled in a mixture of tallow and tar, was placed between each joining of the planks, and the whole was kept together by the means of iron bolts, which were driven quite through.

Now it was necessary to obtain the exact curve of the vessel's bottom, that the sides of the caisson might be cut to answer to it. This was effected by means of a long stripe of lead, which was forced during a calm against the vessel's bottom. The curve being thus

obtained, the sides and bottom of the caisson were cut to their proper shapes, small grooves were cut in their edges, and four folds of fear-nought, prepared as above, were nailed on. The nails were driven along the grooves, so that when the caisson came to be pressed against the vessel's bottom, there might be nothing to prevent a good fit. Two large cleats were then nailed upon the vessel's side, on the exact spot that the top of the caisson would be, so that once forced down into its place it could not rise again. As near the surface of the water as possible, two strong screw eye-bolts were fixed to the vessel's side, through which lashings were rove, and a tackle got all ready.

The caisson was now put over, forced down under the cleats mentioned above, the lashings encompassed it, which were hauled tight by the tackle, by which means the caisson was forced against the vessel. A small pump that had been prepared before, was then placed in it, by the aid of which, and bailing, all the water was got out of the caisson in about ten minutes, after which one man occasionally bailing kept it quite dry. Having this to work in, the aperture was soon secured, the cock taken off and ground afresh. When that was finished and put in again, the caisson, which had been allowed to fill with water, was pumped out, the lead and plank that had been nailed on to keep the water out of the ship, was taken off, and the whole business was finished without the slightest stop, impediment, or difficulty, in about forty-eight hours.

THE PRINCIPAL CONSTELLATIONS POINTED OUT BY DIRECT LINES.

“Look up, and behold the eternal fields of light which lie around the throne of God. Had the stars never appeared in the heavens, to man there would have been no heavens; but he would have laid himself down to his last sleep in a spirit of anguish, as upon a gloomy earth, vaulted over by a material arch, solid, and impervious.”—
RICHTER.

A KNOWLEDGE of the constellations being of such essential importance to navigators, we are induced to believe that a few brief directions on the subject, which do not require the extraneous assistance of globes or charts, will not be unacceptable to them. With this view we have made use of that excellent abridgment of astronomy by Lalande for our purpose, intending in another number to annex a method for knowing the planets, with some additional remarks on the origin of the names of the various fixed stars. In meeting with the almost unintelligible names which are assigned to them, the enquiring mind is ill satisfied without finding out the reasons for which they were given, and which reasons, if for their very absurdity alone, are perhaps worth knowing. We shall, therefore, make a collection of these historical fables, some of which are entertaining enough, for our readers, and will now proceed with the more useful part of our labours.

Assuming that the GREAT BEAR is known to the observer, this constellation readily points out the Pole Star; and as it is always visible in these latitudes, it will serve to indicate many others.

CASSIOPEIA is exactly opposite to the Great Bear, the Pole Star being between them; thus a line, or the arc of a circle, passing from

the middle of the Great Bear, or the star ϵ through α Polaris, or the Pole Star, will also pass through the middle of Cassiopeia on the opposite side of the Pole. Cassiopeia consists of six or seven stars, having the form of a Y, or a chair upside down. The analogy of the constellation to this figure, however, is equivocal, but Cassiopeia is sufficiently apparent, as many of its stars are of the second magnitude.

The LITTLE BEAR has nearly the same figure as the Great Bear, and is parallel to it, but in an inverted position. The Pole Star, which is of the third magnitude, forms the extremity of the tail: the next four stars are very small, being only of the fourth magnitude, but the two last of the square are of the third magnitude, and called the guards of the Little Bear. They are upon the line, which, produced, would bisect the square of the Great Bear perpendicularly to its two longest sides.

ARCTURUS, of the first magnitude, and the principal star in the constellation *Bootes*, is indicated by the direction of the stars in the tail of the Great Bear, from which it is not more than 31° distant. A line prolonged from the two last stars of the Great Bear ζ and η , will very nearly pass through Arcturus.

When the Great Bear is on the meridian, two stars of the first magnitude will be observed nearly opposite to each other, *Lyra* and *Capella*; one east, and the other west of a line drawn through the Pole Star at right angles to that from the Great Bear to Cassiopeia. Capella is east of this line, when the Great Bear is below the Pole.

The DRAGON is on the line passing from α of the Great Bear through the Guards of the Little Bear, between this constellation and *Lyra*, where the four stars of the head form a lozenge easily distinguished; its tail is between the Pole Star and the square of the Great Bear. A line passing through the two Guards of the Little Bear β and γ , falls very nearly on the star η of the Dragon: this star is between θ to the south, and ζ further north, the three being on a line passing very near the pole of the ecliptic. This line prolonged a little further towards δ and ϵ of the Dragon, will pass between α and β of the constellation CEPHEUS. A line from the Pole Star to these two stars of Cepheus passes close to the tail of the SWAN, a beautiful star which never sets at Paris.

For the winter constellations.—In the months of January or February, an observer being in Europe, will see to the southward, in a favourable position, about seven or eight o'clock in the evening, the great constellation of ORION. It is formed by three stars of the second magnitude, in a straight line, and very close to each other; these are in the middle of a very large quadrilateral figure, having two stars of the first magnitude, α and β or Betelgeuse and Rigel. By attending to this description, it is scarcely possible to mistake the constellation.

The stars above mentioned form the belt of Orion, vulgarly called *the three kings*, or *the rake*. The line of their direction serves to point out on one side *Sirius* and on the other the *Pleiades*.

SIRIUS, the most beautiful star in the heavens, is remarkable from its scintillations and brightness: it is in the east, or with respect to Orion, in the S.E. quarter.

The PLEIADES are to the westward of Orion, but a little to the

northward. This constellation is formed by a group of stars easily distinguished; they are, as before observed, upon a line prolonged from Sirius through Orion's belt, the direction of which will always render them easily to be known. They are on the back of the constellation Taurus, the bull.

ALDEBARAN, (*the eye of the Bull*), is a star of the first magnitude, situated very close to the Pleiades, on a line passing from the western shoulder of Orion γ to the Pleiades.

PROCYON (*the lesser Dog*) is a star of the first magnitude, further north than Sirius, and to the eastward of Orion: with Sirius and Orion's belt, it makes very nearly an equilateral triangle which is sufficient to distinguish it.

GEMINI (*the Twins*) are two stars of the second magnitude, pretty close to each other; they are in the middle of the space between Orion and the Great Bear. They may also be known by the line passing from Rigel (β of Orion) through the star ζ , which will fall close to the heads of the Twins. In fact, the line from the two *first* stars of the tail of the Great Bear, (ζ and ϵ), continued through the diagonal of the rectangle over the stars δ and β , will also pass towards the heads of the Twins, after having passed over one of the paws of the Great Bear. This line extended beyond the heads of the Twins, passes over their feet, which are four stars, in a straight line perpendicular to the line joining the first. The same line continued yet further, will reach Betelgeuse, or the eastern shoulder of Orion, α Orionis. A line from Rigel through γ , the western shoulder of Orion, will lead to the northward towards the southern horn of the Bull ζ , a star of the third magnitude, at the same distance from γ Orion, as γ is from Rigel, or about 14° . The northern horn of the Bull, β , which belongs also to the foot of the Charioteer, (Auriga,) is a star of the second magnitude; and is on a line passing from α , the eastern shoulder of Orion, through ζ , Taurus, 8° distant from the latter. The ecliptic passes between the horns of the Bull.

The LION may be found by the two first stars, α and β , of the square of the Great Bear, for as they serve to point out the pole star to the northward, so also do they point to the Lion to the southward, but distant about 45° . The constellation of the Lion is a large trapezium, in which one star of the first magnitude will be seen, REGULUS, or the heart of the Lion: it is in the same line with Rigel and Procyon, and 37° from the latter. The tail of the Lion, β , is a star of the second magnitude, and will be found a little to the southward of a line from Regulus to Arcturus, to the eastward of Regulus about 24° . With Arcturus and Spica Virginis, it forms very nearly an equilateral triangle.

CANCER (*the Crab*) is a constellation formed of small stars, and difficult to distinguish. The Nebulæ of Cancer is a mass of stars, less distinct than the Pleiades. They may be found by a line from the centre of Gemini to Regulus, or from Procyon to the tail of the Great Bear.

To the southward of the belt of Orion a train of stars is seen, forming what is called the sword, or the nebulæ of Orion: the direction of these stars, continued through ϵ , the middle part of the belt, passes over the southern horn of the Bull, ζ , and afterwards through the

middle of Auriga. This is a large irregular pentagon, in the northernmost part of which is Capella, the Goat. Capella may likewise be found by drawing a line through the two northern stars of the square of the Great Bear, δ and α .

ARIES, (*the Ram*,) the first of the twelve signs of the zodiac, is remarkable from two stars of the third magnitude rather near each other, the westernmost of which, β , is accompanied by a smaller star, called γ , or the first star of the Ram, on account of its being at one time the nearest to the equinoctial point. A line from Procyon through Aldebaran, will intersect the Ram 35° beyond the latter.

The girdle of PERSEUS between Cassiopeia and Capella, or between Cassiopeia and the horns of the Bull, is formed by three stars, one of which, of the second magnitude, passes very nearly through the zenith of Paris: they form an arc curved towards the Great Bear. A line from the pole star to the Pleiades passes through the girdle of Perseus; although sufficient to find it, another may be used for the same purpose, viz., the line from Gemini to Capella. A line drawn to the S.W., perpendicular to the three stars of the girdle of Perseus, or one from the belt of Orion through Aldebaran, will both meet in β , the head of Medusæ, between Aldebaran and the two brightest stars of Cassiopeia. This star called *Algol* changes its lustre every three days.

The SWAN is a very remarkable constellation in the form of a large cross, having one star of the second magnitude. A line from the Twins through the pole star will intersect the Swan on the opposite side, and at the same distance from the pole star. This remark will only be of use during the summer, when they are seen together above the horizon. Another line will be given hereafter for finding the Swan.

The square of PEGASUS is formed by four stars of the second magnitude, the northernmost one of which is the head of Andromeda. A line from the two first stars of the Great Bear, β and α , through the pole star, continued beyond the pole, will pass through the middle of the square of Pegasus. A line from the belt of Orion through Aries, will intersect the head of Andromeda; and one from the Pleiades through Aries will pass over the wing of Pegasus, γ , or *Algenib*, which is one of the four stars of the square: the two others are to the westward; the northernmost of which is β , *Scheat*, and the southernmost, α , or *Markab*. One of the diagonals of the square of Pegasus inclines to the N.W., towards the tail of the Swan, α ; the other diagonal, from Markab, α , over the head of Andromeda, points N.E. to the girdle of Perseus: it passes first β , in the girdle of ANDROMEDA, and then towards the star γ in the foot of Andromeda. These two stars, β and γ , are of the second magnitude, and divide the space between the head of Andromeda and the girdle of Perseus into three equal parts: the line which joins them passes between Cassiopeia and the Ram.

The constellations which appear in summer evenings have not so marked a character as those of winter. Nevertheless, they may be found as follows:—

When the middle of the tail of the Great Bear ζ , is on the meridian above the pole, and near the zenith, which is the case about the end

of May, at nine o'clock in the evening the Virgin's pike will be seen likewise on the meridian, to the southward, at an elevation (in Paris) of 31° : it is a star of the first magnitude. The diagonal of the square of the Great Bear, or a line through α and γ of this constellation, will intersect this star, although distant 68° . The Virgin's pike, Arcturus, and the tail of the Lion, make very nearly an equilateral triangle, and distant about 33° from each other.

A little to the right, and rather below the Virgin's pike, may be seen a trapezium formed by the four principal stars of the CROW, which are also in a straight line with Spica and Lyra.

In a line with the two last stars of the square of the Great Bear, δ , and γ , and Regulus, and 22° to the southward of the latter, is the heart of the Hydra; its head is to the southward of Cancer, between Procyon and Regulus, a little south of the same line. The Hydra extends from *Canis Minor* to beneath the Virgin's pike.

The CUP is situated between Hydra and the Crow, and west of the latter: the trapezium formed by the four principal stars of this constellation is sufficiently remarkable.

The star α , LYRÆ, is a most beautiful one, of the first magnitude. With Arcturus and the Pole star, it makes very nearly a right angled triangle, the right angle being to the eastward at Lyra.

The CROWN is a small constellation near Arcturus, on the line passing from that star to Lyra. It is easily known by its seven stars in a semicircle, one of which, *Alphacca*, is of the second magnitude. The two first stars in the tail of the Great Bear give also a line of direction for the crown.

AQUILA (*the Eagle*) contains a beautiful star, Altair, of the second magnitude, which is to the southward of Lyræ and the Swan, and is easily known by being between two other stars, β and γ , of the third magnitude. It makes with them a straight line, and they are close to each other.

ANTINOUS is a small constellation to the southward of Aquila. The line which passes through Regulus and Spica Virginis nearly coincides with the ecliptic, and continued to the eastward, intersects the remarkable constellation SCORPIO. This consists of four stars in the head, (one of the second magnitude,) forming a large arc from north to south, and also a star more to the eastward, and which is in the centre of the arc. This star is of the first magnitude, and is called ANTARES, or the heart of the Scorpion. The stars of the head, commencing in the north, are β , δ , π , ρ .

LIBRA (*the Balance*) contains two stars of the second magnitude, which form the two scales. The line of these two stars is very nearly perpendicular to the middle of that from Arcturus to the head of Scorpio, for they are situated near the middle of the interval, and rather to the southward of this line. The southern scale is between Spica Virginis and Antares: all three are very near the ecliptic. The southern scale is 21° from Spica, and 25° from Antares.

SAGITTARIUS (*the Archer*) is next east to the Scorpion in the same line as Spica and Antares, which still very nearly follows the direction of the ecliptic. Sagittarius contains many stars of the third magnitude, forming a large trapezium; two of which, with two other stars, make a second trapezium, placed in a manner perpendicular to

the first. Sagittarius is also indicated by a line from the middle of the Swan through the centre of Aquila, for Sagittarius is nearly 35° south of Aquila, and the Swan about the same distance north of it. Again, a diagonal of the square of Pegasus from the head of Andromeda, through α of Pegasus, and continued south, will point to Sagittarius. It is the same diagonal which indicates the girdle of Perseus to the northward.

If a line be drawn from Antares to the pole star, it will meet first the constellation of OPHIUCUS, or Serpentarius, and a little higher that of HERCULES. These two constellations being rather difficult to make out, must be described rather more minutely. A line from Antares to Lyra leads to the head of Ophiucus, and near that of Hercules: they are both stars of the second magnitude, the lines joining them pointing out the crown. The south-easternmost of the two is the head of Ophiucus. A line through the two heads meets γ of Hercules, 13° beyond the head, and β of Hercules is 3° N.E. of γ . A line from γ to β northward, points to δ of Hercules; and the same line, continued southward, or rather S.W., will direct to α of Serpentarius, which star, with the head of Hercules and the Crown, makes an equilateral triangle.

A line from the head of Ophiucus to the south scale of Libra passes through the stars ϵ and δ one of the fourth, and the other of the second magnitude: they are $1\frac{1}{2}^\circ$ apart, in a perpendicular direction to the middle of this line; δ is the furthest to the north-west. These stars, δ and ϵ , point in the south-west towards ζ in the western knee of Hercules, which is $7\frac{1}{2}^\circ$ from ξ , and very near the star η of the eastern knee, which is $9\frac{1}{2}^\circ$ beyond ζ to the south-east.

These stars, δ and ϵ , point in a direction a little below α of the Serpent. The group of these stars, δ and ϵ of Ophiucus, make very nearly an equilateral triangle with β of Libra, or the northern scale, and α of the Serpent. Four and a half degrees northward of this star is δ , and three degrees south-east, ϵ of the Serpent. The direction of these three stars again points out δ and ϵ of Ophiucus, 11° from ϵ of the Serpent.

The stars β and γ on the east shoulder of Ophiucus, are on the line from the head of Hercules to that of Sagittarius, a little to the south and east of the head of Ophiucus; β being 8° , and γ 11° more south than the head of Ophiucus. A line from the head of Hercules to that of Ophiucus, points towards θ in the end of the tail of the Serpent, which is 22° to the west from the head of Ophiucus: it is a changing star, varying from the third to the fifth magnitude. A line from the two eastern stars of the Crown, the nearest to Lyra, to α , Serpentarius, passes through the head of the Serpent, between γ and β of the third magnitude: this is the easternmost of the two.

The western foot of Ophiucus is between Antares and β , or the northern star in the head of Scorpio. The eastern foot is between Antares and μ , being the upper and westernmost, or the first of the arc of Sagittarius: both feet are on the ecliptic.

CAPRICORN (*the Goat*) may be found by prolonging the line which passes through Lyra and Aquila: there are two stars of the third magnitude, α and β , two degrees apart, situated upon this line, which mark the head of Capricorn; and at twenty degrees beyond them, to

the eastward, there are two other stars, γ and δ , in a position east and west of each other, and at two degrees apart: these are in the tail of Capricorn.

FOMALHAUT, the mouth of the southern fish, a star of the first magnitude, may be found by continuing the line from Aquila 20° beyond the tail of Capricorn.

DELPHINUS is a small constellation, nearly 15° east of Aquila. It consists of a lozenge, formed by four stars of the third magnitude. The line from Delphinus, drawn through the middle of the three stars of Aquila, and perpendicular to the line of these stars, leads towards θ at the extremity of the tail of the Serpent.

AQUARIUS may be known by prolonging to the southward the line from Lyra to Delphinus, about the same distance from the latter, viz., 30° , as Delphinus is from Aquila. Aquarius is a little east of this line. Aquarius extends throughout the whole space, from Delphinus to Fomalhaut. About midway between these two, this line will pass between the two shoulders, α and β , both stars of the third magnitude, at 10° from each other, and the most remarkable in this constellation.

The WHALE is a large constellation south of Aries, and below the space between the Pleiades and the square of Pegasus. A line from the girdle of Andromeda, between the two stars of Aries, will point to α in the jaw of the Whale, a star of the second magnitude, and 25° from the horns of Aries. A line from the Goat to the Pleiades will also intersect α . Again, a line through Aldebaran and α of the Whale, will lead to β in the tail of the Whale, also of the second magnitude, which is forty-two degrees further, and close to the water of Aquarius.

The square of Pegasus is sufficient of itself to point out the Whale, for a line through the two northernmost stars leads to the head, passing between the Ram and the knot of the Fishes; and a line through the two eastern stars of the square points to the tail of the Whale.

From the head to the tail a line passes between γ and δ , and a little further on, to the variable star in the Whale. This is sometimes of the second magnitude, and at others absolutely invisible. It is about one-third of the distance from the jaw to the tail.

PISCES, (*the Fishes*,) the twelfth sign of the zodiac, is the least remarkable of the constellations. One of the fishes is parallel to the north side of the square of Pegasus, under α and γ of that constellation. The other is east of the square, between the head of Andromeda and the head of Aries. α , in the knot of the Fishes, is of the third magnitude, and will be found on a line passing from the foot of Andromeda to the head of Aries, and also upon that from the feet of Gemini to Aldebaran, 40° west of the latter. It makes a right angle triangle with α of the Whale, β or γ of Aries to the south. This is the most conspicuous star in Pisces.

The rest of the constellations being very small and less remarkable, for a knowledge of them it is necessary to refer to a celestial chart or globe.

After becoming acquainted with the pole of the world, one would naturally wish to find that of the ecliptic, being one of the most remarkable points in the heavens.

The North Pole of the ecliptic is north of the Dragon's head, upon

the line passing through the two stars, γ and δ , of the Great Bear, the nearest to the tail. It makes very nearly an equilateral triangle with Lyra, and α of the Swan: it is also upon the line passing through the middle of the two first stars of the square of the Great Bear, and through the middle of the guards of the Little Bear.

Again, the pole of the ecliptic makes a triangle rectangular and isosceles with the pole star, and β of the Little Bear, which is the northern star of the two last in the Little Bear, the right angle being at β .

MORGAN'S WHEELS.

To the Editor of the Nautical Magazine.

London, 2nd May, 1837.

So, Sir, after a considerable lapse of time, long enough to dispel all recollections of our controversy, we are favoured with the "last words" of my opponent. But I cannot allow it to pass by without notice, however unpleasant the operation may be.

It appears, evidently, that his tactics are to invalidate my statements, both as to facts and calculations; trusting to the intricacy of the latter, (as they generally are on such subjects,) he ventures to hope, that by a sweeping condemnation, and a plausible substitute, he may mislead some of your readers who are not conversant with the subject, or interested therein, or perhaps not so fully acquainted with the facts as the persons to whom *I particularly* address this and my former papers; what advance he has made with the first class, I know not, but am satisfied with *my* progress with the latter. If there be any who are yet dubious and highly interested, I only ask them to go over the correspondence, and mark carefully how I have succinctly, and almost seriatim, rebutted all the insinuations against my accuracy, (except in case of Columbia, and I gave my adversary the benefit of the error.) He will there see how frequently I have been obliged to expose the absolute stolidity of my opponent on the subject on which he presumes to write, particularly all relating to the calculations, both theoretical and practical, of the steam-engine. It may be said, he cannot be expected to know such things—they are not professional. Then, why, I ask, does he presume, I say presume, to correct me, and my statements, which to all scientific persons bear the stamp of truth and accuracy? aye, and to the personal knowledge of *many* readers of the *Nautical*.

Sir, I hate poetical quotations in mechanical controversies, they are always *outré*, and invariably a signal of distress; but it strikes me forcibly, Commander Morgan must have had an eye to his own position when he penned his. The poet no doubt wished to shew us, poor mortals, that the "pride of arriving at more knowledge, and pretending to more perfection, is the cause of man's error and misery," and that "— are happy that they know no more." "Hiram" would have preferred nobler game.

The fact is, and I say it "more in sorrow than in anger," that Mr. Morgan has been the dupe of a man whose character I should

like to draw, as an example to others—a man who is now itinerating the country, and, oh! gullible John Bull! abstracting the “siller” from thy pockets for an invention to which he has not the slightest pretence or right. His first attempt was a glaring piracy of Buchanan’s; his last still more so, from one whose excellent character and sterling talent is an honour to himself and his profession; his name is in your current notice to correspondents—and if his communication there mentioned is not on this subject, I call upon him, as he values truth, his own rights, and the unblemished reputation of the “craft,” to expose and lay bare this impudent imposition and infringement on his property.

My letters are termed aggressive and personal—I deny this; when I penned my first, I did not know (from other than the Navy List) that such a person as Commander Morgan existed. I war not with him, but think him an instrument in other’s hands. If he has “rushed in” he must pay the penalty of his temerity, in the exposure of his want of knowledge and false reasoning.

I consider such productions as public property, and any member of the community has an *undoubted* right to canvass its merits or faults; but, sir, I am accused of making your pages a channel for the propagation of falsehood, and under the shelter of an *incog.* making mis-statements.

Then the antidote has been applied by my opponent; he has, agreeably to his views, corrected me; the British public is a discerning one, and my attempts have been futile. There, sir, is the “sting,” the very *truth and accuracy* of the information I have been able to collect on the subject; it is the correct *practical* diagrams submitted to you, which has caused the unwonted zeal and labour of my opponent to gainsay me.

I very cursorily notice the twaddle about anonymous writers; its presence denotes “simple weakness” and lack of argument. Why, Mr. Editor, were you to adopt the Commander’s plan, you might shut up shop, burn your presses, and destroy your types. Looking at your current number, out of seven original papers on controversial points, (pages 292 to 323,) *five* are anonymous and *two* only certified. Let me direct attention to the ideas of “Mercator,” p. 318, on this subject, though I do not fully agree.

Having thus premised, I proceed to discuss, seriatim, the injudicious and somewhat impertinent contradictions of my opponent.

Then, the Pluto *did* break down, and was sent back to that “refuge for the destitute and worn-out”—Woolwich; but, forsooth, it was merely a *failure*, the foolish experimental substitution of cast metal for case-hardened steel, and with which the public have nothing to do, (*only to pay, I presume,*) unless the patriotism and zeal of the manufacturer should induce him to make the Government a present, as we are told was the case with the Confidence. I only deal with *results*, not *causes*—my position is, “*That the principal is bad, that materials will not stand;*” *ergo, they are most expensive and inefficient.* It appears the Tartarus had not *entirely* new wheels in January, 1836, but they were taken from the vessel and removed to the shop, and I find it is commonly understood they were *generally* repaired; but it is allowed they were *fully* in their *most essential*, their working parts.

(As the commander is communicative as to price, perhaps the £. s. d. of this may be stated.)

The vessel has been in the basin for two months, to have her power increased to two 68-horse, and your readers have only to go and examine her wheels, which have been at work fifteen months only; let them observe the state of the bearings, and the twist of the whole, occasioned by the division of the shaft, and I think they will agree with "Hiram." *

Let us examine the chronology of this matter. Sept. 26th, 1834, the vessel was tried down the river, fitted with new engines (50^r) and boilers, Morgan's wheels, quite new. The bearings of *case-hardened steel*, (not the chilled metal which failed.) In December, (26th,) 1835, we again find her in the basin, having her wheels repaired with *chilled metal bearings*—a period of FIFTEEN MONTHS. She started on the 30th January, 1836, and in March, 1837, she is back again, and wheels all to pieces—a period of, say FOURTEEN MONTHS. Thus, then, in twenty-nine months!! we have a pair of new wheels, those fully repaired and worn out. Need I say more, to prove that those persons who *advise* the employment of such things are guilty of a "shameful expenditure of the public money." I insinuated nothing regarding Blazer's wheels; I stated facts, "that they were removed, in what state I knew not." It is neither fair nor manly to impute unworthy motives; but "drowning men catch at straws." In the affair of the *Confiance*, I accuse my adversary of an attempt to mystify.

I could have had no motive in making her *first* (or third MADE for the vessel) the most *improved one*. I sketched it from the vessel in 1830, and had not conceived it possible, that in so short a space as three years and a half new ones should be required, but, alas, how much has even that short time been reduced! If, therefore, I am wrong in this trivial point, it is "more my misfortune than fault;" it would have been as easy for "Hiram" to have given her *fourth* as her *third* wheel; the practical deductions as to their motion in the water would be the same, although the construction is undoubtedly an improvement, if we only notice placing the bent staves in nearly the middle of the paddle-board, (as the cranking or "stem" is in Buchanan's,) by which the pressure on the radius-rods is materially reduced. †

Therefore it results that the diagram at p. 293, vol. iv., is of the *Confiance's third*, not *fourth* wheel; and the *Pluto's*, at p. 671, vol. iv., shews them as at present made. But, in acknowledging this very unimportant error, allow me to draw your attention to my opponent's argument about the cost of all these wheels, or rather two of them, and which I stated to be £3,891.

* Morgan's wheels are not to be employed again. At first it was asked, would it cost more to fit a new pair, than to alter the beams, paddle-cases, &c. for the common wheel? but its absurdity was too apparent.

An interesting experiment is to "come off" shortly, on board the *African*, fitted with the step-wheel of Mr. Field. If it succeeds, *Tartarus* will have them, if not, the common paddle. "Hiram" thinks no advantage will result, save less *shake and tremor*.

† In my hand-sketch (page 292, vol. iv.) the paddles are shewn below the cranks only; this is wrong, and unintentional, as they should be dotted behind them. Buchanan was too good a mechanic not to perceive this simple advantage, previous to a trial.

Mr. Seaward's affidavit will be found (at page 679, vol. v.) detailed at length, and the commander recapitulates it, *but with sundry omissions*, (page 294, enlarged series.) He states the cost of the *first pair* (or *third made* for the vessel) at £1,857; that of the *improved* wheel in June, 1834, at £1,256; but, sir, he has forgotten the duplicates and repairs for the first named, amounting to £450, £196, £105,—or £751 for this item only. Then, the first cost Government, with repairs, &c., £1,857, plus £751, or £2,608; and the *most improved* in 1834 £1,256 more, or a total of £3,864, a little below Mr. S.'s statement—the difference arising in the first item £1,857, instead of £1,884. I beg to draw particular attention to this, because I am accused of inaccuracy, and my opponent makes out my case. It matters not to the public whether this sum was paid for *one* or *two* sets of wheels, all we want to know is that it *was paid*, and that to render efficient the services of *one vessel* for so short a time. But this waste of money is by no means restricted to the *Confiance*; we have very unfortunately too many instances now before us, to confine our researches to this vessel.

We now notice the diagrams, and I am enabled to prove my original position, "that neither my opponent nor his brother know the motion of their own wheels."

That of the *Confiance* comes first; and, indeed, Mr. Editor, I can scarcely condescend, or think it necessary, to reply *on this point*, the objections are so perfectly puerile, nay, unintelligible. If it is measured with a *pair of compasses*, as suggested by him previously, perhaps a slight difference may be found in the lengths of the rods and stems, arising from the difficulty in making drawings so small and intricate; and again, sir, such may arise from the method you adopt to reduce them; but, apart from all this, the difference is very small, and can in no way affect the principle of the diagram, as all those who are known to the subject well understand. His remark on that of *Pluto* is something more tangible; he has again "rushed in," and, like his brother's floats, is too "deeply immersed!"

I never witnessed so futile an attempt at a contradiction: let your readers examine the two diagrams—I have given one containing every information, "bent stems" at the "required angle," (great humbug.) the paddle and radius-rods all complete; and, to rebut me, we have an "hieroglyphic," without the slightest attempt at explanation, otherwise than, "it will shew the superiority of the new over the old wheel." Really, sir, I think we are entitled to know *how it shews it!* All your readers, according to the commander's criterion, may not come under the denomination "intelligent:" "Hiram" confesses himself one. His (the commander's) position is well chosen, calculated for advance or retreat, as chance or a new light may dictate. Can we allure him, and obtain the required information? perhaps his friends, the owners of river barges and wherries, may assist him in the matter, (see p. 472, vol. iv.) In my first diagram, p. 292, vol. iv., I say the *paddles* is shewn; (the plural is printed, and evidently wrong.)* The "paddle is shewn, each one-twentieth of a second of time, (alluding to the old wheel, Morgan's becoming too confused and intricate, when shewn so

* This must have been typographical.—ED.

minutely,) and as we all know that the path of each paddle is alike,* it becomes only necessary to develop the motion of "one." This has been my plan, and it must have been evident from the first. In the Pluto's case, they are shewn each one-seventh of a second, or nineteen positions in one revolution. Therefore no *two* floats can be in the same *corresponding* position, with reference to immersion and emersion, its *progression forward* being *variable* in different parts of its revolution, whereas the *times equal and constant*. The commander's reasoning therefore respecting the "opposite" and "contrary" positions of my paddle is futile; such is the case in the common wheel, both angles being alike; but it has escaped him, that the angle of entry and emersion of his brother's paddles are essentially different. This is additional proof that his diagram is made from "theory," not practical models; "but the ascending float is vertical, whilst the others in the water are parallel to each other"—that is *all practically vertical, or nearly so*. That, sir, is the position I wish to establish, that from their immersion to their emersion they are *nearly vertical*, and therefore liable to the objections which have been urged against such arrangements by various writers. Buchannan's, also; for who can deny that the *crank and eccentric* are different means of producing the *same result*? It is no assumption to say there is an "*essential difference*" between Morgan and Buchannan; THEORETICALLY *there is not, but PRACTICALLY there is*, for reasons previously many times given.

Delicacy should have forbidden this statement; it is well known there is a difference of opinion in the mechanical world as to the originality of the patent, and its consequent value; which is right, your readers must determine by their knowledge of the men who gave their opinions. I perfectly agree with his Honour the Vice-Chancellor, that "The alteration made by the defendant is *not* a mere colourable attempt to evade the plaintiff's patent, but one which *prima facie* may be considered an improvement, and *not* by means of the combination of the *instruments* which the plaintiff has combined together in his 'specification,' but by introducing some means *not intended or dreamed of* in that of the plaintiff."

At page 296, new series, we note—"In order that 'Hiram,' or other readers, may be convinced it is not so very difficult to make *hand sketches, &c.*" Can it be possible, sir, that on a subject requiring calculation, and the nicety of mathematical instruments, nay, even *correct models* are produced by "*hand-sketching*?" If so, the diagram on your title-page carries its own refutation, without a word on my part.

The motion of the disc, or collar on crank-pin, has escaped his notice. Turn to my diagram of the Pluto; observe that the paddle is shewn with rods and stems, connected with it through the revolution; and the least deviation in the position of the paddle would throw the end of the radius-rod out of the *waved line*. Let any one try my opponent's

* It may not perhaps be generally noticed, that *one* paddle in Morgan's wheel has a different angle and motion to all the others—that attached to the "driver." This is not the case with Buchannan's, the motion of collar, or *eccentric*, being produced by a rod attached from it to the *frame of wheel*; therefore this or the remaining are wrong. May we ask which has the "*required angle*?"

diagram in this particular, and they will perceive the hopelessness of their task. I do not wish to inflict another drawing on you, or I could expose his attempt to illustrate the subject. That of the common wheel is wrong *in toto*, (if the scale is on one-eighth inch to a foot, which the distance travelled in one revolution gives.) The diameter is shewn at 15 ft. 0 in.; it was actually 14 ft. 0 in., increased by two-inch pieces on outer edge—14 ft. 4 in. (see page 682, vol. v.) Comparison therefore is of no utility.

It has been said that the great steam-engine makers are averse to this and other improvements. This is an injustice—why should they? When anything *really* good is brought forward, it is their interest to improve its utility, as much as the patentees to manufacture it, knowing of course that the purchasers of their machines, with such advantages, must repay the additional outlay; but, forsooth, when, day after day, schemes and schemers are puffed over the country, of no earthly use, but a means to impoverish their pockets; and men who have devoted their lives to such studies, nay, have frequently laid aside the same ideas as useless, after mature consideration and *practical experiment*, which their generally immense capital enables them to do, when they express an unfavourable opinion, are immediately cried down—are creatures of prejudice and antiquity. Such error is too common, and as in the admirable work of Goldsmith in his character of Burchell, it is indeed “simple fudge.”

So much of your space having been taken up with the controversy respecting the capabilities of Soho and Flamer, and the parties principally interested, being able or perhaps have satisfied themselves by ocular demonstration as to the superiority of the latter, I shall pass over the incongruous and inapplicable comparisons of my competitor, and which stamp him as being as great a novice in naval, as he is in steam engine architecture, it being quite easy to build two vessels of the same *external* dimensions, yet one half as heavy again as the other.* But I waive this, and will feel satisfied by a reference to that excellent man, (and I believe, sir, personal friend of yours,) Oliver Lang; it is a simple question, if he will condescend to answer: Which is the best model for speed, or has the least lateral resistance with reference to the displacement? It matters not what any reasonable man will believe if he is unknown to the subject. I state fact; at her experimental draft, Soho displaced 641 tons; at such time the *upper edge* of the paddles were *above the water*, and the ship being one of

* As additional proof of my accuracy, I give Soho's burthen on experiment day—

Hull only, at launching.	317·60 tons.
Engines, boilers, and water in ditto.	160·12 „
Coals in boxes, 43; in fore-hold, 22.	65·00 „
Masts, chain, rigging, and furniture; stores, anchors, and chains	42·00 „
Pig-ballast in <i>after-hold</i> , to preserve trim.	56·00 „
	640·72 „

I also enclose the sections of both ships, drawn over each other; and you will perceive the Flamer might be carried in the Soho's hold,† with the exception of the former's length, an undoubted advantage, without taking her much finer lines into consideration.

† This statement renders the appearance of the sections unnecessary.—Ed.

passage, was *light*, although she had all steward's stores and furniture fitted, and *was ready for sea*; but their cargoes frequently vary from 70 to 120 tons; and perhaps 50 to 100 passengers, and luggage, sinking the vessel 12 to 18 inches. This then will explain my expression of "*light and ready for sea*." The paddles were so adapted, that when fully immersed they should not be too much retarded, when light, and less power required, they might be restricted, (as at experiments;) and considering this was done in 1823, I give the engineers credit for priority of application on this point; I had not considered this elementary explanation required, but the real or assumed want of knowledge on my opponent's part renders it so.

The reason why Morgan's wheels were not fitted to the *Soho* was the price offered, £1,100.

But, sir, let us suppose a case. The cost of A's machines is £1,600; but say that A, for the *sake of an introduction*, or any other cause, offers B his property for £1,100, have we not a right to give it its proper value; but £1,100 was offered; I say, even that sum decided against it. My opponent quotes part of a private letter, to prove his case true such reason was given. But I ask any man of the world, is the truth ever told on such occasions; again, such letter *was written and signed* by one of the directors, and not the secretary; therefore it is only his *individual opinion*. To further shew this, he stated in a postscript, "But this company very much wish to adopt your wheels in their next new vessel." Although his proprietors had determined to build a new vessel, I positively state a majority of the property of this company were averse to adopt these wheels, and the most influential viewed it with antipathy; therefore this director has been guilty of exciting a "false hope."

I am accused of attacking this man; I had no such intent; he was nominated a director, not their man of science; he, like many others, assumed such; I merely wished to reduce him to his proper level.

In regard to the *Columbia*, I gave my opponent the benefit of error, although I doubted the proof against me, (page 682, vol. 5.) If he properly notes the "official report," he will see she went *faster against* the tide than *with* it. It blew half a gale of wind, and medium tide was running; it is strange how accurately the mile experiments are, under such circumstances. I have note of one made on the 24th January, 1837, and the same result was obtained. I also in page 669, vol. 4, explain why she was faster with the 50' than the 60' they too deeply immersed her. I boldly state, the draft was *not* the same. I refer your readers to the above stated page, as a reply to this departure from truth on the part of my opponent.

I erred in considering *Columbia* contemporary with *Confiance*; it appears she followed *Alban* and *Carron*, but I allow little advantage from this; our knowledge has increased since 1832, having laid in *statu quo* for some time previous.

My opponent states Morgan's wheels to be in their infancy. Truly, Sir, they are very expensive "bantlings," if, after *seven* years, they are so extravagant. May I ask, when and by what means they are to arrive at maturity? All arts have been tried, chilled metal as well as case-hardened steel, and not being expensive enough, unless they use "platina" for the bearings. What is their next resort?

The Firebrand is in the position of Columbia; she was overpowered with a pair of heavy 70'. There is a discrepancy in the table at page 299, new series; and let this be observed, as it shows the drafts of water, the only data comparative has been tampered with.

It says, with the heavy 70' of the Butterly Company, (I mean no disparagement,) she is stated to draw ten feet six inches; with the light 60 of Maudsley she drew ten feet six inches and a half, and half an inch more; and at the conclusion of the paragraph we are told, "the vessel drawing LESS than expected, the engines overran themselves." Then she drew more water with the 60' than 70': ergo, was in a worse position than before, with twenty horses less power: verily, this is improvement. Should it be said, it was so arranged for the purpose of comparison, I revert to my original position, and ask, what right has my opponent to ascribe all this to his brother's wheels, since he knows not by what *force* they are revolved, other than *nominal*? He is wrong again: her velocity with 70' and old wheels was not 10.12 miles; the "orthodox" official report says, 1st day, *no steam*, velocity 9.99 miles; 2d day, *plenty of steam*, velocity 10.355 miles.

And I still hope to see the day, when government will appoint officers in this department, who can solve *actual* as well as *nominal* power; and do more on the experiment day than gaze at the external part of an engine, with an occasional glance at the barometer and steam-gauge. Not till then shall we have true science advanced, and correct results and reports. I suggest (without invidious comparison, supposing the statement true) there must have been a remarkable discrepancy in one engine, or a redundancy in the other, on which subject we remain in the dark. She is said to be an exception regarding the durability of Morgan's wheels. Well she may. All persons may not know she is an Admiralty yacht. Lightning similar, and therefore seldom employed, particularly the former; they cannot therefore be taken into consideration. Can my opponent name a regular sea-going vessel which has cost so little?

The severe treatment which my opponent has received from me, seems to have altered his plan of attack: first, he disputed the *accuracy* of the mile trials, now my erroneous deductions therefrom. He knows by a "sure mode of calculation the power employed,"—that is, as the strokes, vol. v. p. 408. I have refuted this in p. 681, and shewn it is not as the strokes. I can believe he did *not expect* this dispute; but that does not impair its accuracy.

Then we have a page of figures, proving less than nothing: and it appears he has hunted up all the "elementary treatises" on the subject he can lay his hands on. Mr. Wallace's is quoted. Sir, will your readers believe article twenty-nine is a rule to obtain "the force of steam acting on a water-wheel, as if there was the most distant analogy between the cases. But I pass this. The *resistances being as the cubes of power* is not *eagerly* adopted by "Hiram" as suiting his purpose; and although the hint is lost upon him, I trust it is not on those capable of appreciating its value. It is deduced from a large series of experiments, in which the *actual* power, as well as other requisite data, has been most carefully noticed. The Pluto's vacuum was improved in trial with new wheels for the cause—see page 681, v. 5. The comparative velocity with old wheels was given

in round numbers at ten miles only—12·90 performance, and less than actual result—10·05; the “mistake” was with new wheels; it is needless to observe this will happen sometimes to the most careful.

It is asked, would she have obtained 10·05 with the old wheels, or even 9·035, (a wide difference)? perhaps not: but would she have obtained 10·05 with Morgan, as with the common? Never!!! I allow the former most effective at “deep” immersions, the latter at “medium,” or *proper*. Are we then to judge by extremes? Let us rather canvass the merits of both, and decide accordingly. Messrs. Symonds and Otway are quoted as proof: they will not thank him for this. I have no wish to hurt the feelings of these contributors of yours, sir, but really, if we are to take their opinion as to the forms of bows for steamers, in p. 684, vol. iv., we cannot rate their knowledge very high.

I have always denied Morgan's position respecting the additional power which *he states* his wheels give. I have tried to prove the contrary. Any advantage is negated by their *great friction*, especially after a little wear and tear of the bearings: in plain common sense, can it be supposed a *machine, having eighty-two joints and bearings, will revolve with less friction than one having none at all*. There is forty-one in each wheel of ten paddles, twenty in paddles, ten bent stems and radius-rods, nine radius-rods and collar, also two bearings, crank-pin and outer frame of wheel, equal to forty-one each: there are also two more on ship's sides and head stock of engine, but these assimilate to the common wheel.

In June, 1835, the “Vestal,” Trinity steamer, was fitted with these wheels: in August, after a voyage or two, was laid up to repair. I allow this was from a defect in construction, since remedied. In March, 1837, we find her in dock, having a new pair, or as good as new, a period of twenty-one months. I have made enquiry, and find she has made an average of about fifteen passages or voyages per year, and is, therefore, in the position of Firebrand and Lightning, as to work. It is also pretty conclusive of their opinion, that this Hon. Corporation are building a new vessel, and Morgan's wheels *are not* to be used.

The reckless manner in which these wheels have been applied is astonishing, without judgment or discretion, and can only be justified on the score of expediency.

In January last, the Pluto's first wheels, repaired, were fitted to Columbia, which were a foot larger in the Polygon, than her former ones. The consequence was, that with $13\frac{1}{2}$ inches less draft, the engines were reduced to twenty-three strokes, without provision, stores, or water: with such, judging from analogy, she will go eighteen only. The manufacturer cannot, and who has the credit of this absurdity, I know not.

I shall conclude, sir, with thanking you for your admission of this controversy: it has, doubtless, done great good, and is particularly adapted for your pages. I have no personal enmity, being unknown to my opponent and his brother; my motive, an anxious wish to cleanse the public service of an abuse. I am gratified to learn that their lordships have issued orders, for tenders of various sized engines, with

common wheels. Thus, then, my *three years* is materially reduced. I now say, *Morgan's wheels* have seen their day in the navy.

I am, Sir, your obedient servant,

HIRAM.

P.S. Allow me to draw attention in the proper quarter to the case of that splendid frigate, the "Gorgon," of 1,108 tons, proposed to be propelled by a "mere spoon" of twenty feet area only: its absurdity is really so gross, that I ask them to pause in time, and not let her be sacrificed to an exploded scheme.

ON LOCAL ATTRACTION.

To the Editor of the Nautical Magazine.

Woolwich, June 17th, 1837.

SIR,—In your number for April, (p. 247,) you have given a short notice of the history of the discovery of the local attraction, in which you ascribe the first notice of the phenomenon to Dampier. You will allow me, I am sure, to correct this statement, in which you have fallen into an error.

Dampier returned from his voyage round the world in September, 1691; and his account of it was published in 1693. If, then, the phenomenon had been distinctly noticed in print, and assigned to its true cause at an earlier period, the claims of Dampier must fall to the ground.

Captain Samuel Sturmy published in 1667, his "Mariner's Magazine," or at least his preface, is dated November 10 of that year. The copy before me is of the fourth edition, edited by "John Colson, Teacher of Mathematics, in London," printed in 1700; and this would shew that the matter was well known then, as the subjoined extract will prove. I have in vain sought for the first and second editions of this work; but the third, bearing the date of 1684, is in the British Museum, and the same paragraph occurs, literally, in that edition. This, therefore, preceded Dampier's published notice, quoted in the Nautical Magazine, by *nine years at least*. Should the passage be found to be in Sturmy's original edition, the antidade of Dampier will be *twenty-six years*; but at any rate, the knowledge of it by a landsman nine years before Dampier's publication, will prove it not to have been of very rare knowledge amongst seamen at that period. The form of the passage, however, clearly shews it, in the absence of my power, to refer to the first edition, to have been Sturmy's own remark.

"Secondly, men many times commit great errors in bad steerage, and careless looking to the compass; for I have known many seamen, when their trike at helm hath been out, and the log hove, they have told the master or his mate, they have steered half a point a-weather the course; besides the points of the needle or wyers being touched by the loadstone, are subject to be drawn aside by the guns in the steerage, or any iron near it, and liable to variation, and do not shew the true north and south which ought constantly to be observed

by a good azimuth compass, so the variation ought to be carefully allowed."—Mariner's Magazine, third edition, page 124, and fourth edition, page 94.

It is really unaccountable that any passage, so distinctly expressed as this is, should have been overlooked by subsequent inquirers on the subject of local attraction. A work, whose very title would call the attention of writers on nautical subjects to it, which went through four editions in thirty-three years, cannot be so very scarce as not to have fallen into the hands of some of them. The *unfounded conjectures* of some other writers have been liberally quoted by the historians of this branch of inquiry; but this one, in which the cause is distinctly assigned, has been systematically kept out of sight by those who knew the accuracy of Sturmy's views. Though this might not have been the result of design, it is at least a proof of very inadequate research amongst men who were bound, from taking the character of historians, to make all possible inquiry into the works which existed on the subject.

The passage quoted from Sturmy also bears upon another statement in the Nautical Magazine, p. 248; inasmuch as the "excellent system of obtaining the true bearing, by an angle referred to the sun's azimuth," could scarcely be first employed between 1780 and 1793 by Beaupre, when it was pointed out by Sturmy more than a century before.

Again, with respect to the magnetic variation charts, though there is no reason to doubt the accuracy of the history of them usually given, I cannot but think there is much reason to doubt the accuracy and honesty of the charts themselves. Those who are acquainted with the difficulty of making a good observation, even of the variation, are well aware of the *utter impossibility* of the lines traced upon any of the charts, or upon Mr. Barlow's variation globe, (MS. formerly, if not now, to be seen at Carpenter's, Regent Street,) being the result of any fair discussion of any recorded observations that exist. These observations have been made at different times upon a changing quantity by different observers under very different circumstances; and yet this appears to flow in lines as regular as if the curve had been traced from some specific quarter, or generated according to a given and simple law! I would appeal to yourself, * sir, who, from your peculiar offi-

* [We would not be supposed for a moment to question the correctness of our correspondent's opinion on the subject, when looking on it in the light of *rigid accuracy*. But, to derive those advantages from a science, in which but little advance has yet been made, and which advantages are applicable to the all-important art of navigation, we must take that science as we find it. On this account, therefore, we hold that the compilation of *variation charts*, which must, from their very nature, be liable to error, is well worthy of those philosophers who have devoted their time and attention to them. The labours of Hanstein, Barlow, Sabine, and others, are well bestowed in this respect, inasmuch as they supply the philosopher and the navigator with a general view of the variation curves; to assist the former in his theories, and the latter to warn of the change of an important element in navigation. And what, if they be not correct? what, if they be derived from observations with different instruments in different ships, and at different dates? Does "*Philo-Veritas*" expect that he will ever see a variation chart of the whole world, composed from observations with the same instrument, in the same ship, even in the least possible interval of time? We cannot suppose it. If such a one be ever produced, he who knows the subject so well, must know that if the observations be rigidly followed, such a chart will be full of anomalies, arising from local causes in the ever-varying features of the surface of

cial position, are well qualified to judge, whether the recorded variations at places the most favourable for observation, do not differ, in many cases, to the amount of a whole degree or more. If these charts do not form a beautiful specimen of the *legerdemain*, which Mr. Babbage calls "cooking," I do not know where we are to look for one.

Had, indeed, the points which are tolerably well determined, been laid down on a chart or globe, and the conjectural points, and those less certainly determined, been distinguished from them, the conjectural lines traced through them might have been useful; but all are here mingled together; and it is utterly impossible, by any marks introduced into any of these charts, to ascertain the degrees of importance due to any points in the several curves. In these charts they are all alike set down as indubitably correct lines, and all the points have equal certainty in their determination.

While on this subject I may remark, that the data from which Mr. Barlow constructed his chart were offered to a distinguished inquirer into the laws of magnetism, for the same purpose; but he, seeing no hope for any possibility of accomplishing the task in a satisfactory manner, declined it. Mr. Barlow, however, found none; and hence we have his chart and globe scored over with lines, whose very regularity is so suspicious, that any other argument on the subject becomes altogether needless.

Much has been said on the value of Mr. Barlow's correcting plate. I am not disposed to enter upon any examination of either his experiments, his reasonings, his contrivances, or his candour and originality, in this place: but I may remark, that a more severe scrutiny into his labours than has yet been made, is due to science, and to the public service. I am not without hopes that these may be investigated ere long in a satisfactory manner; but this can hardly be done without a commission or a committee of parliament, competent to examine evidence, and to publish what they obtain. I should think a commission the better plan, as this may embody men capable of examining the evidence itself, and those who give it in a manner calculated to elicit the true value of the information offered, with more searching rigour than any committee of parliament, as that body is now constituted, could exercise. If Mr. Barlow come through such an ordeal with honour to himself, it will be better for his own fame, than to be, as he now is, resting under the suspicion of no ordinary degree of "cooking" in the experiments which he has published on some of the fundamental laws, by which his correcting plate is affirmed to act. If it shall, on the contrary, be found that Mr. Barlow is inconsistent with himself,

the globe. What then is left to be done, but for the philosopher to collect together all (and why not all) the observations within his reach, to reason with them before him, and making due allowances for the disagreements of instruments, (which always will disagree,) the certain effects of local attraction and errors of observation, to trace on a chart what he considers to be the actual curve of the magnetic meridian. This is his part: and it is that of the navigator to profit by his assistance, not in relying implicitly on it, and so neglecting his azimuths and amplitudes, but where he cannot get these, to avail himself of a knowledge of the progressive change in the variation, which his chart will inform him must arise from his change of position. To the philosopher such a chart has other purposes. We cannot, therefore, join "*Philo-Veritas*" in his hypercritical views of variation charts, and if we are not mistaken, he will have to alter them.—ED. N.M.]

as well as with better authorities, the sooner this is completely determined the better. In either case, science and the community will be gainers by the certainty which would thus be given to one side the question or the other.

I have the honour to be, Sir,
Your very obedient servant,
PHILO VERITAS.

**ON THE PRESENT NEGLECT OF THE DEEP-SEA AND HAND LEADS,
*the Cause of Disasters to Merchant Ships, in the Approaches to
the Thames and Entrance to the British Channel, from the North
Sea.* By Capt. K. C. Martin.**

MY attention has been continually drawn to this subject during the last ten years, from repeated evidence which has come before me, as one of the lord warden's commissioners of salvage, as well as in the execution of my official duties as a harbour-master, at our port of refuge, Ramsgate.

It is lamentable to suppose, that as nautical science advances, practical seamanship declines. Or, that as sands and shoals are buoyed, beaconed, and lighted, as far as maritime skill can devise, or human ingenuity can execute, such benefits should be neutralized by carelessness, or apathy on the part of those who are entrusted with their country's dearest interests, namely, the property of her merchants, and the lives of her brave sons. And yet, the startling fact appears before us,—an increase of loss by shipwreck, a degeneracy in our merchant marine! They do not seem to be taught as of old,

“By practis'd skill, o'er bar and shelf to sound,
With dext'rous arm, sagacious of the ground.”

However we may be puffed up by a false conceit in modern improvements,—and great indeed are the aids extended to us by mechanical inventions,—however we may affect to despise our tried and valuable auxiliary, THE LEAD, it is no less certain that it is a seaman's greatest safeguard in pilot's water, and that nine accidents out of ten attributed to error in judgment, arise from a culpable neglect of its use.

I remember very well some of the old north-sea pilots, when I was a young officer in the hired armed service. I remember full well their tenacity in correcting our reckoning by their regularity in sounding. Our old pilot, Sam. Draper, when asked at noon, “Well, Loot, where do you make her now?” would clap his broad hand upon the chart, covering up at once a degree or two of latitude and longitude, and most significantly call out, “Get a east of the lead Ba!” then, withdrawing gradually all but the point of his fore-finger,—“There she is to a naffy graffy Ba: ye'd a grate difference in yere reck'ning! Bad look out!—bad steerage!—false horizon!—but the tail-end of the Dagger Bank has'nt altered for many a year. We had many cavils with old Draper, but his knowledge and attention to a regular course of sounding was our preservation from shipwreck or prison more than once.

I need not remind the careful mariner, that there are several points in the British seas, where the tides meet and unite, and where they are also influenced by the tributary streams of the great rivers, which pour into them with ever-varying strength, and which are also themselves affected, particularly during the dreary seasons of winter, by land floods, melting and breaking up of ice, and other causes; but most of all, by the effect on the great tidal wave of those uncertain and unceasing changes of wind in these latitudes. I have seen the tide-flag displayed the whole of the low-water at Ramsgate harbour; and I have also seen it a matter of doubt whether it could be hoisted with propriety at high-water. Under such circumstances, the course and strength of the stream, as well as the level, was affected, and several miles more easting or westing in a day's log would be the natural result. With such charts as we possess in the present day, indicating the nature of the bottom with great accuracy of depth of water, regular attention to the soundings will correct these variations in a ship's course, and in a great measure secure her safety. The mariner should also be careful to attend to the different times of tide in which he sounds, and also the prevailing wind, which will often, as shewn before, make a difference of a fathom over the surface of the British channel. Our tide-gauge will shew a greater rise of water at neap-tide, with a northerly wind, than at the top of the springs with a southerly gale. Surely, these are among the varied causes of error in the dead-reckoning, and merit the serious consideration of the scientific mariner.

Another and very fertile cause of error, is the depending too much on the unassisted judgment, as respects distance (where cross bearings cannot be obtained) of light vessels, headlands, and so forth, and here, in most instances, a cast of the lead would determine with precision the position of the ship. As our winds are changeable, the temperature of the atmosphere must be so; it being the cause, they the effect. And from these also proceed that very remarkable optical delusion we so often witness upon our coast, the mirage, and ever-varying refraction. Many are the instances related to me of this deceptive power, but I will detail one out of numberless others which I can myself bear testimony to.

On the evening of Saturday, the 27th of May, in the present year, the French land, as seen from Ramsgate pier, would have conveyed in idea, a distance of about three to four leagues, being less than half the expanse of water which lay between them. With one of Dolland's three-foot telescopes, all the principal features of the soil, the roads, the city of Calais, with its churches, and tower of the Hotel de Ville, were distinctly seen. In the E.S.E. the horizon presented the similitude of a line of forest trees; on applying the telescope to these objects, they were immediately recognized as a large fleet of mackarel boats, lifted by refraction considerably above the line of the true horizon. About an hour before sunset this fleet faded away from the sight, and a clearly-defined and purple line resumed its proper boundary. At sunset the chalky cliffs of Blancness and Scales still preserved their bold appearance; and I could define the spires of the different villages till twilight spread its grey mist around them. At nine in the evening a naval officer called at my house on the pier, and

requested I would come out with him, to observe Calais light. Its appearance at that time was prominently beautiful; its periodical revolutions adding to the interest it excited, and its approximation in apparent distance, being within even the Goodwin and Gull lights. This extraordinary effect of refractive power in the atmosphere continued till after midnight, when a light breeze from the southward sprung up, and nothing could be seen in that direction, but the strong dark sea-line of the horizon.

I had remarked to Lieutenant Grey how very deceptive these phenomena were in so intricate and dangerous a navigation. At daylight, though clear to seaward, nothing of the French land was visible, but the first thing that greeted my eye, was the Deal and Ramsgate boatmen, repairing with all speed to the assistance of the ship *Magellan*, who, being from Antwerp, bound to New York, had, during the night, run upon the Goodwin Sand. The weather continued moderate, and she got off without any serious damage. When our Ramsgate boatmen returned, I asked them, How came the ship there? They replied, the crew had told them, they fancied themselves close over upon the French coast, and they mistook the Goodwin lights. By this it appears that objects to the eastward of the ship, (or an observer,) were under the influence of refraction; but to the westward they were not at all lifted or magnified by the density of the surrounding atmosphere, and I was the more determined in this conclusion by the following circumstance:—

Some of the before-mentioned fleet of mackarel boats came in with fish; I asked them how the North Foreland bore off them at sunset the evening before, and they replied, that they were a long way off in the S.E., and could not see the North Foreland. Thus the refraction in that direction had lifted them within range of our vision at Ramsgate, although we were many miles without the scope of their's, being in the N.W., and between them and the direction of the rays emanating from the setting sun.

Is it too much to say, that a regular course of soundings might have prevented the accident which had nearly terminated in the loss of the *Magellan*, or how are we to account for her getting on shore with a night so clear, and objects so strongly defined? If the lead had been more attended to, the course of the vessel over the ground would correct these interruptions. It is idle to depend upon one resource, when more are at hand. Again, how often are compasses affected by accidental causes. In the autumn of 1835, the commander of a Dutch ship from Amsterdam, bound to Batavia, assured me that he had been led out of his course, and would have struck upon the edge of the Long Sand, but for his soundings. His compasses had been worse than useless from the effect of *aurora borealis*; and my friend, Captain Grover, F.R.S., being at Paris in the same week, observed the effect of this phenomenon on the magnetic needle in a very great degree. A similar occurrence took place in December, 1836. Two Russian ships, belonging to the same owners, sailed from Gamla Carleby for the Mediterranean. The *Amanda* left three days after her consort, the *Anna Catherina*. After crossing the North Sea, they became entangled among the shoals which form the entrance to the Thames, lost their rudders, and were brought into Ramsgate harbour by fishermen.

They had not seen each other on the passage ; each supposed himself, from the course he had steered, upon the opposite coast, among the Flemish banks, sixty miles to the S.E. of their real position. When I told the captains respecting the Batavia ship, it immediately occurred to them that the aurora borealis had been very frequent and brilliant with them on their passage across the North Sea, and might have caused a deviation in the compass courses.

It may be said these are isolated cases. I answer, "Better twice about than once ashore;" and no warning is equal to that given by the leadsman. With the prospect of a fine passage from land to land, the soundings are too often neglected ; difficulty and danger suddenly arises, and it is regretted when too late : and should these humble remarks of a retired sailor, still anxious for the safety and credit of his professional brethren, stimulate to a better look out, he will be amply repaid for the little information he has been able to afford upon so momentous and interesting a subject.

Royal Harbour, Ramsgate, June 16th, 1837.

[We trust that these important and convincing observations of Capt. Martin's, on the proper use of the lead, will have the effect intended among our merchant shipping. We can inform their commanders that no man-of-war is ever without a hand in the chains when navigating the parts alluded to ; and that the sentence of a court-martial on the captain would recognize this as almost the first measure required by the articles of war, the neglect of which would be attended with serious consequences to him. It is a subject which, in the loss of merchant shipping, should be always well looked into.—ED. N.M.]

ON THE PROTECTION OF SHIPS FROM LIGHTNING. *By William Snow Harris, F.R.S., &c. &c.*

No. III.

Objections to the Employment of efficient Conductors of Electricity in defending Ships from Lightning, considered.

31. THE objections advanced to the use of lightning conductors, more especially on ship-board, are principally these : it is said, that by providing ships' masts with good conductors of electricity, we invite an electrical discharge from the atmosphere ; that in virtue of a specific attraction for the matter of lightning, which it is assumed all metals possess, the explosion is drawn down thereby exclusively upon the vessel ; that without the pointed conductor the vessel might escape, or the discharge not occur ; that inasmuch as we can never estimate the absolute quantity of electricity which may be evolved in a thunder-storm, it is possible that the transmitting power of any conductor we can apply, may be inadequate to the purpose of defence ; and that hence fatal consequences may result.

32. Such are the most important objections which have been advanced ; and which I am led to hope have been fairly stated ; they are undoubtedly deserving of serious attention, and it will be my endeavour, by a candid inquiry, to give them all the consideration which they appear to demand, keeping always in remembrance the

beautiful aphorism of Lord Bacon, "Man, who is the servant and interpreter of nature, can act and understand no further than he has, *either in operation, or in contemplation, observed of the method and order of nature.*"

33. The notion that a lightning rod is a positive evil, seems to have arisen, rather out of assumptions, and facts partially considered, than from any knowledge acquired by a copious and general induction from experience. Thus, in consequence of the passage of the matter of lightning through the points of least resistance, (21) it has been observed to fall most frequently on bodies which least oppose its progress : metallic vanes, vane spindles, iron bars, knives, and pointed metallic substances generally, are therefore very frequently found in the track of the discharge. It is, indeed, solely from this circumstance, that metals have been especially considered as attractors of lightning, and calculated to draw it down upon substances in connexion with them.

34. It will be found, however, on examination, that the action of pointed, or other metallic conductors, is purely *passive*; that they merely afford an easy transmission to the matter of lightning, which is, in fact, already present, and is operating rather *on them* in common with other bodies. So that their action is at best of a negative kind; and they can no more be said to *attract* the matter of lightning, than a water-course can be said to *attract* the water, which necessarily flows through it at the time of heavy rain; and as in the latter case the water is drawn down by a force not existing in the channel; so in the former, the electric fluid may be conceived to be determined to a given point by a force not existing in the metal. It would be absurd to say, "that a hollow water-pipe, open at its upper end, and placed perpendicularly, attracts, solicits, or invites rain from the clouds;"* or that in providing our houses with such pipes, we incur a greater risk of being inundated, because they are calculated to discharge freely all the rain which pass into them; no less absurd is it to say, that a metallic rod invites lightning, and may be productive of damage, because it is calculated to transmit the electricity which falls on its point.

35. It may still further be reasoned, by analogy, that as the quantity of water transmitted, depends upon the capacity of the water-course, and the final protection it affords to surrounding objects in conveying the fluid, on an adequate extension in length; so on the other hand, the protection afforded by a lightning rod will be found to depend on *its* capacity, and on the completion of its extent between the points of action, (21). If the channel be not present, the water may flow in an irregular and uncertain manner; or if its continuity be frequently interrupted, or narrowed in any portion, damage may be supposed to occur at the contracted points.

36. Such is, in fact, the way in which substances of the conducting class above-mentioned, (15,) may be conceived to operate in transmitting discharges of lightning; indeed, if we reflect on the electrical conditions of a thunder-storm, (19,) we may immediately perceive, that it consists in an intense action between a portion of the earth's surface, and the contiguous atmosphere; it can in no way be

* The Earl of Stanhope's Electricity.

considered as an exclusive operation between a ship and the clouds, or between the latter and any given mass of metal in the vessel. The ship is assailed by lightning only in consequence of its forming a point in one of the great electrified surfaces, (19); even its elevated parts, as compared with the extent and distance of the charge of clouds, are inconsiderable, and it must never be forgotten as an *important feature in this discussion, that whenever we set up any artificial elevation on the earth's surface, we do in fact set up a conductor of electricity, (15,) upon which discharges of lightning will sometimes fall, and no human power can prevent it:* hence if metallic bodies be present, and placed in prominent situations, these will be first assailed; if not, then the electric matter will fall on bodies next in conducting power, and so on: *the mast of a ship, from its position alone, therefore, must necessarily determine a discharge of lightning upon the hull of a vessel.*

37. An appeal to *experience*, from which we should never depart, in discussions of this kind, will very completely confirm the truth of what has been just advanced, and clearly shew—that ships are equally liable to be struck by lightning, whether equipped with lightning-rods or not, or whether their masts terminate in metallic points or not; hence, it cannot be fairly inferred of metallic bodies, that they possess a *positive* attractive power for the matter of lightning, (31).

(v) An interesting and curious illustration is given in the *Memoirs of the Count de Forbin*, and printed in the forty-eighth volume of the *Royal Society's Transactions*. “In the night,” says the author, “it was extremely dark, and it thundered and lightened fearfully; as we were threatened with the ship being torn to pieces, I ordered the sails to be taken in; we saw upon different parts of the ship above thirty St. Helmo's fires; amongst the rest, there was one upon the top of the vane of the mainmast, more than a foot and a half in height. I ordered one of the sailors to take it down. When this man was on the top, he heard this fire; its noise resembled that of fired wet gun-powder. I ordered him to lower the vane, and come down; but scarcely had he taken the vane from its place, *when the fire fixed itself upon the top of the mainmast, from which it was impossible to remove it.*” From this case it is clear, as just stated, (36,) that if metallic bodies be present, they will be first assailed; if not, the electric fluid will fall on the next best conductors, &c. &c. (36).

(w) His Majesty's ship *Milford* was struck by lightning in *Hamoaize*, *Plymouth*, in January, 1814, and the temporary mast fixed in her greatly damaged. This ship *had not her lightning conductors up at the time*; they had been incautiously removed on the previous day, in consequence of some contemplated repairs to the mast. Now, there were a great many ships in the ordinary, some of them *close to the Milford, and all of them having lightning-conductors, terminating in prominent metallic points*; there was also a powder-magazine on the shore, not very distant, likewise furnished with this means of defence—neither of these were struck by the lightning. In fact, the *Milford*, the only ship in the vicinity of the discharge, not armed with lightning-rods, was the only one damaged.

(x) His Majesty's ship *Norge*, at anchor in *Port Royal Harbour*, *Jamaica*, in June, 1813, was severely damaged by lightning, so that

she was completely disabled in her masts and rigging. The *Norge*, when struck, had not her lightning-conductors up. Several ships with conductors were near, but none of them were damaged by the lightning, *except a merchant-vessel, which, like the Norge, had not any protection.** Amongst the other ships, was his Majesty's ship *Warrior*, of seventy-four guns, which ship was lying close to the *Norge*. The electric fluid was observed, as appears by an interesting account given by Admiral Rodd to Sir Byam Martin, "to absolutely stream down the conductor into the sea."†

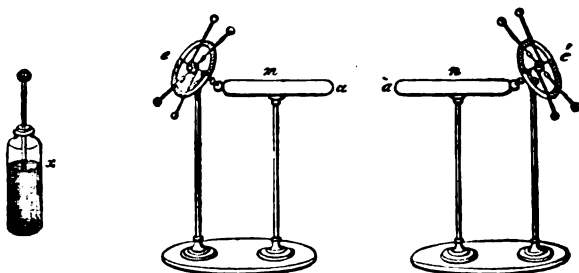
(y) To the instance already given of H.M. ship *Ætna* having lightning-conductors, and struck by lightning in the Corfu Channel, without damage, (s) (22) may be added, the circumstance of H. M. ships *Madagascar* and *Mosqueto*, which were near the *Ætna*, and had not lightning conductors in place; both these vessels were repeatedly struck by the lightning, and considerably damaged.

(z) The Heckingham Poor House, damaged by lightning in the year 1781, was struck at a point the farthest removed from the conductors with which the building was furnished,‡ and a similar instance occurred in a long building at Tenterden, which was struck by lightning at one end, a conductor having been applied to the other: that is to say, the electric fluid also fell upon a point the furthest removed from the assumed point of attraction.

(a) We have already alluded to the case of the packet ship *New York*, (22) (t) (u), which also furnishes a remarkable instance of lightning having assailed a ship, both with and without a lightning chain fixed to the rigging.

38. In addition to the above illustrations, from experience, of the operation of lightning on ships, and which may be considered as so many experiments on the great scale, it may not be altogether useless to exemplify, artificially, the influence of electricity on conducting bodies, and its disposition to pass equally upon them, although differing considerably in conducting power.

Exp. 1. Communicate an electric charge to the insulated metallic cylinder *m*, by touching it with the charged ball of the small jar *x*.



Oppose one extremity *a* of this cylinder to the extremity *a'* of a similar cylinder *n*; the distance *aa'* being carefully observed. Let each of

* Captain Woolridge, R.N.

† Letter from Admiral Rodd to Sir Byam Martin.

‡ Transactions of the Royal Society.

the cylinders m n have an electroscope* e \hat{e} attached to their distant extremities, as shewn in the figure; then the comparative charge may be estimated by the divergence of e , and the influence of m upon n , by the divergence of \hat{e} . When the distance a \hat{a} is such as to bring the conductor n within the influence of m , observe the degree of divergence of the electroscope \hat{e} ; which done, remove the metallic cylinder n , and substitute for it a cylinder of wood, of the same superficial dimensions, when it will be immediately perceived that the divergence of \hat{e} , connected with the cylinder of wood, is precisely the same as when connected with the metal.

Exp. 2. Withdraw the cylinder n , and charge m as before; when charged, observe the degree of divergence of the electroscope e . In this state, let the metallic cylinder n , and electroscope \hat{e} , be caused to approach m , so as to gradually decrease the distance a \hat{a} between their opposed extremities. The indication of electroscope e , will gradually become less; whilst the electroscope \hat{e} will acquire an increasing divergence. Let the influence of the neutral conductor n upon the charged conductor m be carefully observed at various distances a \hat{a} , and then substitute for n the cylinder of wood above mentioned. It will be then found that the same degree of influence obtains in each case, whether the body n be wood or metal.

39. The rapidity with which this action is propagated through imperfect conducting bodies, such as wood, may be observed, by placing one of the electroscopes, in connexion with a slight spar of wood, of thirty or forty feet in length, suspended by silk lines. If the charged jar be, under favourable circumstances, brought within a short distance of one end of it, the electroscope will immediately diverge at the other, although no actual communication of electricity has taken place, as may be seen, by again withdrawing the jar, in which case the electroscope will close.

40. It may be fairly inferred, from the above experiments, as already stated, (21,) that, previously to the exertion of any attractive force, between a charged and neutral body, the latter is first rendered attractable, and then attracted; the observed attraction, therefore, is the result of the law above mentioned (21); viz., the disposition of the electric matter to a state of proportionate distribution, until an equilibrium of force ensues in all directions; and that, in effecting this, it *marks* out, as it were, *in advance*, by a wonderful influence, operating at a distance the course it is about to follow (21).

41. Since, then, the conducting power of bodies differs only in degree, and that the force to which they become subject, depends on a great natural agency, quite independent of them, we may expect to find all bodies liable to be assailed by lightning, and the effects the most felt, when the conducting power is imperfect; it is, in fact, from the slow transmission of the electric matter when it falls on them, that damage to the less perfect conductors so frequently ensues, the electric diffusion not being accomplished with sufficient rapidity. It is quite in accordance, therefore, with the above facts, to find cases on record, of trees and rocks rent asunder by lightning, as also of ships being struck and damaged, when iron spindles, and the like, have not been

* For a particular description of the electroscope, see the new edition of the Encyclopaedia Britannica, Part XLVII. p. 657, art. Electricity.

fixed in their masts;* as also to find animals, even in a plain and open country, struck down and killed, when the electric fluid falls on the surface of the earth.†

42. The passive attraction of which we have been speaking, and which seems common to all conducting bodies, must be therefore carefully distinguished from the hypothetical attraction above-mentioned, (31,) and by which metallic substances are assumed to possess a specific action on the power of lightning—an assumption quite disproved by the facts just stated (37,) (38).

SHIPS AND PATENTS.

To the Editor of the Nautical Magazine.

June, 1837.

SIR,—In my former observations on this subject, I endeavoured to shew, without in the least detracting from the merit of the ingenious inventors and inventions, for which patents have been taken out, that they have been wholly useless in preventing shipwrecks. In short, that, whilst nautical patents had greatly increased, shipwrecks had also increased, amongst any given amount of merchant shipping. I attributed the shipwrecks to a cause which is wholly beyond the power of patents to reach or remove. An article which appeared in the Metropolitan Magazine, on “Marine Insurance, as it at Present Operates upon the Construction of Merchant Vessels,” gives so clear and intelligible a view of the cause producing this effect, that I hope you will give publicity to an extract from it in the Nautical, and thereby bring it under the notice of many of your readers who may not otherwise see it. The whole article is well deserving of perusal and serious consideration, but the following is the extract I more particularly refer to: “We have always, in our legislation, too much regarded property, life too little. If we should entrust to the care of the proprietor of a stage-coach a frangible package, such as glass or china, and by either the incompetence of the coachman, or the ill condition of the coach, it becomes damaged or destroyed, we are able to recover the full value of it; but if the said coachman, by his negligence or his incompetence, breaks our neck, our surviving relatives or representatives have no remedy, though our life might have been worth thousands per annum to our family. But this egregious discrepancy is carried still further in its absurdity, as regards the trackless road of the ocean. Against the mismanagement of the captain, master, or the incompetence of the vessel or crew, the passenger has no remedy for either life or property, excepting insurance, which only tends to make those entrusted with them more reckless of both.

“But to return to the awful expenditure of human life through the malformation and slight construction of the generality of our merchant vessels. The seamen that navigate them are essentially offered up to

* The learned French philosopher Coulombe, found, that an equal division of electricity eventually takes place between two bodies of equal surface and similar form, whatever may be the kind of matter of which they consist.

† Transactions of the Royal Society, vol. 49 and 69, Damage done to the *Shear Hulk* at Plymouth, and on board the *Atlas East Indiaman*.

the shrine of mammon. As we before observed, vessels are classed at Lloyd's, not by their actual strength, or their intrinsic means of resistance to the perils of the winds and the waves, but simply by their newness. It is, therefore, the interest of builders to construct, and merchants to employ, ships that are continually, and so slightly run together, that there shall be no chance of their ever getting old. A.1. is the puff for the freight. The consequence of all this is, that the ship-owner has no inducement to purchase or contract for the building of a strong and safe ship: she will be liable to become old in the first place; and secondly, she must, of necessity, cost him more money than a weak and an unsafe one; and as he will get no abatement in the insurance for a strong ship, but an increase, if his ship is so strong as to become old, he has every inducement to purchase such mere ricketty sieves, as will just save appearances; and thus not altogether unknowingly, sport with the invaluable lives of that class of men, to which England owes all her greatness.

“ We wish every lover of his country to contemplate the enormity of this system—a system, that really and truly rewards contingent murder by wholesale, with great gain, and pours fortune into the lap of the luxurious and comparatively idle landsman, at such a vast cost of life to the hardy and laborious sailor.

“ When the seaman enters on board a merchant vessel, he has no means of ascertaining its sea-worthiness. It may be gaudily painted, and have exceedingly pretty decorations carved about the stern, with a most enticing figure-head; but notwithstanding all this, he may be, even whilst he is admiring the smartness that every where attracts his eye, stepping on board his coffin. If the ship-owner and the merchant be so amply protected by the underwriter, and the underwriter by his premium, surely honest Jack,—to say nothing of casual passengers,—honest Jack, who adventures his all, that is, his life—and how precious is that all to the nation! should by the nation be protected.—It is a consideration of an importance almost vital to the country. For this protection, justice, fair play, morality, loudly call. Surely, the sympathies of his countrymen should, yes, and will, make that call impressive. Do not let the poor fellow be drowned like a rat, in order to save a few pounds to Aaron, Isaacson, Abraham, and Co., when he might, in some future emergency, face undauntedly the shot of the foe, and perhaps turn aside invasion, and convert the approach of an enemy towards our shores into a defeat upon his own.

“ But it is to government that the nation has a right to look for a remedy to this crying evil, this sin of many fearful contingencies. From the faulty construction of merchant craft, we lose, at least, a thousand good sailors yearly; men, who would be always ready and willing to fight our battles. The bereaved families of these poor fellows, who are thus daily sacrificed to a false notion of securing property, would be no longer burdensome to the community; and, above all things, by removing the extreme hazards of the sea-faring life, many more valuable persons, and those of a class more respectable, would be induced to embark in it. Let us not tempt that protecting Providence by being not only unjust, but even heartlessly cruel in neglecting seamen, the very instruments of carrying on our commerce, in the abandonment of their lives to the indifference of interested individuals. If

we disregard our merchant seamen thus guiltily, ought we to be surprised if God disregards us?"

I regret to observe that Mr. Buckingham's Mercantile Marine Bill, constituting a marine board, has been thrown out. This appears to have been owing to the bill embracing too many details. I think it did do so. But I am happy to observe, that of all those who spoke against it, no one contended against the principle of it, or the necessity that existed for some legislative interference in the case. This will become more apparent, as the public understand it better. Although, like slavery, the factory system, or other questions affecting the interests of large classes of the community, it may be difficult to introduce a better system for the safety of our merchant shipping, still there is an effect of the present vicious one, which must speedily cause its termination, when it becomes known to the public. I mean the destruction of human life with which it is attended, and which might easily be prevented. Neither slavery nor the factory system ever directly produced this effect, and consequently this must be a powerful accelerating motive for effecting a change.

Unfortunately, the public has not, till within these few years past, given the subject the least consideration, but has reposed full confidence in merchant ships, being made as strong as skill and labour could make them. The public were, and still it is to be lamented to a very great extent, are, ignorant, that by having his vessel fully insured, the shipowner loses nothing by her destruction, and that it is at all times in his power to *over* insure her, without any questions being asked, and by her loss, which he can take certain means to effect, without risk of detection, to make a profit. For the practical working of this system, let our emigrant and our timber ships speak, annually. The operation of the present system too, completely takes away all motive or inducement for a shipowner to get a safe ship at the outset. Indeed, it is notorious, that whilst every other art and science has been improving in Britain for the last half century, the art of merchant ship-building has absolutely been retrograding. A shipwright officer of a royal dock yard lately expressed his opinion that it was a national disgrace to allow such vessels to be built as are now building, and find the readiest sale. This is the cause of the vast majority of shipwrecks. I mean original insufficient building, which your able correspondent, "Mercator," describes as the "most insane proceeding under the sun," and which no patents, however valuable, can reach or cure. But repeated discussions of the case in parliament, in spite of the powerful interest of shipowners to *tabu* or *quash* them, must be crowned with success. Your ably conducted national work has thrown great light on this, as well as on many other hitherto dark subjects.

I am happy to observe, by your number for this month, (June,) and the public prints, that the moral condition of seamen, so ably portrayed in "Britannia," is beginning to attract the public attention. As their moral and physical condition are inseparable, it is to be hoped that those benevolent individuals, who are so humanely interesting themselves for the former of these objects, will not overlook the latter: and will be convinced, that it is vain to endeavour to persuade any class of persons, that their spiritual welfare is regarded, so long as their temporal welfare is wholly neglected, and even their very lives



sacrificed at the shrine of mammon. So long as this continues to be the case, it requires no gift of prophecy to foretel, that the moral condition of seamen, however much it is to be lamented, will continue to be the same as it now is. Let us hope to see an equally powerful appeal as "Britannia," on the physical condition of seamen, and the means of remedying it.

I am, Mr. Editor,
Your most obedient servant,
NEARCHUS.

DIRECTIONS FOR APALACHICOLA BAY. *By Captain Joseph Cornforth, of the brig Harbinger, of Newcastle-on-Tyne.*

FROM Cape St. Antonio, or the Dry Tortugas, steer for the middle of St. George's Island. The soundings will be regular as you approach the land, which is extremely low all about, and they will shoal gradually. The above course will take you to the eastward of St. George's Reef, extending eight miles from the south point of St. George's Island. The soundings near the west edge of this reef are very irregular, and not to be depended upon. By running along the island you will meet the reef, and by keeping your lead going it will carry you outside; for, should you fall to the westward, and make Cape St. Blas, or to the westward of it, and a south-west wind come on, and blow hard, you are then between the two reefs, and the current setting along St. Blas Reef, and winding into Apalachicola Bay, you will find some difficulty in keeping to windward; but by being to the eastward of St. George's, you will have the current setting to the southward and westward, towards the gulf, and further to the eastward, the stronger you will feel it going to windward.

When I was bound to Apalachicola on my last voyage, I made Cape St. Blas, in consequence of the chart being wrong. Although the water was smooth, and the breeze fresh, it took me from 4 P.M. till 4 A.M. next morning to double the reef. At 3 A.M. next morning, we found our soundings vary from three fathoms to seven, then a quarter less three, then five, and so on the whole of the time. The lighthouse is on the west end of St. George's Island; which situation renders it of no use coming from the eastward, as a land-mark, until you open it to the westward of St. George's, which is one of my reasons for recommending the island to be steered for about midway. At the West Pass there is a pilot-cutter attends, and it is intended to have one at the East Pass, between Dog Island and George's Island; also a light; which is the only channel for large ships, having fifteen to sixteen feet in the channel at low-water, and no bar.

The bar at the West Pass is about sixty feet broad, and of hard sand. I touched once very lightly going in, drawing twelve feet and a half water; also the same in coming out again.

Ships going in at the East Pass can get up to about twelve or thirteen miles of the town, to load. The bay inside is perfectly safe, and will hold a large fleet of ships; the ground good and soft—an excellent place for a rendezvous for cruisers. Vessels bound for the West Pass ought not to draw more than twelve feet; for, when over the bar,

if you are to load in the bay, very little more can be found; in fact, I laid aground nearly the whole of our time: the ground soft, and vast numbers of oyster-beds all along shore.

The latitude of St. George's lighthouse by meridian altitude I made $29^{\circ} 37' N.$, with artificial horizon, and longitude $84^{\circ} 53' W.$, by lunars. Inside, at the anchorage for loading at, our longitude, by means of several lunars, ☉ and ☾ it was $84^{\circ} 45' 45'' W.$, and lat. $29^{\circ} 41' 33'' N.$; and when at anchor near the bar, the latitude was $29^{\circ} 34' N.$ and long. $84^{\circ} 51' W.$ The tide rises about two feet, but so irregularly sometimes, that there is only one high-water in thirty-six hours. The tides are here very much affected by the winds.

BRIDLINGTON BAY.

Trinity-House, London, 14th June, 1837.

THIS Corporation having, in compliance with the request of the trade, caused a buoy to be placed near the Smithic Sand in Bridlington Bay, the following particulars in relation thereto are published, for the information of navigation, viz. :—

The said buoy is coloured *red*, and lies off the north-east end of the Smithic Sand, in four fathoms and a half at low-water spring-tides, with the following mark and compass bearings, that is to say—

The Southernmost Windmill in Bridlington

Cliff on with a White House	W. by N. $\frac{1}{4}$ N.
Bridlington Church	N.W. by W. $\frac{3}{4}$ W.
Flamborough Windmill	N.W. by N.
Flamborough Light Tower	N.N.E. $\frac{3}{4}$ E.

By Order, J. HERBERT, Secretary.

CAPE FRIO LIGHT.

A LIGHT has been established, as we have before observed, on Cape Frio,* which, being on the highest pinnacle of the island, is consequently three-fourths of its time invisible among the clouds. In this condition, it is evidently nothing better than a trap to lead vessels into danger, by their not making it as would be expected. It has been suggested to the Minister of Marine at Rio, to have a second lighthouse erected on the island, close down at its extreme point, to remedy the evil. A high lighthouse has also been proposed on the outer Abrolhos Island, which would be seen from sea, before any danger could happen to vessels passing it to seaward, and would render the channel inside the Abrolhos safe. We shall not fail to announce it, if these proposals are followed.

DURABILITY OF WOOD.

THE following are the particulars of experiments made on several kinds of wood, $1\frac{1}{2}$ inch square, and two feet long, placed vertically

* See a notice of it, page 698 of our volume for 1836.

in the ground, and about one foot six inches exposed to the atmosphere on the 1st of January, 1831, examined at two different times, viz., the 8th May, 1833, and the 24th February, 1836.

Species of Wood.	Remarks, 8th May, 1833.	Remarks, 24th Feb., 1836.
English Oak	Much decayed and diminished in weight.	Very much decayed, especially those of open grain.
Italian Oak	Good, but decay had commenced on surface.	Do. do. rather less than the English.
Adriatic Oak	Very much decayed.	Very much decayed, excepting one piece, very good.
Leaf or Live Oak	Very good.	Three much decayed, the rest tolerable.
Canada White Oak	Very much decayed.	Very bad and rotten.
Memel do.	Ditto.	Ditto.
Dantzic do.	Ditto.	Exceedingly bad.
Mahogany hard	Good.	Tolerably good.
Do. soft	Much decayed.	Very bad, totally decayed.
Libanus Cedar	Good.	Tolerably good.
Pencil Cedar	Very good.	All very good, as when put in the ground.
African, No. 1	Very good.	A little decayed, and inclined to doat; better than English oak.
African, No. 2	Very good.	Worse than No. 1.
Teak, heavy	Very good.	Rather soft, but good.
Teak, light	Good.	Soft $\frac{1}{2}$, but good.
Teak, part of Hastings mizen-mast	} Good.	Soft $\frac{1}{2}$, the rest indifferent.
Fir, Dantzic		Much decayed.	Very much decayed, rotten all through.
Fir, Riga	Much decayed.	As bad as the Dantzic.
Fir, Memel	Much decayed.	Very bad, rotten.
Fir, Red Pine	Much decayed.	Very rotten, much like the Dantzic and Riga.
Fir, Yellow Pine	Very much decayed.	Very rotten.
Do. Virginia Pine	Decayed.	Very rotten.
Do. Pitch Pine heavy	Decayed $\frac{1}{2}$ of an inch, the rest good.	Decayed $\frac{1}{2}$ of an inch, rest tolerably good.
Do. do. light	Very rotten.	Very rotten.
Polish Larch	Decayed $\frac{1}{2}$ in the surface, and lost in weight.	Decayed $\frac{1}{2}$, the rest a little decayed
Scotch do. Treenails	Surface $\frac{1}{2}$ in. decayed and brittle, see 162—165.	Surface $\frac{1}{2}$ in. decayed, the rest brittle.
English Elm	Very rotten.	All rotten.
Canada rock do.	Ditto.	Rotten.
American Ash	Ditto.	Ditto.
Locust Treenails	Good and retained their weight.	$\frac{1}{2}$ in. rotten, the rest as sound as when put in the ground.
Scotch Larch do.	Surface $\frac{1}{2}$ decayed, and very brittle.	$\frac{1}{2}$ in. rotten, the rest brittle.
Stinkwood dark col.	Surface not decayed, but very brittle.	This piece was misplaced.
Cowdie	Surface $\frac{1}{2}$ decayed, and very brittle.	Rotten.
Stinkwood light col.	Surface $\frac{1}{2}$ decayed, and brittle.	Rotten.
Poonah	Surface a little decayed, and become light.	Surface $\frac{1}{2}$ decayed, the rest good better than African.

Note.—Riga preferable to all the Fir, and Dantzic next.

Naval Chronicle.

THE remains of our late beloved Monarch, WILLIAM THE FOURTH, were consigned to their last resting-place in St. George's Chapel, at Windsor, on the night of Saturday the 8th of July, amidst the pomp and splendour of majesty, and that more appropriate accompaniment of nature's own, the heart's pure and unutterable grief. At 4 in the morning the guns of two batteries of 9-pounders in the Long Walk, commenced firing at intervals of ten minutes up to ten in the forenoon, when they were fired at intervals of five minutes, until the movement of the funeral procession commenced, at nine in the evening. They were then fired every half-minute, until the ceremony was concluded, when the royal standard, which had been flying half-mast high, was lowered down; the two batteries each fired a royal salute, and were moved off. Every part of the ceremonial was conducted in the most appropriate manner; and never before did the chosen retreat of the sovereign of Great Britain witness a scene so remarkable, either for the sublime and powerfully imposing solemnity of the occasion, the vast concourse of persons by which it was attended, or the order and respect with which it was observed, and which so well befitted its mournful character. The coffin containing the remains of our lamented monarch is composed of Spanish mahogany of the finest grain, two inches and a half in thickness, covered with royal purple Genoa velvet, and lined with white satin. The dimensions are, in length, 7 ft. 3 in.; in depth, 2 ft.; breadth across the shoulders, 2 ft. 10 in.; breadth of the head, 24 in.; and breadth of the feet, 22 in.: the handles and nails of silver gilt, and of most elegant device. On the lid, in the first panel, is placed the Royal Arms of England, curiously wrought in silver gilt; and in the centre a massive silver plate, on which is engraved the following inscription:—

DEPOSITUM
SERENISSIMI POTENTISSIMI
ET EXCELLENTISSIMI MONARCHII,
GULIELMI QUARTI;
DEI GRATIA BRITANNIARUM
REGIS,
FIDEI DEFENSORIS;
REGIS HANOVERÆ, A.C.;
BRUNSVICI ET LUNEBURGI DUCIS.
OBIIT XX. DIE JUNII.
ANNO DOMINI MDCCCXXXVII.
ÆTATIS SUÆ LXXII., REGNIQUE SUI VII.

At the last panel, at the foot of the lid, is placed the Order of the Garter, with the inscription, "*Honi soit qui mal y pense.*" Around the coffin lid are rows of nails, curiously studded in double lines, likewise cornices of a most unique pattern, forming a *coup d'œil* most pleasing, yet giving the *tout ensemble* a most solemn and imposing effect.

Thus has passed away "the affectionate father, the kind husband, the indulgent master, the patriotic king, WILLIAM THE FOURTH."

"Sic transit Gloria Mundi."

May the prayers of his people be granted; may he have exchanged his earthly crown for one of everlasting glory!

MOVEMENTS OF THE ROYAL NAVY, 15TH JULY.

Sd., sailed; arr., arrived; rem., remained.

AT HOME.

PORTSMOUTH.—June 19th: *Talbot*, 28, Capt. Pennell, arr. from South America, with about 400,000 dollars on merchants' account: left Rio Janeiro on the 17th April: sd. for Plymouth, to pay off on 20th. *Sultan*, *Wasp*, and *Thunderer* have been taken in, and *Alligator* and *Hyacinth* out of dock; the latter are in the basin, to be fitted for commission. The *Edinburgh* has been undocked, and is in the basin, ready for commission. *Queen Charlotte* brought alongside the jetty to be caulked. *President* is fitting for a flag-ship, expected to be that of Rear-Admiral Ross, C.B. 25th: sd., *Sparrowhawk*, for South American station, and *Romney* went to Spithead. 26th: arr. *Messenger*, steamer, from Woolwich, and went on to Plymouth, with marines for *Donegal*. 27th: *Pique* went to Spithead: Adm. the Hon. Sir R. Stopford rehoisted his flag in the *Princess Charlotte*. 29th: It was officially announced to the officers of the dock-yard, that Rear-Admiral the Hon. D. P. Bouverie is to relieve Rear-Adm. Sir F. L. Maitland as Superintendent of the yard. *Edinburgh*, *Alligator* and *Hyacinth* are fitting for commission in the basin. 30th: arr., H.M.S. *Castor*, from Sheerness. 2d July: *Seringapatam* and *Romney*, sd. for the West Indies. The receiving ship, *Romney*, 30, under the orders of Lieut. Jenkin, is destined to lay at the Havannah as a depot for emancipated Negroes. Colonel Cockburn, appointed governor of the Bahamas, has embarked in her for a passage to Nassau. 3d: *Princess Charlotte*, with the flag of Adm. the Hon. Sir R. Stopford, G.C.B., sd. for Malta. *Parmelia*, transp., Lieut. Davison, sd. for the north coast of Spain on 4th. 5th: *Athol*, troop-ship, arr. from Leith, and went into harbour, to fit for the Isle of France. *Ariadne*, coal-depot, in charge of Lieut. Pearse, of the *Queen Charlotte*, was towed to Spithead. *Hazard* was towed to Spithead by the *Comet* steamer, and is destined for the coast of Africa, to protect the gum trade at Senegal. 6th: *Hercules*, (acting Captain, Sir J. Bremer,) *Castor*, and *Pique*, sd. for Corunna. *Speedy*, cutter, Lieut. M. Mottley, arr. from the north coast of Spain. 9th: the *Independence*, American frigate, sd. for Cronstadt. 10th: *Hazard*, sd. for Lisbon and the coast of Africa. 14th: *Volage* arr. from the Mediterranean. The *Seaflower's* tender, *Cracker*, Mr. Motley, mate-commander, picked up a dismasted and abandoned vessel off the Start a day or two ago. By some papers discovered, she appears to have been bound from Cardiff to a port in Prussia—about 170 tons of iron in her. The *Alligator* is ordered to be commissioned. The *Prince Regent* is taken into dock. Ships at Spithead.—*Volage*, *Athol*. In Harbour.—*Victory*, *Britannia*, *Royal George* yacht, *Excellent*, *Partridge*, *Seaflower*, *Messenger* steamer, *Cracker*, *Emerald*.

PLYMOUTH.—June 16th: *Pembroke*, 74, Capt. F. Moresby, C.B., taken out of dock. 17th: went into the Sound, *Ringdove*, 16, Com. H. P. Nixon; arr., *Royalist*, 10, Lieut.-Com. Hon. E. Plunkett, from the coast of Spain, and came into harbour next day. 19th: *Donegal*, 78, taken into dock, and undocked. 20th: arr. *Beagle*, 10, Com. J. C. Wickham, from Portsmouth. 22d: *Thisbe*, 46, taken into dock. Two new brigs are ordered to be built in this dock-yard, to be named the *Ferret* and *Philomel*. 23d: *Wellesley*, 74, commissioned this day by Com. J. Kingcome, for the flag of Rear-Adm. Sir F. Maitland. 24th: arr., *Talbot*, 28, Capt. F. W. Pennell, from Portsmouth, and came into harbour to be paid off. *Donegal*, 78, commissioned this day by Com. J. P. Pritchard, for flag of Rear-Adm. Sir Edward Brace, for the command in the Tagus. Went into the Sound, the *Wolverine*, 16, Com. Hon. E. Howard. 26th: sd., *Ringdove*, 16, Com. B. P. Nixon, for West Indies. 27th: arr., *Messenger*, st., Mr. J. King, master, from Woolwich, with marines for *Donegal* and *Wellesley*; sd. the same evening for Portsmouth. 28th: arr. *Racehorse*, 18, Com. Sir J. E. Home, from West Indies, and *Lightning*, steamer, Lieut. Com. J. Shambler, from Dublin and *Pembroke*. Sd. *Blazer*, st., Lieut.-Com. J. M. Waugh, for Falmouth, and next mail to the Mediterranean. Went out of harbour into the Sound, *Royalist*, 10, Lieut.-Com. Hon. E. Plunkett. July 1st: Came into harbour to be paid off, *Racehorse*, 18. 2d: sd., *Royalist*, 10, Lieut.-Com. Hon. E. Plunkett, for the coast of Spain; *Lightning*, st., for Portsmouth, and *Diligence*, navy transport, with stores for Deptford dock-yard. 3d: arr., *Speedy*, 8, Lieut. Com. J. M. Mottley, from the coast of Spain, and sd. the next day for Portsmouth. Sd., *Wolverine*, 16, Com. Hon. E. Howard, for Mediterranean. 5th: sd., *Beagle*, 10, Com. J. C. Wickham, for Australia; *Talbot*, 28, Capt. F. W. Pennell, was this day paid off into ordi-

nary. 6th: arr., *Comet*, st., Lieut.-Com. G. T. Gordon, and came into harbour. *Pembroke*, 74, Capt. F. Moresby, was this day towed from Hamoaze into the Sound. 7th: *Comet*, st., taken into dock, and undocked the 13th. 8th: *Hercules*, 74, Capt. Sir J. Bremer, Kt., K.C.H. (acting); *Pique*, 36, Capt. Hon. H. I. Rous; and *Castor*, 36, Capt. E. Collier, were off the port. The *Inconstant*, 36, Capt. D. Pring, will join them off Corunna, when they will proceed on to try rate of sailing. 10th: arr., *Cracker*, from Portsmouth, and returned next day. 12th: arr., *Shamrock*, Lieut. C. Servante, from the coast of Ireland. *Racehorse*, 18, Com. Sir E. Home, was paid off into Ordinary. *Lancaster*, 52, has been brought down the harbour to be examined. In Hamoaze.—*Royal Adelaide*, *San Josef*, *Donegal*, *Wellesley*, and *Comet* steamer. In the Sound, *Pembroke*.

ABROAD.

ASCENSION.—10th May: rem., *Lynx*, Lieut. Birch. 20th April: sd., *Rolla*, for coast of Africa.

BAHIA.—25th April: arr., *Imogene*. 23d: sd., *Samarang*, for R. Plate.

BARBADOS.—6th May: arr., *Griffon*, with a prize, containing 433 slaves. 22d April: arr., *Snake*.

BOMBAY.—2d Feb.: arr., *Rose*, from Cochin. 18th Jan.: arr., *Winchester*, from Ceylon. 7th Jan.: arr., *Zebra*, from Sydney.

BUENOS AYRES.—4th April: rem., *Fly*.

CADIZ.—20th June: sd., *Magicienne*. 13th July: sd., *Trinculo*.

CALCUTTA.—1 Feb.: rem., *Andromache*, Capt. Chads; 9th, arr. from Acheen.

CALLAO.—22d Feb.: arr., *Acteon*, Capt. Lord E. Russell, from Valparaiso.

CAPE OF GOOD HOPE.—22d April: arr., *Thalia*, from Ascension. 28th: sd., *Py-ludes*, 18, Com. W. L. Castle, for Mauritius.

CEYLON.—23d Jan.: arr., *Algerine*, from Madras.

GIBRALTAR.—3d June: rem., *Orestes*. 5th June: arr., *Clio*, from Malaga. 7th: arr., *Volage*, from Constantinople. 9th: arr., *Hermes*, St. V.

HAVANA.—30th April: rem., *Rainbow* and *Racer*. 2d May: arr., *Briséis*, from Falmouth.

LISBON.—8th June: arr., *Pearl*, from Madeira. 25th June: arr., *Inconstant*, from Cadiz. 27th: sd., *Larne*, 18, Com. P. Blake, for East Indies. 22d: arr., *Saracen*, Lieut. W. Hill, from Falmouth. 24th: rem., *Malabar*, *Minden*, *Hastings*, *Inconstant*, *Larne*, and *Pearl*.

MADEIRA.—23d May: sd., *Comus*, for Barbados. 1st June: arr., *Cornwallis*; 3d, sd. for West Indies. 2d June: sd., *Pearl*, for Lisbon.

MALTA.—3d June: rem., *Vanguard*, *Rapid*, *Hind*, and *Nautilus*. 9th June: rem., *Caledonia*, *Asia*, *Vanguard*, *Russell*, *Rapid*, *Medea*, and *Confiance*. 26th May: sd., *Russell* and *Asia*.

PORT ROYAL, Jamaica.—11th May: sd., *Wanderer*, on a cruise.

RIO JANEIRO.—17th April: rem., *Dublin*, *Stag*, and *Samarang*. 13th April: arr., *Samarang*, from Plymouth. 15th: arr., *Stag*, from Plymouth.

SINGAPORE.—31st Jan.: arr., *Raleigh*, from Macao; 5th Feb., sd. for Malacca. 11th Feb.: sd., *Wolfe*, 18, on a cruise.

TAMPICO.—16th April: rem., *Satellite*; to sail same day for Vera Cruz.

TUNIS.—27th May: rem., *Bellerophon*.

VALPARAISO.—17th March: rem., *Blonde*, 46, Feb. 21: arr., *Basilisk*, from Cobija.

VERA CRUZ.—21st April: arr., *Satellite*, Com. J. Robb.

The *Wellesley*, 74, is commissioned at Plymouth, for the flag of Rear-Admiral Sir Frederick Lewis Maitland, K.C.B., who is to assume the command in the East Indies. Captain Thomas Maitland and Commander G. Kingcombe are appointed to her.

Rear-Admiral Sir E. Brace, K.C.B., is appointed to the command of the squadron in the Tagus, vice Sir William Hall Gage. Capt. F. Brace and Com. S. P. Pritchard, are appointed to the *Donegal*, 78, his flag-ship, ordered to be fitted to relieve the *Hastings*, 74.

Rear-Admiral the Hon. D. Bouverie has succeeded Sir Frederick L. Maitland, as superintendent of Portsmouth dock-yard.

Rear-Admiral Ross, C.B., is appointed to succeed Sir Graham Hamond in the Pacific command, and Rear-Admiral G. Elliot, C.B., to the coast of Africa.

DUNDEE HARBOUR.—By order of the Honourable the Harbour Trustees.—Notice is given to mariners, that on and after the 1st day of August next, the present high light in the tide harbour, immediately to the westward of King William's dock-gates, instead of a bright light, as at present, will exhibit a *Red Light* to the S.E., which light in one with the Red Light on the east protection wall, leads vessels clear of the Beacon Rock.

J. N. SMART, Harbour-Master.

Dundee, June 5, 1837.

LIVERPOOL DOCKS.—The following is a comparative statement of the number of vessels which entered the port of Liverpool in the year ending 24th of June, 1836 and 1837 :—

Year.	No. of Vessels.	Tonnage.
1837	15,038	1,958,984
1836	14,959	1,947,613
Increase . .	79	11,371

—*Liverpool Standard.*

ALTERATION IN THE ROYAL ARMS.—The Royal arms of England will vary much from those borne by her Majesty's five predecessors. The sovereign being a female, they will be borne on a lozenge, instead of a shield, and the imperial crest of a lion surmounting the crown will be discontinued, as will also the escutcheon of pretence bearing the arms of Hanover, surmounted by the crown of that kingdom. The arms will in future consist of the four grand quarters only—namely, England in the first and fourth, and Scotland and Ireland in the second and third quarters.

The Naval College at Portsmouth having been finally abolished, the governor (Captain Loring) is made Rear-Admiral of the White and Knight Commandant of the Guelphic order. The lieutenants have been placed on superannuation, as well as other officers entitled thereto; and such as are not entitled to superannuation, have received one year's pay additional as a gratuity.

Lieut. John Sanders, R.N., (1815,) has been elected superintendent of the *Dreadnought* hospital ship, vice Lt. Bowers, resigned through ill health, and who retires with the regard and esteem of every individual. The *Essex*, convict-hulk, *Surprize*, do., *Prince*, 104, *Venerable*, 74, *Immortalité*, 38, *Aboukir*, 74, *Lion*, sheer-hulk, 64, and *Port Mahon*, brig, are ordered to be sold out of the service.

THE WATERLOO FLAG.—"Tell the Duke," said his Majesty to the bearer of the Waterloo trophy, by the presentation of which his Grace of Wellington holds the tenure of Strathfieldsay—"tell the

Duke I wish I could have received this flag at his house, and have seen him once more preside at his dinner among the diminished ranks of his brave associates. I am very ill, I know, but I hope it may please God to carry me through this day, as I should grieve to think that my death should cast even a momentary gloom upon a day which is so bright in the annals of my beloved country."—*Evening Paper*.

COURTS MARTIAL.

A court-martial was held on the 5th of May, on board the *Hastings*, to try Lieut. John Colpoys Ommanney, of the *Minden*, for charges preferred against him by Capt. A. R. Sharpe, C.B., composed of the following members:—Vice-Admiral Sir William Gage, G.C.B., president, Captains Sir William Montagu, Hon. J. Rous, G. B. Mends, Daniel Pring, and A. Shiffner. The charges were as follows:—1st, "for disobedience of orders—2nd, for insolence and altering the log—3d, for writing insolent notes and letters to Capt. Sharpe—4th, for writing similar notes to Commander Knox, and 5th, for contemptuous conduct towards the said Captain Sharpe and Commander Knox." The court decided that the first and second charges were not proved, and that the third, fourth, and fifth were fully proved; but in consequence of the length of time the said Lieut. Ommanney had been under confinement, the court adjudged him to be placed at the bottom of the list, and there to remain.

A court-martial was held at Malta, on board H.M.S. *Vanguard*, on the 15th to 23d May, on Brevet-Major Henry John Murton, Royal Marines, of H.M.S. *Asia*, on five charges, preferred against him by Capt. W. Fisher, of that ship, and embracing the following points:—For attempting to assemble, give orders to, or make regulations for, the marine detachment embarked in the *Asia*, without the sanction of Captain Fisher, to the hindrance of the public service; for disputing, or on frivolous pretext evading, the authority of the officer of the watch, and affecting an independent authority, to so mislead part of the marine detachment, as to make requisite a severe punishment, and a strong public caution to the detachment; for making statements to them unwarranted by facts, and calculated to create dissatisfaction among them; and also for addressing letters to Captain Fisher, containing unfounded reports, and other objectionable matter, committing thereby acts of insubordination and contempt of superior authority; also, for having forwarded to Captain Fisher, in an unofficerlike manner, and in violation of his orders, a letter purporting to be a complaint from Lieut. Sayer, R. M., but which was a letter dictated by that officer to the said Lieut. Sayer, Major Murton having been the sole cause of the circumstance complained of, and grossly exaggerated in the said letter; and lastly, for organizing a conspiracy among the non-commissioned officers of the marine department embarked in the *Asia*, having for its object the ruin of Sergeant Casey, of the same detachment, against whom Major Murton had previously in person exhibited charges, and repeated the same charges after they had been publicly disproved. *Sentence*.—The court having attentively heard all the evidence in support of the prosecution, as well as the evidence

adduced by Major Murton in his defence, were unanimously of opinion that the whole of the charges were disproved, and therefore fully and honourably acquitted Major Murton of all and every part of the said charges. Rear-Admiral Sir Thomas Briggs presided at the court.

A court martial was lately held on board H.M.S. *Royal Adelaide*, composed of Frederick Warren, Esq., Rear-Admiral of the red; Capts. John Sykes; John Hancock, C.B.; Fairfax Moresby, C.B.; Follett Waldron Pennell; and Thomas Maitland: George Eastlake, Esq., officiating Judge Advocate.

The court then proceeded to try James Bridges, Thomas Davidson, and Abraham Firth, of H.M.S. *Blazer*, on charges exhibited against them by Lieut. John Waugh, commanding the said steam-vessel. James Bridges, carpenter's crew, for robbery, and the two latter for aiding in the aforesaid robbery, and desertion. The court, having heard the witnesses for the prosecution, and the prisoner's defence, declared its sentence to be, that the charges have been proved against the prisoner, James Bridges, and in consequence, adjudged him to be imprisoned in one of her Majesty's gaols or prisons for the space of two years, and kept to hard labour, mulct of all pay now due to him, and to lose all benefit and advantage of his time and service in the navy. The other two were acquitted.

The court was again sworn to try Mr. G. Sinclair, gunner of her Majesty's brig *Royalist*, for repeated drunkenness between 23d March, 1835, to 28th May, 1836, and for quarelling with his superior officer, Commander Charles Anstruther Barlow, on the 16th October, 1836, (at that time a Lieut. commanding the said brig,) in breach of 22nd article of war.

The sentence of the court was, that the charges have been clearly proved against the prisoner, Mr. George Sinclair, gunner, &c. doth therefore adjudge him to be dismissed her Majesty's service.

A court-martial was held on board H.M.S. *Royal Adelaide*, on 1st and the 2nd June, to try Capt. Sir T. Fellowes, late Captain of H.M.S. *Pembroke*, 74, on the following charges:—For not following the orders of Vice-Adm. Sir W. H. Gage, commanding H.M.'s ships at Lisbon, in going to, and remaining unnecessarily at, Gibraltar, instead of proceeding to Malta without loss of time, to the delay of H.M.'s service; and also to inquire into the circumstances which occasioned the *Pembroke* to get on shore at that place. The following officers composed the court:—President, Admiral Lord A. Beauclerk; Rear-Admiral Warren; Captains J. Sykes, Hancock, Brace, Pennell, and Maitland. The commander, Capt. Sir T. Fellowes, addressing the court in his defence, said:—"Mr. President, and members of this honourable court, I am happy to have for my judges those so competent to the task, and to whom I have the honour to be known as an officer; the sword before you was a present from our lamented Sovereign;—I have hitherto worn it with pride, and I trust you will this day return it to my keeping unsullied by censure for any act of disobedience in a profession in which I have been taught to consider obedience the first and most essential duty." The following sentence was delivered:—"The court is of opinion that the charge of not

having followed the orders of Vice-Admiral Gage, has been proved against Sir Thomas Fellowes ; and the court having also proceeded to the circumstances respecting the *Pembroke's* getting on shore in Gibraltar Bay, is of opinion that her getting on shore was occasioned by her driving and breaking her anchors during a strong gale ; but that after she was on shore, every possible exertion was used to get her off : and the court is of opinion, that greater precautions ought to have been taken to prevent the ship from driving, and that blame is attached to Captain Sir T. Fellowes, for his conduct on that occasion : and the court doth therefore (taking into consideration circumstances which came out on the trial) adjudge the said Capt. Sir T. Fellowes to be admonished to be more circumspect infuture, and the said Capt. Sir T. Fellowes is hereby admonished to be more circumspect in future." The President then proceeded to return Capt. Sir T. Fellowes his sword ; and in doing so, said, it was with the greatest pleasure he returned to him that sword which had been so graciously bestowed by his Sovereign ; and he had not the least doubt it would be used, as it ever had been, for the benefit of his country.

THE MISSING WHALERS.

WE noticed in our last, the return of the *Advice*, and we expressed our doubts for the safety of the *Swan*, the last vessel expected. These doubts have been dispelled by her return ; but the state in which these vessels have returned will be best conveyed in the annexed accounts.

Sufferings of the Crews of the Whale-ships Thomas and Advice.

Captain Davidson, of the lost whale-ship *Thomas*, arrived at Dundee, from Sligo, on Saturday night, from whom, and other authentic sources, the following additional melancholy particulars have been collected :—

The *Advice* got clear of the ice on the 17th of March, the day after the Grenville Bay, Norfolk, and Dee. By this time ten or eleven men had died, and the sufferings endured by all on board were extreme. Immediately after the vessel was beset, the whole were placed on short allowance of food ; but it was more the quality than the quantity that added to their privations. The saltness of the provisions induced scurvy, and that disease made extensive ravages. It generally first appeared in the mouth, but very soon occasioned dreadful swellings and discolouration in the legs, and other parts of the body, then great lassitude and debility, and ultimately brought the body into an entire mass of corruption. The cold was also intense. The seams of the vessel were opened up by the frost to a great extent, and in the inside the ice was three or four inches thick all around ; by the melting of which, from the artificial heat introduced, the part of the ship occupied by the men was kept in a state of great humidity, and had consequently a very unfavourable effect upon their health. The vessel was, besides, so leaky, that there were consequently three or four feet water in the hold. This led to incessant application to the pumps, to prevent the ship from getting water-logged, or going down ; and, while it gave exercise to those who were able to take part in the work, it also produced extreme fatigue. When the men began

to get reduced in numbers, it was the practice of the remainder to make fast the helm when the evening set in, to retire to rest during dark, leaving the vessel at the will of the waves; and to get up about four in the morning, or earlier, then to commence pumping, and to continue, with only a slight intermission about noon, during the whole of the day. In this way the water was prevented from accumulating greatly; in fine weather they gained upon it, but in stormy weather it gained upon them. In the course of the three months during which she was driven about upon the surface of the Atlantic, the *Advice* was at one time as far south as latitude 48° , and at another only a few hundred miles distant from Newfoundland; but, during the whole of that period, she only saw two vessels previous to meeting with the *Grace*. One of them was at a considerable distance, but the other was only distant about three or four miles, and was followed for some time with signals of distress flying. Whether they were observed or not is uncertain; but the vessel continued her course, and the *Advice* was left to her fate. All hope of relief was now abandoned by many of the sufferers, who, seeing their companions dying around them, gave themselves up to all the horrors of despair. They confined themselves to their berths, refused to make the slightest exertion, fell into a state of lethargy, and thus sunk under the malady which was making such appalling progress. Those who suffered least were so occupied with the management of the vessel, and in endeavouring to mitigate their own privations, that there was none to attend to the sufferings of the dying; and it was even with difficulty that the dead bodies could be consigned to the deep. When the vessel arrived at Sligo she presented a horrible spectacle. Besides the two men received from the *Grace*, there were only seven individuals on board alive, and of these, three were in an advanced stage of exhaustion and disease. That part of the hold occupied by the crew was in a deplorable state of filth, and the smell emitted was intolerable. Had they been much longer in receiving assistance, it is evident that the whole must have perished.

Captain Davidson, of the *Thomas*, was particularly active in cheering, animating, and aiding the men at the pumps when on board of the *Advice*; and we understand that the comparatively good state of health which he enjoyed is to be ascribed to the active exercise he constantly took, and to his abstaining as much as possible from animal food. He is convinced, that, had he given way to the benumbing and soporific influence induced by cold, he also would have fallen a victim to the baneful influence of the disease which cut off so many of the unfortunate mariners.

William Gray, the survivor of the two seamen transferred to the *Grace*, is rapidly recovering from the effects of scurvy and general debility from which he was suffering, although he is still unable to walk without assistance, and it will therefore be some time before he is able to leave Port Glasgow.

The names of that part of the crew of the *Thomas* who died on board of the *Advice*, are as follows:—James Smith, Charles Mann, Robert Will, and Robert Kidd, from Dundee, the two last-named boys; William Hamilton, St. Andrews; Thomas Smith, and Alexander Motion, coast side of Fife; Magnus Anderson, Magnus Mowat, and George Flett, Orkney. William Anderson, of Dundee, and Alexander

Ednie, coast-side of Fife, died on the ice on the night on which the vessel was wrecked. The former, it is thought, fell into an opening in one of the floes, and thus lost his life. The latter expired from the intensity of the cold.

The names of all the men belonging to the *Advice* who have died, have not yet been ascertained, but it may in the mean time be stated that they amount to forty-three in number, and that, by the misfortunes which have befallen the two vessels, *Thomas* and *Advice*, no fewer than eighty-three lives have been lost. It may, therefore, be well believed that many widows and orphans have been made. The hapless circumstances in which they have been left strongly call for the sympathy of the public; and it is confidently hoped that all will be done that the hand of benevolence can effect, to mitigate the loss they have sustained in being deprived of those who were their stay and support.

Arrival of the Swan.

Peterhead, June 29, 1837.

Sir,—The *Swan*, of Hull, Captain Dring, (being the last of the ice-bound whalers of last season,) arrived off here this morning, with three fish, having got clear of the ice 20th May. The vessel did not wait here sufficient time to learn any particulars of their sufferings, but a number of her men, principally Shetlanders and Orkney men, having landed here, a little information has been obtained. Nine of the crew died previous to 1st September, and since that time nine have died, principally in consequence of having left the ship in an attempt to reach the shore. She was fast in the ice, until the *Princess Charlotte*, of Dundee, discovered her; when the crew of that vessel, assisted by others from various vessels, who afterwards found her out, succeeded in cutting her out, after much difficulty; they had to cut ice for several miles, before the *Swan* was extricated. The *Swan* is so disabled that the *Duncombe*, belonging to the same owners as the *Swan* does, is obliged to accompany her home. The *Swan* met several of the whalers in their outward passage, by whom she was provided with provisions; and by a letter from Captain Simpson, of the *Traveller*, of this place, it would appear that he afforded a quantity of clothing, which I understand he took out with him purposely to afford to the crews of the ships. I send a copy of Captain Simpson's letter, which afforded considerable information. His vessel was one of those which sailed early, with a view of rendering assistance. I also send a copy of a letter sent on shore from the *Swan*, by Captain Dring, to the managing owners of the *Traveller*.

I am, Sir, your obedient servant,
For W. GRAMACH, &c.

W. Dobson, Esq., Secretary at Lloyd's.

One of the last acts of our late and lamented Monarch shewed his magnificence, and at the same time his attachment to the established church, and anxious wishes for the spiritual welfare of the inhabitants of the place where he was born. On learning from the vicar of Kew that there was not sufficient room in the church for the accommodation of the inhabitants, he ordered its enlargement, at an expense of £3,000, out of his own private purse, and also devoted much of his time and

attention to the best means of accomplishing this desirable object, which he had the satisfaction of knowing was in progress before his lamented dissolution. It is expected that the church of Kew will be re-opened early in the autumn.

MR. BOTHWAY'S IMPROVED METAL BLOCKS.—Yesterday, a series of experiments were made, to prove that there was no less of power in the use of smaller metal blocks than the common wooden ones. The great secret appears to be the retaining the same relative value of the diameter of the pin to the sheave. The experiments were successfully performed at Mare's foundry, before Admiral Lord Amelius Beauclerk, and several other scientific gentlemen.—*Plymouth Journal*, June 15.

STEAM COMMUNICATION WITH INDIA.—A piece of plate, of the value of 100 guineas, has been subscribed for, and is to be presented to Mr. Waghorn, in acknowledgement of his great services in promoting the improvement of the communications with India, a labour on which he has been occupied, with little intermission, for twelve or fourteen years. Among the subscribers appear twenty of the first names in the city connected with the East India trade. Mr. Waghorn has also been appointed by the East India Company their agent in Egypt, to manage the transmission of their letters and despatches.

ROYAL NAVAL SCHOOL, CAMBERWELL.—A public meeting of the friends of this institution was held on Tuesday, pursuant to advertisement, in the large school-room, for the purpose of distributing the prizes, and transacting some other business. Lord Colville, who was to have taken the chair, having been unable to attend, Sir E. Codrington, G.C.B., was moved thereto; and having, in a brief and lucid speech, urged on the pupils the necessity of attending closely to their business, and not to be imitating the conduct of those in wealthier foundations, he proceeded to give the prizes to the successful candidates, who had been examined by Dr. Russell in classics; Professor Hall, of King's College, in mathematics; and Professor Brasseur, of King's College, in the French language. The answering of the candidates to whom the prizes were awarded was highly approved of by the several examiners, and some drawings which were exhibited to the company reflected the greatest credit on both the pupils and their instructors. The prizes awarded were the works of some eminent French and English writers, the grant of which Sir Edward accompanied with a suitable monition. The gold and silver medals which were usually given were not granted on this occasion, in consequence of the answering of any one in the upper classes not having given such complete satisfaction in all the departments as to entitle him to either; but, with this exception, the general answering was highly approved of. Among the company we noticed Vice-Admiral Sir W. Lake, Sir James Cockburn, Bart.; Admiral White, the Hon. Sir C. Boyle, &c.

HER MAJESTY'S SHIP PEMBROKE.—Much interest having been created throughout the navy, by the fact of bringing to a court-martial Sir Thomas Fellowes, K.C.B., late the captain of the above ship; we

have therefore collected from various authentic sources, the following interesting accounts of the miraculous escape of the *Pembroke's* crew from a watery grave, and the ship from becoming a complete wreck ; all of which refer to a period subsequent to that referred to in the charges, and this may be assumed as the reason why the facts did not come out in evidence there. After the ship had been towed off by the French steamer " *Ninos*," those on board the *Pembroke* endeavoured to bring her to an anchorage on the neutral ground, off the Old Mole, at Gibraltar. The gale which still continued, drove the ship from this anchorage towards the rocky shore of Spain, in the vicinity of Algeziras. At this critical period, she had but one anchor to depend on, and in working, she was found to be almost unmanageable, and was fast drifting towards the rocks. By great exertion, sail was made, and the ship wore round. At this juncture, but two chances presented themselves to those on board ; the one, to trust to a single anchor, which, if like its predecessors, had failed, the ship must inevitably have gone ashore, and been lost on the reefs of Algeziras. However, should it so happen, there was a chance of saving the lives of the crew. The other means of rescue, presented itself in the possibility of saving the crew and ship, by making sail, and trying to weather the dangerous reefs off Cabrita Point, and the Pearl Rock. But if the ship once touched there, all hopes of saving the crew and ship must have been at an end. With perfect reliance on the seamanship of those on board, the latter chance was preferred. Sail was accordingly made, and the ship moved but heavily along, and was unaccountably sluggish in every manœuvre she was put through. At this time, the courses jib and spauker were set ; and now commenced one of those awful moments that would decide whether death or life was theirs. To leeward, was a destroying surf roaring on the projecting reefs. As the ship tardily approached the extreme point, hope had almost fled, but by a providential flaw of wind, when in seven fathoms water, and not more than her own length from the deadly reef, the ship passed the danger. Thus, under Providence, and the manly and decisive conduct of the officers and crew of *H.M.S. Pembroke*, was preserved to her Majesty's navy, some of her bravest officers and men, and one of her finest men-of-war. The crew now, four o'clock, A.M., exhausted, and worn out by fatigue, having got the ship into fair sea-way, partook of their first meal since the morning of the preceding day. During the night, the sheet-anchor was shifted to the larboard bow. It was not until near noon of the 11th that the best bower could be cleared from what was now discovered to be the cause of the ship's indifferent and most perilous movements. The best bower was then found to have hooked an immense large anchor, supposed to have belonged to one of the bomb-proof ships, which was employed by the Spaniards, at the memorable siege of Gibraltar, and which so much impeded the ship's progress, whilst passing the dangers which she escaped. On Saturday, the 11th, *Pembroke* returned through the straits, and, without anchoring, proceeded on to Malta. The 12th being Sunday, a general thanksgiving was offered up on board, for their late deliverance, and an excellent sermon, on a text taken from the thanksgiving hymn, was preached by the chaplain of the *Pembroke*. On the ship's arriving at Malta, Captain Sir Thomas Fel-

lowes joined H.M.S. Vanguard, and gave up the command of the Pembroke to Capt. F. Moresby, C.B., who returned with her safely to England.—*Plymouth Journal*.

SHIPWRECKED AND DISTRESSED SAILOR'S ASYLUM.

(Continued from page 483.)

Captain Manby moved the second resolution, "That this institution, conducted on sound rational principles, embracing provision for the bodily and spiritual wants of 'shipwrecked and distressed seamen,' is highly necessary, and ought to be universally patronized; that it has since its formation, pre-eminently answered these intentions to the extent of its limited means, and that the meeting therefore pledges itself to promote its interest, and extend the sphere of its usefulness." It was then many years since he first advocated the sailor's cause; and at that time there were few found to co-operate with him. He was delighted to see the cause now supported by such influential gentlemen as were around him. Small as was their present meeting, he was convinced that as the public became acquainted with their objects, they would be every day gaining fresh accessions of strength. His efforts for saving unfortunate seamen from the horrors of shipwreck had been frequently frustrated, but, like Blucher, he always renewed the contest when he had any prospect of success. Since his hints had been given to the public, both the number of shipwrecks had decreased, and the number of persons lost by those which did occur, was also wonderfully diminished, and he trusted that similar results would attend the exertions of this society in preserving poor seamen from the miseries which awaited them on land, after they had escaped the perils of the deep. He hoped the nation would no longer manifest such an unaccountable apathy towards the state of its heroic, but too frequently unfortunate, seamen.

Captain Barber, H.C.S., seconded the resolution. He observed that no institution was more necessary than that which they were then met to support, as there was no class more exposed to the vicissitudes of fortune than seamen, and none less able to avert or to endure them. It frequently happened that a seaman who was comfortably clothed one day, and had plenty of money in his pocket, was, the next, a miserable mendicant. This arose from their unacquaintance with the world, and their falling into the hands of crimps, who rifled them of all their property, and then turned them adrift, without any means of subsistence. He was delighted to find that it was one of the objects of the society to save these poor fellows from the arts of those villains. It was said that there was no use in doing anything for them; that they were foolish, profligate, thoughtless, and even ungrateful. In fact, the whole catalogue of vices was attributed to them: but he would say, call them anything, but do not call them ungrateful? No men were more keenly sensible of good treatment, and none more forward to give substantial proofs of their gratitude, when the hour of danger was arrived. He did not state this on the authority of others. He knew it from thirty-five years' experience of them in the East Indies: for even he himself had been "a nurseling of the storm!" He remembered having been present at the opening of the institution,

when the honourable member for Tynemouth also attended, and promised to *nail his colours to the mast* in its defence. He was sorry to perceive that that gentleman had receded from the advocacy of the institution. But he (Mr. Y.) was no true sailor, for, if he was, he would not have sheered off from the contest after the first broadside, because he found that his adversaries carried heavier metal than himself. The gallant captain who had just addressed them, compared himself to Blucher in one particular. He would follow his example, and say, that, no matter what petty opposition they may now receive, no matter how far the honourable member for Tynemouth might differ from them, he would say, that the principle of the institution was practicable, and would be successful. It was lamentable to perceive the indifference of the mercantile men of this country to the state of their seamen, of whom they generally knew no more than what they learned from the wages' book. They cared not a farthing about the nautical knowledge or efficiency of either their captains or sailors, provided the vessels were insured. The seamen of the royal navy, as it was well known to the gallant chairman, used, amidst the heat of battle and roar of artillery, sing their staves with the utmost *sang froid* and indifference to the dangers that beset them. And what was the cause of this? Because they knew that if any accident should disable them in their country's service, that country had provided a home for them, where they may spend the remainder of their days in peace and happiness. But that was not the case with the merchant seaman, who, if any accident rendered him unable to earn his bread, would sink into the grave unpitied, unbefriended, and unknown.

Captain Baynes, R.N., C.B., moved the third resolution, "That the Royal Patronesses, the Right Rev. and the Right Hon. Patrons, the Treasurer, Honorary Chaplain, Hon. Solicitor, and Hon. Secretary be respectfully solicited to continue their invaluable services to the asylum; and that the following gentlemen be requested to form a general committee for the ensuing year, with power to add to their number:—Vice-Admiral Sir C. Adams, K.C.B., M.P.; Capt. Sir T. Troubridge, R.N., Bt., and M.P.; Capt. R. L. Baynes, R.M. C.B.; Capt. Alsagar, H.E.S. M.P.; T. S. Buckingham, Esq., M.P.; George Grote, Esq., M.P., Treasurer; T. Marsh, Esq.; W. H. Wood, Esq.; Capt. Barber, H.C.S.; Rev. J. Williams, M.A.; and Capt. H. M. Marshall, R.N." He observed with extreme regret and surprise that so few gentlemen connected with the shipping interests of this country were present at the meeting. If their absence arose from an indifference to the fate of the poor men, by whose laborious exertions they accumulated their fortunes, he could not have words to express his feelings on such unbecoming conduct. He deemed it a stigma on this nation, which supported so many charitable institutions, that it had not erected any for the relief and shelter of shipwrecked and destitute seamen.

Lieut. Newman, R.N., seconded the resolution in a speech of very great power and ability, which we regret that our limited space will not allow us to notice at any length. He felt the highest gratification, when looking over the list of donors and subscribers, to find some of the corporate bodies of the city of London, as well as many influential private individuals, uniting their exertions, under the gracious patronage

of their Royal Highnesses the Duchess of Kent and the Princess Victoria. Every one acknowledged that seamen, who for their country's sake cheerfully exposed their lives and limbs to constant peril, were well entitled to its gratitude and protection. And yet no class of our fellow-subjects were more neglected than they. Seamen were accused of being thoughtless and extravagant. The unsettled habits of their profession tended to make them so, while the smallness of their means rarely admitted of their providing for sudden contingencies and future wants, and the hourly jeopardy to which they were exposed, necessarily increased the probability that all their plans of economy would be intercepted by the stroke of death. As sailors were at all times and seasons ready to risk their lives to save others, and particularly females, he hoped the ladies present would give liberal subscriptions, as the marks of their estimation of such gallantry.

Captain Smith, R.N., in a brief and appropriate address, moved the fourth resolution, "That the cordial thanks of the meeting be given to the Managing House Committee for their steady, persevering, philanthropic, and voluntary services during the past year—the more deserving our unbounded admiration when we look back to the period when they commenced their arduous labours with an exhausted treasury and numerous difficulties; and that the following gentlemen be requested to continue their labours, with power to add to their number:—Captain H. M. Marshall, R.N.; Lieut. R. A. Newman, R.N.; Rev. J. Williams, M.A.; Rev. J. Harris, M.A.; and Messrs. Baker, Cannon, Frazer, and Nicholson."

It was seconded by O. P. Holmes, Esq., and carried.

The fifth resolution, which concerned only the adoption of some rules for the government of the institution, was moved by Captain Saumarez, who regretted to see so small a meeting for so noble an object. But he would not desire them to desist on that account. Finally they would succeed; their cause was too justly deserving of public support to lie much longer in the shade. He was glad to learn that the people in general were becoming more anxious to advance the interests of the seamen; and he hoped that before many years would elapse, one of the tests which should be proposed to candidates at the hustings, would be, "Are you the sailors' friend?" It was a most anomalous thing, that the people should be so disposed to praise the exertions of the seamen, and so unwilling to requite them. Such a state of things could not last long; and the sooner it disappeared, the better would it be for the glory and happiness of Great Britain.

Captain Baynes, R.N., C.B., seconded the resolution, and advocated the foundation of a national establishment for the reception of aged and infirm seamen. The mercantile classes should, in justice, contribute liberally out of the vast sums which they accumulated by the labours of their seamen, to the support of an asylum for the relief of those men, when reduced to infirmity by, perhaps, the very exertions which procured to them all their wealth and enjoyments.

E. R. Wilde, Esq., moved, "That the most cordial thanks of the meeting be given to Admiral Sir E. Codrington, for his unremitting exertions in behalf of the 'SHIPWRECKED AND DISTRESSED SAILOR'S ASYLUM,' and for having so ably advocated its cause that day in the chair."

T. S. Buchingham, Esq., M.P., seconded the motion. The merits of the gallant Admiral were already inscribed on so high a niche in the temple of fame, that any eulogium of his on them would be wasteful and extravagant excess. A bill of his (Mr. B.'s) which provided for the building of an asylum, hospital, savings' bank, and other offices for the use of the merchant seamen, the same as those at Greenwich, had been rejected the previous evening in the House of Commons, but he hoped some one else would bring it forward on a future occasion. That not a single gentleman from any of the mercantile houses of the metropolis should be present at the meeting, was to him a subject of the greatest astonishment. If any persons in the community were above others bound to support this institution, it was the merchants of the metropolis. They generally, by a few voyages, made independent fortunes; while the officers of the royal navy were struggling against penury during many years of service, in which they received abundance of hard blows, and very little money. Moreover, the merchants should not leave the advocacy of the cause of their own servants to strangers, and particularly to officers of the royal navy, as the sailors in the royal service had already secured to them those very things which it was then sought to provide for those of the merchant service. Did they begrudge to give a trifle to secure a home and shelter in old age and infirmity for the poor fellows who brought them their heaps of treasure? At present, he could not believe that Englishmen could be possessed of such feelings; but if those merchants did not speedily co-operate with this society, he could not possibly come to any other conclusion.

The Chairman, in acknowledging the compliment, said that he had always supported the institution on principle, and as he believed that those who acted on principle were never changed, so he would during the remainder of his life continue to give it his most strenuous assistance.—He adverted to the additional proof of attention to the interests of the institution afforded by the Duchess of Kent, and her amiable daughter, in patronising the concert for the benefit of the asylum, which was to take place on the 28th (then) instant.—The meeting then separated.

ELECTRO MAGNETIC TELEGRAPH.—An eminent scientific gentleman is at present engaged in maturing an invention which promises to lead to the most interesting and astonishing results, consisting of an electric telegraph. The telegraph is to consist of five wires, inclosed in a sheath of India-rubber, which isolates them from each other, and protects them from the external air. A galvanic trough or pile at one end of the wires, is to act upon needles at the other; and when any of the wires is put in communication with the trough, a motion is instantly produced in the needle at the other extremity, which motion ceases the moment the connexion between the wire and the trough is suspended. The five wires may thus denote as many letters; and by combinations, the six-and-twenty letters of the alphabet may be represented. By a simple mechanical contrivance, the communication between the wires and the trough may be established and stopped as the keys of the pianoforte are touched by the hands of a practised musician, and the indications will be exhibited at the other end of the chain of wires as

quickly as they can be read off. In the experiments already made, the chain of wires has been extended to a length of five miles; (by forming numerous coils within a limited surface;) and the two ends being placed near each other, it is found that the transmission of the electric action is, so far as the human senses can discern, perfectly instantaneous. Little doubt is entertained that it may be conveyed over a hundred thousand miles with the same velocity; and the powers of the instrument promise to be as great as its action is rapid. It will not be confined, like the common telegraph, to the transmission of a few sentences, or a short message, and this only in the daytime, in clear weather, and by repeated operations, each consuming a portion of time; for while it works by night or by day, it will convey intelligence with the speed of thought, and with such copiousness and ease, that a speech slowly spoken in London might be written down in Edingburgh, each sentence appearing on paper within a few minutes after it was uttered, four hundred miles off.—*Scotsman*.

TOBACCO AND CIGARS AS SHIP STORES.—By Treasury letter dated 16th January, 1837, the Excise regulation, which requires manufactured tobacco intended to be shipped as stores on board outward bound vessels, to be packed in the presence of an excise officer, is to be dispensed with; and tobacco, intended to be shipped as stores, is allowed to be moved from the manufacturer's premises into the custody of the officers of Customs with an excise permit only. Cigars, the unconsumed stores of passengers—By Customs order, dated the 7th January, 1837, it is directed that the practice observed at the port London, as regards the admission to entry of cigars, the unconsumed stores of passengers, be adopted at the out-ports; viz. that passengers, arriving from the continent, or other short voyages, be permitted to enter any quantity of cigars under three pounds' weight, and that passengers from the East or West Indies, or other distant voyages, be permitted to enter any quantity of cigars not exceeding seven pounds weight, without special application to the Board.—*Hants Advertiser*, January, 1837.

THE CONSEQUENCE OF THE PORTUGUESE TARIFF.—The *London Gazette* of Friday, May 12, contains an order in council, which, after reciting the act passed in the fifth year of the reign of his late Majesty King George the Fourth, intituled, "An act to indemnify all persons concerned in advising, issuing, or acting under a certain order in council, for regulating the tonnage duties on certain foreign vessels," &c., by which his Majesty is authorised to levy and charge any additional or countervailing duty or duties upon any vessels which shall belong to any foreign country, in which any duties of tonnage shall have been or shall be levied upon or in respect of British vessels entering the ports of such country, higher or greater than are levied or granted upon the vessels of such country; and noticing the Portuguese decree of the twenty-fourth of November, one thousand eight hundred and thirty-six, orders, that from and after the date of this order there shall be charged on all Portuguese vessels which shall enter any of the ports of the United Kingdom a duty of ninepence per ton, such duty to be levied, collected, recovered, and applied in such

and the like manner as any duties or customs are now by law levied, collected, and applied.

The same *Gazette* also contains an order of council, subjecting all goods imported into the united kingdom in Portuguese ships, from and after the date of this order, in addition to the existing duties otherwise payable upon the importation of such goods, a further duty, amounting to one-fifth part of such existing duties. *Shipping Gazette*.

Law Proceedings.

COURT OF COMMON PLEAS.—FEB. 21.

(London Sittings, before Lord Chief Justice Tindal and a Special Jury.)

MARINE INSURANCE—FOSTER v. STEELE.

THIS was an action brought by the plaintiff against the defendant, to recover 426*l.* upon three policies of insurance, of which the first was dated on the 21st of April, 1834; and was on a freight of the brig *Elizabeth* to be earned in a voyage from Sierra Leone, or the other ports and places on the coast of Africa, to any of the ports in the United Kingdom. The second, dated June 19, 1834, was on the value of the ship itself on the same voyage; and the third, which was on the cargo, bore date August 8, 1834.

Mr. Sergeant Taddy and Mr. Channel were counsel for the plaintiff; and Mr. Sergeant Wilde and Mr. Amos for the defendant.

The case was tried once before, when the jury returned a verdict for the plaintiff. A rule was afterwards obtained for a new trial, on the ground that the verdict was against the weight of evidence; and, consequently, it now came on for trial a second time. The substance of the evidence was to this effect:—The vessel having discharged her outward cargo at Sierra Leone, she proceeded to the river Scarcies to take on board a cargo of timber. While there she was examined and underwent some slight repairs. She then returned to Sierra Leone, where the captain and several of the crew fell sick. She had received some injury in crossing the bar, and whilst the captain was ashore, ill, she underwent some further repairs, and was examined by two surveyors. She had been but a short time at sea when very rough weather came on, and the ship began to leak to such a degree that the crew insisted on putting back, and presented a paper to the captain, requiring him to return to Sierra Leone, as they apprehended they should not be able to work the vessel; but as the weather shortly afterwards calmed, and the leak was got under, it again tacked about, and proceeded homewards; but before they reached the island of Maderia they encountered some boisterous weather, and two of the hands on board died. They endeavoured to procure more hands at Madeira, but were unable to obtain any; and shortly after they had left that island the vessel made so much water that the crew were obliged, in order to save their lives, to abandon her. They were four days returning to Madeira in an open boat; and the ship was never heard of more. It was contended on the part of the defendant, that when the vessel put to sea from Sierra Leone, she was wholly unseaworthy, as was evident from the statement of the captain, who,

although he swore he considered her tight and sound, yet seemed from the very outset of the voyage to require his pumps to be kept going to keep down the water ; and it was further contended, that considering the weakly condition and insufficient number of the crew, the vessel was not sufficiently manned to undertake a voyage of that description.

Mr. Sergeant Taddy, for the plaintiff, put in the deposition of the captain, and three or four other witnesses, which went to prove that the ship had been repaired at Sierra Leone at a considerable expence ; that it was perfectly sea-worthy when it left that place ; that it had on board an able and efficient crew, and that its loss had been solely owing to the perils of the sea.

Mr. Sergeant Wilde addressed the jury for the defendants, and contended that the vessel had left Sierra Leone in a condition entirely unseaworthy, and that the crew were in such a weak and sickly state as to be unable to manage the ship, which had been lost from these causes.

The Lord Chief Justice charged the Jury, who returned a verdict for the plaintiff—Damages 426*l*.

COURT OF KING'S BENCH, FEB. 22.

(Sittings before Lord Denman and Special Juries.)

BOURMAN AND ANOTHER v. BROWN.

Mr. Cresswell and Mr. Cleasby appeared for the plaintiffs, and the Attorney-General and Mr. Butt for the defendant.

This was an action brought to recover from the defendant damages for alleged negligence in his conduct as a broker. The plaintiffs were the owners of a quantity of oil, which was in warehouse, and the defendant had been employed as a broker to sell this oil, which, however, was not to be parted with but upon a money payment. A contract for the purpose, of ten tons and a half of this oil was entered into between the defendant and a person named Peacock. The oil was immediately sold by Peacock to Messrs. Hare, of Bristol. It appeared from the evidence of a lighterman, that Peacock's man came to him and ordered the oil to be brought up to the side of a ship going to Bristol. This was done ; and it was put on board that vessel. On the next day he saw the defendant, and told him that the oil was shipped ; on which the defendant said that he had not given any orders for the shipping of the oil, and witness remarked that it was not then too late, and that he would stop the oil. The defendant said he would not have the oil stopped, he would see the parties on the subject. The broker who was employed to clear the vessel in which the oil had been shipped heard what passed, and said to the defendant, " Let me know what I am to do, as I must clear the ship." A conversation was also spoken, too, in which it appeared that the defendant was made fully aware of the transfer of the oil to Messrs. Hare and Co., and that it was transferred to them in exchange for oil from Peacock to them. During one of these conversations Peacock came up, and the defendant told him that the oil had been shipped by mistake, without his (defendant's) orders, and Peacock said that that must have been done

by his (Peacock's) man; for that he had not ordered it to be shipped. A few days afterwards one of the plaintiffs and defendant had a conversation on the subject, and the plaintiff asked "What news from Bristol?" Defendant said "None: but that he supposed plaintiffs would be satisfied if they had the oil, or the money for it;" and the plaintiff answered, "That that was all that he desired." Nothing was done for some time after that, when the defendant applied to Messrs. Hare for payment for the oil, and was told that they had settled with Peacock, with whom alone the transaction had taken place. Peacock had become a bankrupt, and the plaintiff now sought to recover from the defendant damages for a breach of duty in parting with the oil.

Lord Denman told the jury that this was not an action for damages upon a breach of contract, where slight evidence of negligence in the performance of the contract would render the party liable; but that it was an action for breach of duty, in which the evidence of negligence must be somewhat stronger. The jury must say whether the evidence they had heard shewed such negligence on the part of the defendant as justified the plaintiff in calling on him to make good the loss which had occurred. There was no doubt that the plaintiffs had lost what they ought to have had, namely, the oil, which was their property, or the money, for which they had authorised it to be sold; but the question here was, whether the conduct was in breach of his duty as a broker, and whether he ought now to be answerable for that breach of duty.

The jury retired to consider their verdict, and, after being absent for two hours, returned with a verdict—Damages, £425 11s. 9d.

LIMERICK, FEB. 25.—SALVAGE—THE MERCATOR.

On Monday, the 20th inst., a most material salvage trial took place at Kilrush, before Captain Burton Macnamara, R.N., and William Marratt, and Thomas Kean, Esqrs.

The particulars are as follow:—On the 25th of December last, the brig Mercator, of Belfast, was stranded at Dunbeg, in the county of Clare, and thereby became a total wreck; and for which salvage the coast-guard police, Messrs. Pattersons, and others, were claimants, to the amount of £1,036. The claims were ably supported by Mr. O'Connell, solicitor, from Ennis, and as ably opposed on the part of the owners; when, after hearing a variety of testimony on both sides, the trial concluded on Tuesday. The claims were reduced more than one-half, as follow:—Captain White, £10; Mr. Patterson, £207—this included all demands for cash advanced, personal exertions, &c. &c.; police, £64 16s.; total to coast-guard, £105 10s.; sea-weed man, £2 10s.;—making in the whole, £389 16s.

SALVAGE—THE LEDA.

On Tuesday, before the same magistrates, the salvage trial of the brig Leda, of Scarborough, took place, particulars of which appeared in the *Shipping Gazette* of the 20th instant; the claim by Captain Triphook, of the Hamilton, R.C., for saving the vessel and cargo, valued at £4,000, together with the lives of James Mosey, the master and Francis Mosey, the mate, was lodged for £1,000. Mr. Monsell

supported the claim for Captain Triphook : Mr. O'Connell opposed it on behalf of the underwriters. Mr. Randell, surveyor for Lloyd's, and Mr. M. Usborn and Mr. Patterson, the owners of the cargo, were in attendance. The strongest testimony was borne by Mr. O'Connell to the valuable and important services rendered by Captain Triphook, but contended that the claim was too much ; and the magistrates, who, from their local knowledge of the coast, were the most competent judges, awarded Captain Triphook and his crew, the sum of £1,700. This is considered by all parties a slight remuneration for the risk of life ran by Captain Triphook and his crew, who succeeded, under Providence, in saving a valuable vessel and cargo, and (more than all) the lives of two individuals.

THAMES OFFICE, MARCH 13.

SEAMEN'S WAGES.—Captain Summers, the master of the brig Elizabeth, from Vera Cruz, was summoned before Mr. Ballantine by four seamen, named William Wright, James Wright, Brisbane, and Bull, for their wages for services performed under articles.

Mr. W. Evans, a solicitor, appeared for the seamen, and said that Bull claimed a balance of £14 12s., William Wright £13 1s., Brisbane £13 8s. 6d., and the other Wright about the same sum.

Mr. Pelham, the solicitor for the captain, said, that the demand was objected to on the ground that the seamen had been guilty of mutiny and insubordination ; that they had been absent from the ship nine days on one occasion at Vera Cruz, and three days on another, during which time the captain had to pay substitutes ; and lastly, that they had deserted the ship in the port of London before the cargo was discharged, without leave of the captain.

Mr. Evans said that the captain had handed the accounts to each seaman, setting forth the balances owing ; and, having done so, it was not competent for him now to object to the demands.

Mr. Ballantine overruled the objection, and, in reply to what Mr. Pelham had said, was of opinion that general disorderly and mutinous conduct was not what he could take cognizance of, under the act 5th and 6th Wm. IV., cap. 9, which gave him authority to order payment of seamen's wages when the claim did not exceed £20. If the men had been guilty of mutiny, or had assaulted him, it was his duty to make it a specific charge ; and if such charge was proved, and the men convicted upon it, that would be an answer to any claim subsequently made.

Mr. Pelham—The covenant between the master and the seamen is this, that the men are to behave in an orderly, faithful, honest, careful, and sober manner : they have not done so, they have behaved disorderly.

Mr. Ballantine—That is not a case for my cognizance. If any of them have been wilfully absent, they lose two days' pay for every twenty-four hours of such absence, or the expenses incurred in hiring a substitute.

Mr. Pelham—If the seamen are not to be punished for mutinous and disorderly conduct, how are captains to bring their ships home ? I have always understood, by the decisions previously given here, that

seamen are liable to a total or partial forfeiture of their wages for bad conduct. The seamen refused to put the lights out, assaulted the captain and mate, and were in prison for nine days.

Mr. Ballantine—Will you shew me they were put in prison by lawful authority, and the fees, if any have been paid, and the hiring of a substitute, must be deducted from their pay.

The mate was then called, who read from the log an account, which went to shew there had been a disturbance on board; that the captain and mate were assaulted by the four complainants, and that a guard of soldiers came on board, who conveyed them to a Venezuela brig-of-war, where they were detained nine days, when the captain sent for them, and they were given up.

Mr. Evans said the whole disturbance arose in consequence of the bad supply and bad quality of the provisions, of which the men complained, as he could shew by their evidence. Indeed they had been treated like dogs on board.

The captain said he had a bad crew, and had never seen worse men since he had been a master.

Mr. Ballantine said he had not got a case of misconduct before him. He could stop nothing for the nine days' absence. It was not proved the men were imprisoned by any lawful authority, or had been taken before a magistrate. There was some dispute, the soldiers took the sailors away, and when the captain wanted them he sent for them again.

Mr. Pelham then claimed a set-off for three days' absence on a subsequent occasion, and the mate read from his log a somewhat irregular extract, that the men went on shore on the 30th of November, and returned on the 1st of December.

Mr. Evans—They went ashore to complain they could not get sufficient and proper food, and how can sailors work without it?

Mr. Ballantine said the absence of the men was not properly entered in the log, and he could not therefore make the deduction. He could not, in fact, deal with the straggling peculiarity of the log, and he should have thought, in the present state of literature, something better might find its way even on board a merchant-ship. The 7th section of the act provided "that no such forfeitures shall be incurred, unless the fact of the seaman's temporary absence, neglect of duty, or quitting the ship, shall be duly entered or recorded in the log-book, which only shall specify truly the hour of the day at which the same shall have occurred, and the period during which the seaman was absent or neglected his duty."

Mr. Pelham then contended that the seamen had forfeited a month's pay by leaving the ship on her arrival in the port of London, without "previous discharge or leave from the master," according to the 7th section just quoted. The arrival of the ship in dock on the 26th of February, and the desertion of the men, who never returned, was proved.

Mr. Evans said the men having sailed back to the port of discharge, the agreement was complete.

Mr. Pelham argued that the men were bound to stay by the ship until the cargo was delivered, or till they had received a discharge from the captain.

Mr. Ballantine said it was part of the implied contract that the seamen should remain a certain number of days by the ship. The men had not received their discharge, and they must forfeit a month's wages. He ordered the wages to be paid subject to that deduction, and disallowed the others.

Captain Summers has given the following explanation of this case, to which we subjoin the just remarks on it, which appeared in the *Shipping Gazette*:—

To the Editor of the Shipping Gazette.

Sir,—In your Thames police reports of Monday, 13th, you will perceive some statement of wages claimed by the crew of the brig Elizabeth, from Campeachy; but so little was the case attended to, that I fear it will escape the notice of the public, if you do not favour me by calling their particular attention to it, through your pages. I arrived in this port on Sunday, the 26th ultimo. On the 4th instant I tendered the seamen—John Ball, James Wright, William Wright, and James Brisbane, their wages, deducting therefrom 5*l.* 3*s.* 0 $\frac{3}{4}$ *d.* from each man, for expenses incurred in Vera Cruz under the following circumstances, and to which I call the earnest attention of ship-owners, merchants, underwriters, and ship-masters. The brig Elizabeth, with cargo on board to the amount of 10,000*l.*, was lying in the port of Vera Cruz, on the 16th Nov., 1836; at 2 P.M., the above-named seamen refused farther duty, and went to the fore-castle. At 9 45 P.M., the light was ordered to be put out (the rule of the ship was to have it out at nine) by the mate; who received as an answer from the seamen, that they would do so when they pleased. I desired the mate to wait five minutes, and then repeat the order, and say, if not put out, he must come down and put it out himself. He did so, but no respect was paid to his commands; and I, then standing on the fore-deck, desired the mate to go down and put it out. As soon as he reached the floor of the fore-castle, he was violently attacked by the aforesaid men. Seeing him under them in a very fearful situation, I jumped down to render him some assistance, but by this time he had struggled his way to the light, and got it extinguished. I received several very severe blows in the face, and finding I could procure no order, but risking both the life of the mate and myself, I hastened on deck, and called aloud for help; boats instantly came, and I went to the guard-ship, leaving the mate armed. On my return I found the row guard-boat alongside, and the officer, with soldiers, on board, to whom I made known the affair. He ordered the seamen up, and took them on board the guard-ship; and the next morning, in company with a British ship-master, I called on the consul with the log-book. He said, all that was done was perfectly right; that it would be better to leave them there than to bring them on shore to prison, where they would be devoured by vermin, and possibly be contaminated with filth and disease. Understanding how combined they were, the consul wrote to the captain of the port, causing them to be put in separate ships to break the link of the mutiny, and give the well-disposed, if any, a chance of sending in their submission as soon as they pleased. Entirely by the consent and advice of the consul, they remained there until the 25th, incurring expenses to the amount

of 16*l.* 15*s.* 9*d.* On this day they went before the consul, to whom they expressed their sorrow for what they had done, and promised to behave as honest and good men, provided he would intercede with me to forget what had passed.—(A consular certificate and letter to that effect I held in my hand when standing before the magistrate.)—On the 27th they again refused duty, and for two days did none on board, and then for two days more remained knocking about on shore. During this space of time I went and asked them several times to come on board, to take in cargo, but they would not, and I was driven to a farther expense of 3*l.* 16*s.* 6*d.* for each man. All this, and much more than this, Mr. Editor, was read over to the magistrate, Mr. Ballantine. I went with my solicitor, Mr. Pelham; my mate and steward were prepared to prove that there was not one single engagement made in the articles, which these men had not wilfully broken. This I could prove; this I can prove in any court, or in any place. But the seamen, Mr. Editor, are adjudged innocent; they are cleared from every charge; and I, as a British ship-master, after having borne with every species of insult, my commands being laughed at, blasphemed, and cursed, in the most horrible manner to my face, and beaten when protecting property entrusted to my charge, have now the sum of twenty pounds to pay expenses incurred by men who have been mutineers to a certain extent, who have robbed the ship's stores, given strong suspicion of having robbed the cargo, frequently refused duty, and given to their officers every species of abuse. Ship-owners and merchants, see to what extent the law protects your property! A ship-master orders a light to be put out by a number of half-drunken seamen, they refuse to do it—they beat the officer performing the duty, and the law justifies it!—shipmasters, read, I entreat you, the Elizabeth's log, and see to what extent the law protects you! Your articles—what are they? A blank sheet would be of a hundred times the value; for it is clear they only cause us to confide in a phantom and are only of force when brought forward against us. Let Mr. Ballantine consider, that within twelve months from this, he has virtually said to at least two thousand British sailors—“Seamen, you may laugh at your officers' commands; you may put out your lights when you please; you may beat your officers if they oppose you; you may incur what expenses you like to have your work done for you; you may sit fishing aboard the man-of-war, and see your officers slaving in the sun, and they shall pay for it. Such, I say, Mr. Editor, Mr. Ballantine will, in the course of time, say to all seamen; but, at the least calculation, it will spread as fast as I have above stated. Further, we found, on the same evening that these seamen refused duty, that the bulk-head boards of the fore-castle had been broken down to gain communication with the hold. Now, Mr. Editor, it is the most earnest request of many of your friends, that you will not only publish this, but favour us with a few of your able remarks on it. It is important, vastly important. I shall myself have it brought before the House of Commons, that the honourable house may see how the laws are expounded. As there is nothing behind, Mr. Editor, to give a doubtful turn, you may say what you please; the deeper the matter is probed the better for your obliged and grateful servant,

WILLIAM H. SUMMERS, brig Elizabeth.

Captain Summers was summoned by certain of his crew for wages alleged to be due, for services on board the *Elizabeth*. From the amount thus demanded, he claimed the right of deducting the sum of 16*l.* 15*s.* 9*d.*, an account of expenses incurred by the imprisonment of the claimants at Vera Cruz, in consequence of mutinous conduct; and two further sums, on account of absence from duty, without leave. Mr. Ballantine, for some reason which we can neither ascertain, nor conjecture, refused to entertain Captain Summers' complaint in respect of its more important points, on the allegation, touching the first point, that he had no proof of the men having been imprisoned by any legal authority; and on the allegation touching the second, that the entry in the log-book was not so explicit as the Act of Parliament required. Upon the last mentioned point we can say nothing, excepting that Captain Summers avers the entry in the log to have been in every respect correct: we have not ourselves seen the entry, and therefore leave the question where we find it.

On the first mentioned point, however, we have seen the documents tendered to Mr. Ballantine, in support of Captain Summers' statement, and we again repeat, that we are wholly at a loss to conjecture the grounds upon which the worthy magistrate refused to go into the case. There was first, the British consul's certificate, to the effect that mutinous conduct had been alleged against the present claimants by Captain Summers; next, there was a letter addressed by the consul to Captain Summers, interceding on behalf of the seamen, that he would again take them on board, they having made their submission to him, and further expressed their readiness to ask pardon of their captain; and, lastly, there was the bill of charges incurred by the imprisonment of the seamen—made out, not as against Captain Summers, but against the British consul, under whose orders these charges had been incurred. These documents were tendered to Mr. Ballantine by Captain Summers, in corroboration of the statements made by himself and his mate; but Mr. Ballantine was pertinacious in his determination not to inquire into the matter; and having thus refused the only proofs Captain Summers could supply in support of his case, the magistrate decided against the claim he set up!

Here we leave the case for the present. Captain Summers' letter places the affair in its proper light, as affecting the masters and owners of British merchantmen; and we cannot believe that the matter will be permitted to remain where it now is.

We are requested by Captain Summers to say, that no allegation about badness of provisions on board the *Elizabeth* was made at the police-office by the counsel employed by the seamen—Mr. EVANS.

NEW BOOKS.

THE NATURALIST'S LIBRARY, Vol. VIII. *Foreign Butterflies*, by Mr. Duncan. *J. Highly*, 32, Fleet Street, London.

WE cannot too highly commend these little volumes to the notice of our readers, and shall be glad to find that they have been the means of winning followers to the study of nature's treasures, through our

recommendation. The specimens in all the volumes which we have seen are accompanied with full descriptions, and coloured in their gorgeous drapery with great care and attention, an important feature in such a work. The present volume contains a portrait of the celebrated Lamarck, and it is no less worthy the attention of the student of nature than its predecessors.

THE EUCHARIST: *its History, Doctrine, and Practice; with Meditations and Prayers suitable to that holy sacrament.* By W. J. E. Bennett, M.A. W. J. Cleaver, 80, Baker Street.

Assuredly we never undertook to state our opinions on theological subjects; but when a *good book* falls in our way, there is a certain feeling in the heart that bids us tell our readers of the treasure which is within their reach. There are many of our young nautical friends who might peruse with advantage the work before us, and when they had done so would cordially thank us for pointing it out to them. The title of the work says sufficient for it; but we may presume to add, for the information of those who partake of the highest rite of our Established Church, that they will find in this History of the Eucharist an account of the various modifications it has undergone, and its gradual progress in all ages since its institution; the pure simplicity of its character is here explained, and the various schisms are related, which have led to a departure from it, and indeed far more is told than we can here go into; all of which cannot fail of being read with feelings of the deepest interest.

A BRIEF HISTORY OF DOVER AND RAMSGATE HARBOURS, *with a description of the Coast between Dungeness and the Isle of Thanet, &c.* By a Naval Officer. Thomas, Finch Lane, Cornhill.

This little pamphlet has been drawn up with much care, and takes an unprejudiced view of the subject of a packet station between this country and France. After giving some interesting particulars in the history of the two places, the author clearly shews the disadvantages of both, and shews that a harbour such as that proposed at Sandwich is what is wanted. We shall take an opportunity of saying a word for ourselves on this subject at a future time, and in the mean while recommend this pamphlet to those of our readers who are desirous of information on this momentous subject.

We observe that a new edition of Marryat's Code of Signals for the Merchant Service has just been published, on the occasion of their use having become so general, in which several important signals have been introduced.

APPOINTMENTS.

Captains.—Sir J. J. G. Bremer, act. 10; F. Brace, 3; T. Maitland, 2; Capt. Sir J. J. G. Bremer, 29.

Commanders.—J. Kingcome, 2; S. P. Pritchard, 3; F. Bullock, 16, for Surveying Service; C. Seale, 17; A. Wakefield, 30; T. Bevis, 31; H. Bolton, 32; B. M. Festing, 32; S. F. Harmer, 32; D. Marsh, 32.

Lieutenants.—A. Jerningham, 2; F. Cannon, 3; J. Mends, 3; J. Bainbridge, 3; V. Baker, 3; W. W. Chambers, 2; R. Symonds, 2; F. W. Foote, 4; R. L. Atkinson, 4; J. Morshead, 5; J. Bowden, 6; R. Phillips, 18; A. G. Rothery, 5; E. Young, 21; F. A. Newman, 21; A. Kuper, 29; P. B. Stewart, 29; C. Starneer, 30; W. Hicks, 32; G. E. Davis, 31; G. Bott, 3; E. Owen 31; J. Duncan, 31.

Masters.—J. E. Mills, 3; R. Hodges, 9; J. Killock, *act.*, 12; J. Sprent, 2; J. Jackson, 29; G. Wright, *act.*, 30; W. Wadbury, 31; J. Grey, 31; J. P. Moon, 31.

Surgeons.—E. Leah, 14, from 13; J. Houston, 13, from 14.

Pursers.—J. F. Newell, 3; E. S. Stewart, 2; J. Richards, 7; W. Edwards, 29; W. Hamilton, 30.

Chaplains.—G. Austen, 25.

Mates.—D. Elliott, 10; J. H. Lysaght, 2; R. Bateman, *Col.*, 2; C. H. V. Temple, 2; J. Astle, 2; J. Strettle, 2; T. L. Brooke, *Col.*, 11; H. N. Baker, 1; R. M. Flood, 5; E. A. Glynn, *Col.*, 19; C. Sparshott, 20; A. S. Gordon, 3; H. Stewart, 22; E. P. Charlewood, 24; E. Molloy, 26.

Assistant Surgeons.—A. Scott, 1; G. Oman, 2; E. Alexander, 8; J. Mc Valence, 3; A. Kilroy, 2; R. D. Pritchard, 2; F. N. Sleight, 8; H. Scott, 23; F. Sharpe, 29.

Midshipmen.—H. Baker, 1; S. H. Henderson, *Col. Vol.*, 3; E. W. Vansittart, 2; A. C. Berthwistle, 2; Hon. R. Boyle, 2; C. Newbolt, 2; R. Hall, 3; R. Rolfe, 22; H. King, 20; C. Tonge, 27; W. W. Walker, 28.

Second Masters.—C. Parker, 2; G. H. Harper, 3;

Clerks.—W. B. Farrer, 3; E. Couch, 15.

[Names of Ships to which Officers are Appointed.]

1, Britannia; 2, Wellesley; 3, Donegal; 4, Cornwallis; 5, Hazard; 6 Ordinary at Portsmouth; 7, at Packet Est., Liverpool; 8, Royal Adelaide; 9, Ariadne; 10, Hercules; 11, Pembroke; 12, Cockatrice; 13, Talbot; 14, Blonde; 15, Russell; 16, Boxer St.V.; 17, Ordinary at Plymouth; 18, Sparrowhawk; 19, Savage; 20, Pelorus; 21, Princess Charlotte; 22, Castor; 23, Romney; 24, Excellent; 25, Sringapatam; 26, Talavera; 27, Inconstant; 28, Conway; 29, Alligator; 30, Rhadamanthus; 31, Redwing; 32, Coast Guard.

Births.

At the Royal Hospital, Haslar, on the 23rd of June, of a son, Mrs. Charles Garrett, daughter of Rear Admiral Superintendent Garrett of that Establishment.

On the 20th June, at Harrowgate, the lady of Captain Boss, Royal Navy, of Otterington-hall, of a daughter.

Marriages.

July 4th, at St. Sidwell's church, by the Rev. James Ford, Capt. R. Owen, R.N., to Susannah Charlotte, eldest daughter of John Walker, Esq., Ordnance Store-keeper, Bahamas.

On the 13th June, at St. George's Church, Hanover-square, Captain Henry, R.N., to Miss Mears.

At Melbury, Edward St. Vincent Digby, Esq., eldest son of Vice-Admiral Sir Henry Digby, K.C.B., and Viscountess Andover, to the Lady Theresa Strangways, eldest daughter of the Earl of Ilchester.

On June the 22nd, at Southwold, Suffolk, Mr. Biden Brewer, of Gosport, to

Miss Symonds, only daughter of Captain Symonds, R.N., of the former place.

At Taunton, R. B. Willy, Esq., of Pedwell, to Susan, third daughter of the late Captain Palmer, R.N.

On the 6th June, at Kingston Church, by the Rev. J. Stewart, Lieut. Atkinson, R.N. to Charlotte, youngest daughter of the late Capt. William Field, R.N.

At Paris, Captain Williams, R.N., (late of H. M. S. Britannia,) to Charlotte, daughter of the late J. Taylor, Esq., and niece of Admiral Taylor.

Deaths.

At Brighton, aged 17, Adelaide, daughter of Vice-Admiral Sir R. W. Otway, Bart. K.C.B., Commander-in-Chief at Sheerness.

At Brussels, on the 10th June, of rapid consumption, the fatal effects of influenza, Mary Jane, eldest daughter of William Harvey, Esq., and grand-daughter of the late Admiral Sir Henry Harvey, K.B., of Walmer, Kent.

At his seat, Longoleat, Wilts, the Marquis of Bath, Capt. Royal Navy, (1822), aged 40; he is succeeded in his

title by his eldest son Viscount Weymouth, a minor, born March 1st, 1821. The late Marquis died a few weeks since, and his eldest son in March last.

Lieut. Dixon, R. N., (1802,) an out-pensioner of Greenwich Hospital.

Lieut. John Gabriel, R.N., at Haslar Hospital.

At Bishopwearmouth, Captain Hew Stuart, R.N.

At Stonehouse, on the 29th June, Lieut. Charles Plunkett, R. N., aged 46.

At Exeter, on the 2nd June, Retired Commander John Roberts, (b.) R.N.

At Kentish-Town, on the 25th June, Commander Geo. Brown, aged 75.

June 29th, Lieutenant Charles Puckett, R.N., (1826,) aged 45, leaving a disconsolate widow and four small children to lament their loss.

On the 23rd of June, at Woodcote, near Goodwood, the infant son of Capt. G. F. Dixon, R.N.

In Crawford Street, London, of Scarlet Fever, on the 27th June, Alexander Elmslie, aged 7 years, eldest son of Lieut. A. B. Becher, R.N.

In Crawford Street, London, of Spotted Fever, on the 29th of June, Charles Richard, aged 5 years, youngest and only remaining son of Lieut. A. B. Becher, R.N.

METEOROLOGICAL REGISTER,

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

		JUNE, 1837.													
Month Day.	Week Day.	BAROMETER. In Inches and Decimals.				FAHRENHEIT'S THERMOMETER, In the Shade.				WIND.				WEATHER.	
		9 A.M.		3 P.M.		9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
		In.	Dec.	In.	Dec.					A.M.	P.M.	A.M.	P.M.		
1	Th.	29.91	29.96	50	60	49	62	N.W.	N.W.	6	5	Qp (2)	Bc.		
2	F.	30.02	30.03	53	57	47	61	W.	W.	3	4	Bc.	O.		
3	S.	29.95	29.98	49	57	48	63	N.W.	N.W.	3	3	Or. (2)	Bc.		
4	Su.	30.12	30.10	53	61	38	63	E.	E.	2	2	Bc.	Bem.		
5	M.	30.14	30.12	62	69	50	70	S.W.	S.W.	3	4	Bc.	Bcpt (3)		
6	Tu.	30.10	30.13	56	64	52	68	N.W.	N.W.	3	4	B.	Bc.		
7	W.	30.16	30.14	53	57	42	58	N.E.	E.	5	5	Bc.	B.		
8	Th.	29.91	29.86	54	56	40	60	E.	E.	6	6	Qbcm.	Qbcm.		
9	F.	29.75	29.71	60	73	48	74	E.	E.	4	4	Bc.	Or. (3) (4)		
10	S.	29.63	29.65	61	69	56	70	S.	S.W.	5	5	Bc.	Qbcm (3)		
11	Su.	29.76	29.80	60	68	54	70	S.W.	S.W.	6	6	Qbcm (2)	Qbcm.		
12	M.	29.94	29.90	64	63	50	72	S.W.	S.W.	3	3	O.	Op (3)		
13	Tu.	29.84	29.84	70	72	57	76	S.W.	S.W.	4	5	Bc.	Bc.		
14	W.	29.81	29.87	70	72	57	74	S.W.	S.W.	2	2	Or (1)	Bc.		
15	Th.	30.00	30.01	65	76	54	79	S.W.	S.W.	2	2	B.	B.		
16	F.	29.96	29.92	67	74	56	76	E.	E.	3	4	Bc.	Bcr (7) (4)		
17	S.	29.96	29.98	65	72	57	73	S.W.	S.W.	4	5	Bc.	Qbcm.		
18	Su.	29.80	29.84	60	66	56	70	S.W.	S.W.	4	4	Or (1) (2)	Bcpt (3)		
19	M.	29.96	29.96	65	70	55	72	S.W.	S.	3	3	Bc.	Bc.		
20	Tu.	29.93	29.95	69	75	51	76	S.	S.	2	2	Bc.	Bc.		
21	W.	30.07	30.11	67	74	57	74	S.W.	S.W.	3	3	Bc.	B.		
22	Th.	30.32	30.34	65	71	52	72	S.W.	N.E.	2	3	Bm.	Bc.		
23	F.	30.39	30.35	68	74	53	75	E.	N.E.	2	2	B.	B.		
24	S.	30.23	30.19	66	76	50	77	N.E.	N.E.	3	3	Bm.	B.		
25	Su.	30.10	30.14	68	76	54	78	E.	E.	3	3	B.	B.		
26	M.	30.23	30.25	66	72	53	73	N.E.	E.	3	4	Bc.	Bc.		
27	T.	30.23	30.22	63	65	47	65	N.E.	N.E.	4	4	Bc.	Bc.		
28	W.	30.18	30.17	60	67	43	68	N.E.	N.E.	4	4	B.	B.		
29	Th.	30.14	30.11	61	72	46	73	E.	S.E.	3	2	Bf.	B.		
30	F.	30.16	30.18	67	77	53	79	N.	N.E.	3	4	Bc.	B.		

JUNE.—Mean height of the Barometer=30.025 inches; Mean Temperature=60.8 degrees; Depth of Rain fallen=1.00 inches.

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

Fr. Ft. 11	E. Ft. 11 $\frac{1}{2}$	Fr. Ft. 12	E. Ft. 12 $\frac{1}{2}$	Fr. Ft. 13	E. Ft. 13 $\frac{1}{2}$
14	15	15	16	16	17
17	18	18	19 $\frac{1}{2}$	19	20 $\frac{1}{2}$
20	21 $\frac{1}{2}$	21	22 $\frac{1}{2}$		

TIDE SIGNALS AT HAVRE,

Showing Depth of Channel at previous High Water, in French and English Feet.

Fr. Ft.—French Feet. E. Ft.—English Feet.

ORIGINAL PAPERS.

SEPTEMBER, 1837.

DEPTH OF THE CHANNEL INTO HAVRE.—*French Coast.*

THE following signals will be found useful to vessels visiting the port of Havre.

Explanation of the Ball signals established at la Heve :

The depth of water which there was in the channel into the Port of Havre during the *previous* tide, may be known from the following arrangement of balls on the yard and mast :—

	French Feet.	Eng. Feet.
One ball at either yard-arm	116	— 11 $\frac{3}{4}$
Two balls, one at each yard-arm	12	— 12 $\frac{1}{4}$
Three balls, one at each yard-arm and one half-mast high	13	— 13 $\frac{7}{8}$
One ball at the mast-head	14	— 15
Two balls, one at the mast-head, and one at either yard-arm	15	— 16
Three balls, one at the mast-head and one at each yard-arm	16	— 17
Four balls, one at the mast-head, one half-mast high, and one at each yard-arm	17	— 18
One ball at the mast-head and a pendant over it	18	— 19 $\frac{1}{4}$
Two balls, one at the mast-head with a pendant over it, and a ball at either yard-arm	19	— 20 $\frac{1}{4}$
Three balls, one at the mast-head, with a pendant over it, and one ball at each yard-arm	20	— 21 $\frac{1}{4}$
Four balls, one at the mast head, with a pendant over it, one ball at each yard-arm, and one ball half-mast high	21	— 22 $\frac{1}{2}$

N.B. The addition of six inches will be shown by a pendant at one of the yard-arms.

The signal will be changed every day at three hours after high water.

NEWLY DISCOVERED SHOALS OFF PALAWAN, AND IN THE STRAIT OF SUNDA, WITH DIRECTIONS FOR OOLOGAN BAY.

To the Editor of the Nautical Magazine.

Ship Cordelia, St. Katherine, 21st July, 1837.

MR. EDITOR,—Through the general circulation of your most invaluable work, the Nautical Magazine, I beg leave to give publicity to some dangers discovered, from the ship Cordelia, under my command, on the

coast of Palawan in the China Sea, on the night of the 3d Dec., 1836, and not hitherto laid down in Horsburgh's charts or Ross's survey. The enclosed* contains the chart of Ooloogan Bay and the adjacent shoals, with the account published in the Canton Press. We saw no vestige of any inhabitants in the bay, nor even fires by night, which I attribute chiefly to the want of fish in the bay, as we were not even able to obtain a bite at our baits alongside the ship or on the reefs from the boats. Shingle was abundant on all the beaches, and timber plentiful. I have reason to believe these dangers to be the northernmost dangers on the coast of Palawan, as we pursued a N.N.E. course, after passing the reef off Ooloogan Point, and without further interruptions passed Rugged Land and Busvegan.

I beg leave also to apprise my nautical friends of a reef off the north end of Green Island. On February 9th, 1837, 10 A.M., being abreast, and about two miles off Green Island, (of the Tambelains,) bearing E.S.E., observed a reef, dry, full half a mile from the shore, and breakers about three quarters of a mile out. This is not mentioned by or laid down in Horsburgh's chart.

Again, on February 13th, 1837, at eight, P.M., being becalmed off Pulo Sebucco, in the straits of Sunda, anchored in thirteen fathoms, with the passage open between Pulo Bessy and Sebucco, bearing W.S.W.: at four A.M., weighed with the land breeze, and stood out between Sebucco and Bessy, but falling calm, we were drifted into twelve, seven, and ten fathoms under Sebucco by a north-westerly current, and so close, that we could not let go our anchor without the risk of tailing in and swinging, on approaching the south-westerly part of Sebucco, off which Horsburgh places a rock and reef on his chart. We were enabled to swing the ship's head off shore by a light air from the land: her stern passed within less than twenty yards of the south-westerly point. We had twenty-four and twenty-five fathoms rocky bottom, but no appearance of the rock or reef; but off a point, about a quarter of a mile to the northward, which I should call the west point of Sebucco, there were rocks visible, and a reef trending in a N.W. direction to a considerable distance.

A cluster of rocks were also visible off the N.W. point of Sebucco, above water, not laid down in Horsburgh's chart, about a mile and a half or two miles off the island. When the northernmost of the Three Brothers, or Pulo Teega, in Rajah Bassa roads, was on with this cluster of rocks, bearing N.E. from the ship, Saradong, or Tim's Island bore N.N.W., and Treeless Rock S.S.W. $\frac{1}{2}$ W. I was not able to get another transit-bearing to find the exact position. I would recommend any person coming out of the straits by this passage, to endeavour to maintain a more mid-channel course, by borrowing towards Pulo Bessy when the current sets to the westward, which, by the formation of the channel, is thrown towards the S.W. point of Sebucco.

I remain, yours, obediently,
 GEORGE CREIGHTON,
 Master of ship Cordelia.

* Our arrangements would not allow of our publishing the sketch alluded to in our present number, but we would not on that account withhold the important information of Captain Creighton from publication.

Shoal in the Palawan Passage.

“ At noon, being in lat. $9^{\circ} 55'$ N., by observation, and long. $117^{\circ} 55'$ E., by chronometer, wind N.N.W., tacked to the westward within one mile of some breakers, bearing E.N.E., supposing them to be the York breakers laid down in Ross's survey and Horsburgh's charts. At 2 30 P.M., tacked to the northward again. At 5 30 P.M., saw the breakers from the top-sail yard, bearing E.S.E., wind N.N.W., ship heading N.E. The charts representing a clear sea: in the expectation of making a good lay up the coast, stood on N.E. At 7 P.M., breeze freshening and squally, furled main-top gallant-sail, (ship under single reefs, courses, jib and mizen) with a heavy head-sea running. At 8 45 P.M., alarmed by the cry of breakers on the weather-bow; bearing N.N.E., passed within a cable's length to leeward of it, a small patch, breaking violently, supposing it to be one of those small three-finger patches marked within the line of soundings; stood on with caution. At 9 30 P.M., breakers were reported on the lee-bow, bearing east; two small reefs in the line of N.E. by E., and S.W. by W.; stood on with a hand at the mast-head. At 10 P.M., a breaker was reported a-head, hands stationed to tack; but afterwards said to be a sea-top, which proved to be an occasional break, and broke the second time close to the bows. Tacked, and stood to the westward. Strong N.N.W. wind, night dark. At 10 45 P.M., breakers were again reported, bearing W. by S., and fearing we might not weather them, kept away W.S.W.; soon found we were under the lee of an extensive reef, the breakers being visible along the weather-beam. At 11 30, the water becoming discoloured and perfectly smooth, with a strong smell of kelp, the lead getting foul in attempting to sound, hauled main-sail up, and bore up south.

“ At midnight, breakers being again reported a-head, hauled fore-sail up, and hove to; head to the northward, in twenty-five fathoms. Drifted to south-west, with the current, into forty-five, fifty, and fifty-three fathoms. At 2 30 A.M., weather having cleared up, lat., by mean of stars altitude, $9^{\circ} 53'$, long., by chronometer and stars altitudes, $117^{\circ} 58'$, placing us within the reef we had weathered at noon. At 3 A.M., breakers were visible on lee-quarter, bearing south in two small patches; filled main-yard, and set the jib; head N.E. At 4 30 A.M., the moon rising, and throwing a reflection through a cloud, discovered us a shoal close on the lee-bow; had just time to haul the fore and main tacks on board and weather it; though within a few yards of the shoal, we could not hear the breakers; no soundings at sixty fathoms. At daylight, found ourselves between two reefs, about ten miles apart, with a broken reef of detached breakers connected under water close to us, over which we passed twice in twelve and fourteen fathoms. The high land of Palawan just visible, bearing S.E. At 9 45, being abreast within a mile of the north end of the middle reef, made it in lat. $10^{\circ} 2'$ N., and long. $118^{\circ} 21'$ E.

“ At 3 P.M., Ooloogan Bay being open under our lee with a falling glass, foul wind, and unfavourable current, bore up, and anchored under Harbour Island in eighteen fathoms, the island bearing N. by W. This bay is represented in the charts full of islands; I could

find none, but Harbour Island and two small rocky islets, one at the bottom of the bay, and one on the east side. Harbour Island is connected to the main on the west side by coral reefs. In directing to the anchorage in Ooloogan Bay, pass on either side of three peaked islands, and on the east side of Harbour Island, which is about two and half miles in length, N. and S., and not more than one hundred yards wide in any part, and anchor from half to one and a half mile from its south end, shutting in the entrance by bringing the south end of Harbour Island on to east point of the bay, but do not stand higher up; the bay being formed of a bed of coral rocks, with from five fathoms to two feet water on them, and the whole of the shores of the bay are lined with coral reefs.

“We saw no trace of any inhabitants. Plenty of timber, and from the mountainous shores, no doubt, water may be found in plenty. There is an inlet to the westward, just below Harbour Island, of five or six miles in length, with eighteen fathoms between the coral banks, but not more than half a cable’s length wide from reef to reef, and another at the top of the bay to the S.W. had the appearance of a river. But having lost one of my quarterboats in a gale in the bay of Bengal, we could not venture far out of sight of the ship; it blew hard all the night of the 4th, and the morning following, but fell calm in the evening. We tried the echo with a twelve-pounder gun, which was beautiful, being a perfect calm. The shelter is admirable; though blowing fresh, the water was perfectly smooth. In standing out of the bay the morning of the 6th, with a light S.E. wind, intending to keep near the land to have the advantage of the land breeze, found there was a reef running out about four miles in a N.N.W. direction off Ooloogan point. In laying down the latitudes and longitudes for the advantage of my nautical friends, I can speak with some confidence as to their correctness, having passed within a mile of the Royal Captain Shoal at noon two days before, and also communicated with Captain West of the Trusty since my arrival, who also made the south end of the breakers the same day, and our observation agreeing, and in placing them separately, will enable those to mark them on their charts to do it more easily.

	Lat.	Long.
* North end of reefs, outer reef . . .	10° 04' N	118° 16' E
————— middle reef . . .	10 02	118 21
————— inner reef . . .	10 01	118 27
South end of outer reef . . .	9 55	117 55

“The other two reefs I could have no opportunity of judging their southern extent, and must now close my long letter, Mr. Editor, but cannot, without acknowledging my most grateful thanks to the Lord for our preservation, and fulfilling his word:—‘Thou will keep him in perfect peace whose mind is staid on Thee, *because* he trusteth in Thee.’ Had it remained squally and thick, nothing could have saved us from destruction. But He who can still the winds and the waves, could clear the cloudy canopy of the sky, and though it showed us the surrounding danger, could still the mind by saying, ‘Fear not, it is I.’

O that it were in more of my sea-faring brethren to have this confidence; they would soon find all the burden of the command borne for them.

“ I remain, yours faithfully,

“ GEORGE CREIGHTON,

“ Master of ship *Cordelia*.”

NOTICE TO MARINERS.—FRENCH LIGHTS.

(Received from the French Government.)

Hydrographic Office, Admiralty, 10th July, 1837.

INFORMATION has been received from the French government, that on the 15th of this month, six new lights will be exhibited on the under-mentioned points of the coast of France.

In the Channel.—Courseules Light.

A fixed light on the West Jetty Head, in lat. $49^{\circ} 20' 22''$ N., and long. $0^{\circ} 20' 20''$ W. This light is placed thirty English feet above the high water of equinoctial springs, and in fine weather may be seen two leagues.

N.B. This fixed light of Courseules may be seen at the same time with the *intermitting* light on Point de Ver, (in $40^{\circ} 20' 28''$ N., and $0^{\circ} 31' 4''$ W. of Greenwich,) and may therefore be easily recognised.

In the Mediterranean.—Port de Marseille Lights.—Two Harbour Lights in the Entrance.

1st. Fixed Light of St. Jean; it is placed on the parapet of the covered way at the foot of the Tower of Fort St. Jean, on the left hand in entering the port, in lat. $43^{\circ} 17' 45''$ N., and in longitude $5^{\circ} 21' 46''$ E. This light is thirty feet above the level of the sea, and in fine weather may be seen three leagues.

2nd. Intermittent Light of the Tete-de-More: it is placed on Tete-de-More point, between the Coves of Reserve and Pharo, on the right hand in entering the port of Marseille, and in latitude $43^{\circ} 17' 43''$ N., and long. $5^{\circ} 21' 35''$ E. This light is sixty-two English feet above the level of the sea, its flashes are repeated every three minutes, and in fine weather they may be seen three leagues.

N.B. On a south-west bearing both these lights are concealed by the hill called “ la Butte du Pharo.”

Porquerolles Light.

Flashing Light on the South point of Porquerolles Island between Cape d'Arme and Cape Roux, in lat. $42^{\circ} 59' 7''$ N., and long. $6^{\circ} 12' 50''$ E. This light is fifty-two English feet above the ground, and two hundred and sixty-two feet above the sea.

The flashes are repeated every four minutes, and are preceded and followed by short eclipses. The steady light which intervenes between these eclipses lasts about two and three quarters minutes, and in fine weather

may be seen seven leagues, but the eclipses will not be total within the distance of three leagues.

Levant, or Titan Light.

Fixed Light on the eastern point of Levant Island, in latitude $43^{\circ} 2' 30''$ N., and in longitude $6^{\circ} 30' 10''$ E. This light is thirty-nine English feet above the ground, and two hundred and forty-six feet above the sea, and in fine weather may be seen five leagues.

Cape Lardier Light.

Revolving Light on Cape Lardier, or, as it is sometimes called, Cape Camarat, in latitude $43^{\circ} 11' 50''$ N., and long. $6^{\circ} 41' 50''$ E. This light is sixty-six English feet above the ground, and four hundred and twenty-seven feet above the sea. Its flashes are repeated every minute, and in fine weather they may be seen eight or nine leagues. Its eclipses do not appear total within the distance of three leagues.

N.B. When six or seven leagues distant, the appearance of this light can be distinguished from the intermittent light on Planier Island (in $43^{\circ} 11' 57''$ N., and $5^{\circ} 14' 0''$ E.) only by its revolutions being of one minute interval, while the light on that island revolves every half minute; but this distinction would be sufficiently striking to any attentive person, even if there were a less difference of longitude between them than $1\frac{1}{2}^{\circ}$. Besides, it rarely happens that this light is seen before passing within sight either of the Antibes light, which lies thirty miles N.E. of Cape Lardier, or of the Porquerolles or Levant lights, which are respectively twenty-five and thirteen miles to the westward of it.

It should be further remarked, that from the manner in which the names are applied to the coast in some of the charts of the Mediterranean, this Cape, if called Cape Camarat, may be confounded with Cape Taillat, which bears from it S. 27° W. at three miles distance, and on which stands the old tower of Camarat: it should therefore be always named Cape Lardier.

OBSERVATIONS ON "ATLANTIC STEAM NAVIGATION." *Suggested by a Paper on that Subject in the last Edinburgh Review, and some Remarks on the Bursting of Boilers.*

To the Editor of the Nautical Magazine.

London, June, 1837.

SIR,—The degree of consideration which is accorded by the public to the opinions set forth in the *Edinburgh Quarterly*, as being those of the very *elite* among the *savans* of "Modern Athens," calls for a proportionate degree of distrust, when those opinions appear to be erroneous, or, as in the present instance, when they are marked by a determination to adopt a partial view of a subject, and to follow a course of argument, leading to a result previously resolved on.

I intend, Mr. Editor, with your permission, to consider *seriatim* the objections of the *Edinburgh Quarterly* on this subject, believing that I can show them to be *not valid*, and that there exist no such difficulties as are raised in that respectable journal to the making of a voyage direct from Great Britain to New York; which voyage I suppose to be contemplated by the spirited individuals who are now constructing the immense steamers destined for the Atlantic. I use the term "suppose," for I really do not know the details of the plan, but I do suppose such to be intended; first, from believing it to be fully practicable, and next, from seeing clearly, that to obtain the full advantages of such navigation, the direct voyage to New York, *must* of necessity be the most essential feature of the plan.

Having been rather attentive to the progress of steam navigation, I will avail myself of this opportunity of expressing my surprise at government not taking into immediate serious consideration the immense advantages to be gained by the adoption of steamers "as an important arm of war." To those who have looked at this subject in its *certain* application to the purposes of war, it is truly astonishing, whilst individuals of all classes are joining their funds, and devoting their energies to avail themselves of this wonderful power, in promoting commercial views, and extending intercourse to all quarters of the globe, that the British government can hardly be said as yet to be doing anything in earnest; that they have not yet taken advantage of the superior means which they possess over all other nations, and of being before them all, in the use of a force, which will be so efficacious as armed steamers undoubtedly will be. But on this point, Mr. Editor, I shall probably address you further hereafter, intending, with your permission, to make the pages of your work the vehicle for conveying to the world the result of my reflections and experience on steam navigation. I shall, therefore, at present confine myself to a review of the difficulties started by your powerful and authoritative contemporary, the *Edinburgh Quarterly*, on the applicability of steam to "Atlantic navigation," concluding with some reference to the late melancholy catastrophe at Hull.

The author of the paper in question in the *Edinburgh Quarterly* seems to have entirely overlooked, in his statements at the outset, that, instead of "the attempts to make an East India voyage never having been made since 1825," two powerful steamers, constructed for the duties of men of war, are now on their way to Bombay, (if not already there,) and were so before the number referred to, of the *Edinburgh Journal*, was published. One of these is known to have arrived at the Cape, and whose journal so far, if I am rightly informed, will remove some, perhaps all, of his objections to the extended use of steam at sea. This much merely in passing: the particular objections I intend to meet directly, by such statements and reasoning, as I think will show, that the views of those about to start the enterprize of steam communication to New York (not one of whom I know) were not so visionary as our northern "literati" imagined; nor quite so impossible, as Dr. Lardner is reported to have stated it to be, when he compared it to one of *intercourse with the moon!*

Mr. Field has stated, and very properly, that the data upon which Dr. Lardner concluded the impossibility of extending sea voyages by

steam, were drawn from the performances of steamers comparatively out of date ; and, that the recent improvements in these vessels and their machinery, would show different results : and yet, notwithstanding these cautions of Mr. Field, recorded by the writer in the Edinburgh journal, he immediately after proceeds to state, that he has re-examined the question upon data to which Mr. Field's objections do not apply ; and says, " that he has investigated the performances of a vast number of steamers, more especially those of the Admiralty ;" why these very vessels of the Admiralty are expressly those to which Mr. Field alluded ! excepting only the *Medea* and *Dee*, which two ships are, no doubt, very superior vessels, and in their machinery and construction, well fitted for the purpose for which they were intended. But *they are not* the kind of ships from which to conclude what a steamer " to cross the Atlantic " should be ; they were built with different views : and, not to lengthen these remarks unnecessarily, I must leave this point to the consideration of those, who know what the difference must be in ships for the two different purposes. I shall, therefore, put *their* performances altogether out of the question ; but am willing to take the " Perth," and " Dundee," (as well as many other of the Scotch steamers, to which no reference is made by the Edinburgh journal,) as proper vessels, from the performances of which, to arrive at something nearer to a true conclusion. Such conclusion, every one at all acquainted with them, knows, would upset all the figures so carefully used by the reviewer. But to shorten this part of the subject, and by way of selecting vessels which have to encounter weather more nearly assimilating to that which will be met with by the New York steamers, I will merely refer to the performances of vessels, which have been for some time employed, all the year round, in the service of the " Peninsular Steam Navigation Company," and which performances will show how far in the rear of the steamers of mercantile companies are those of the government, as shown by the *Edinburgh Quarterly Review*. The steam ships alluded to, I am credibly informed, have *always* made the passage from Falmouth to Lisbon within five days, which gives 150 miles per day, and are usually both out and home, considerably less than four, excepting only *in the worst of weather*.

But to the objections of the *Edinburgh Quarterly* in their order. The difficulties attending the too great immersion of the paddle-boards, are gratuitously introduced amongst the objections to " Atlantic Steam Navigation." They apply to all sea navigation alike : and surely, they no more retard a vessel crossing the Atlantic, than one navigating the Bay of Biscay or North Sea. The effects of great occasional immersion, in rolling, &c., are not, indeed, experienced in practice to anything near the extent, to which a mere argument, founded upon theory, would lead. That the moveable floats or paddle-boards would be best for sea-going vessels, there can be no doubt ; but as the reviewer very prudently observes, the machinery which causes them to assume angles with the radii of the wheel, favourable to progression, must be constructed less liable to give way, or get out of order, before they can be safely recommended for long voyages.

There is nothing but truth in all that is said about the very serious evils, which more or less must always exist in the deposits of salt, and

other substances, contained in sea-water, and which cannot be converted into steam ; that is, as long as sea-water is used. All these observations of the reviewer are obviously copied from Dr. Lardner's very useful, popular, little treatise on the steam engine ; and it must be admitted, " that blowing off entails an increased consumption of fuel, and does not effectually answer the end." But the reviewer has taken all this school-boy sort of knowledge in an unlimited, and perfectly undefined extent, when applied to practice. Will he condescend to inform us how long this operation may go on, supposing the blowing off every two hours to be attended to, before any deposit can be formed in the boilers, sufficient to constitute " a non-conductor of heat ?" I think it will be found, that even " a direct voyage to New York" might be made, and no great injury take place ; especially if the boilers were of copper ; (the consumption of fuel caused by " blowing off," it is hardly necessary to observe, is included in all estimates and averages, made in sea-going vessels of their expenditures.) We are, however, very fortunately furnished with a remedy for these evils ; which is, by the use of fresh water in the boilers, instead of salt : and in alluding to this, it is not a proof of very great candour in the reviewer, to omit stating, that we are indebted to " Mr. Hall," for the strenuous and successful exertions he is making, to convince the public of the practicability of such adoption of pure water instead of salt. For my own part, from the first moment I gave attention to steam-navigation, and was made acquainted with Mr. Hall's method of effecting the condensation, I could not but see, without at all going into the question as to whether Mr. Hall had, or had not, effected it in the most complete manner possible, that condensation was clearly to be accomplished by the application of cold water externally, where there exists such an unlimited supply as at sea, instead of the same requiring a jet internally in the condenser. I could no more entertain a doubt about it, than that I could cool a bottle of wine by putting it into ice or cold water, instead of drawing the cork and putting some into the wine. If the reviewer had inquired, I believe he would have found that this method of condensation is to be applied in " the Atlantic steam-ships : " and thus all the search for extras, about burning boilers, deposit, &c., &c., might have been spared. Numerous ships have been for some time in the constant use of these condensers, with, I believe, the most perfect success.

The next difficulty stated, is, " that smoke deposits soot, and other sublimated matter." As to " other sublimated matter," I am not sufficiently informed to know to what it particularly refers, nor the probable quantity ; but, if it be not of a combustible nature, it must undoubtedly be calculated upon as remaining in the flues until the completion of " an Atlantic passage ; " as I will admit, that having the means of sweeping the chimney and flues, must not be calculated upon, though at times, with a fresh, fair wind, it might perhaps be accomplished. I do not, however, apprehend the least difficulty to ensue therefrom : if the flues be properly constructed, everything combustible therein will take fire, and the soot will be burnt out as quickly as it forms ; and " the other sublimated matter," not combustible, will not, I believe, accumulate to that extent in the passage to form a serious " non-conductor of heat," nor to choke up the passage

We come next to the very important question of the consumption of fuel—no doubt, the most serious difficulty; and the extent to which it can be diminished, is in reality the only limit to steam navigation. To go into this question, it is necessary, first of all, to settle something as to the time that will be required to complete the voyage, and to assign its probable duration. I shall at once adopt the performance of the "Peninsular Steam Navigation Company's Ships," instead of looking at the duty of the moving power, preferring practice and experience in sea affairs, when we have them, to all the deductions of philosophers.

I shall take the length of the passage to New York, at 3,000 miles. Steamers from London, I suppose, would take their departure from Falmouth or Cork, and the latter would no doubt be chosen to fill up the coals of the Liverpool ships; therefore, if 150 miles per day has been the performance of steamers across the Bay of Biscay* in the very worst of weather, it follows that the trip to New York would be made in twenty days, in the very worst view of it. I think all the arguments of the reviewer, when estimating the difficulties of the passage out, in alluding to "trade-winds," "atmospheric difficulties," "effects of gulf stream," &c., &c., quite extraneous, and only introduced as a show of learning in these matters. Every body, who knows any thing about the subject, is quite aware of all this; and that there are unquestionable difficulties in getting to America at all seasons; and I will at once grant, on this score, all the objections he likes to accumulate; but I protest against their amounting to more, except in duration, than what are often met with during a winter-passage out of the channel to the southward. The large steam ships building for this service, are to have engines of 460 horse power; so it is stated. I will take the consumption of these engines at once to be, what the reviewer's own views are, at eight pound per horse-power per hour; without taking any advantage of his own statements, that the comparative consumption diminishes the larger the engine; neither calculating upon decreased consumption from the use of Mr. Hall's condensers,† which will obviate the necessity of "blowing off;" but which, of itself, *must* create a decrease of expenditure of coal. Sails, I will also put out of the question, as believing them to be of very little use. Can there be any reason why a steamer, to measure about 1,800 tons, should not carry easily 800 tons of coal? I believe, not only that she will do this without any inconvenience whatever, but that, if properly constructed, she will be able to expend the whole, without being materially put out of trim; and that there will be no occasion to replace any part of the weight by salt water; and that, by reefing the paddle-boards a trifle on starting, there will be no material alteration in her trim, to interfere with their proper dip.‡

* By the logs of the *Atalanta* and *Berenice*, which will be found in pages 448 and 499 of this volume, it will be seen that the former has averaged 185, and the latter 213 miles per day on the voyage from Falmouth to Teneriffe.—Ed. N.M.

† We have already noticed in various parts of our work the beneficial result of Mr. Hall's mode of condensing, and his use of fresh water. Those who desire further information on the subject, we must refer to his own pamphlet, in which it is fully described, and accompanied by ample testimonials of its value.—Ed. N.M.

‡ I must observe, however, respecting the engine, that I have not heard whether

But what I consider the strangest view of the whole case which the reviewer has taken, is, that sailing vessels will beat the steamers on the return voyage from America! The American "liner" is undoubtedly a fine ship,—an ornament to the United States, and a pattern to all others; and it is just possible to suppose, that she may start with a steamer, and beat her home,—it is barely possible. These ships will doubtless run before a gale eleven or twelve knots. No steamer of the present day will do this. Their triumph is in smooth water, where many will certainly go even faster; but I believe none whatever will run before a heavy sea so fast as I have presumed the American "liners" may go. I question whether a steamer will go, under such circumstances, even aided by sail, more than from nine to ten knots; but how often will a sailing vessel go a whole passage at that rate? The steamer would beat all sailing vessels whatever, on the return-voyage from America, hollow, ninety-nine times out of a hundred. So much for the opinions of the *Edinburgh Quarterly Review* on steam navigation, founded on false data, and therefore leading to false conclusions, as experience shows. Nevertheless, these remarks are made in the best spirit, and perhaps they may aid the progress of such laudable attempts as are now going on for extending the use of a power in sea operations, the consequences of which will certainly be fraught with such important results, as no one can see the extent of. But they are made specially with a view to induce more attention to the enormous national advantages which this country would unquestionably reap, by at once setting about placing our naval superiority less at hazard, in the event of hostilities, by the immediate adoption of steamers as "the very first arm of war;" for be assured, Mr. Editor, that in such event, that power which brings into operation the greatest number of powerfully-armed steamers, will secure to itself the naval superiority of the day: and, as a hint, to set our naval authorities "thinking," I will merely observe, that the French government is certainly aware of this, and is quietly taking measures not to be behind hand.

I will, in conclusion, just refer to the late destruction of the Humber steamer, and the dreadful loss of lives which occurred, as I believe, through mere carelessness, and the most culpable want of ordinary caution.

It is much to be regretted that some proper explanation of this affair has not been given by those whose interest (and duty, I think) should have led them to do so, viz., the engineers employed in constructing steam-engines. In the absence of which, I will merely state my own views, as to what caused the bursting of the boilers on the occasion in question, by way of producing discussion on a subject which is highly interesting to the public. Indeed, it appears to me absolutely necessary that the real cause of this sad event should be clearly understood, before steam navigation can be proceeded in with any confidence.

It seems then to me, that if the fires are lighted under the boilers, supposing there to be at first a proper supply of water in them, and

they are to work expansively. but I suppose they will be adapted to this mode of saving fuel.

leaving the effect of the heat to take its course, without attending to its reducing the water—that even supposing the safety-valves to be in good order, the consequences *may be*, and perhaps must be, that *there is a point to which the water will be reduced*, at which, from the enormous accumulation of heat within the boiler, this becoming red hot on a considerable part of its surface, it will be converted into steam so rapidly, that in despite of the escape afforded by the safety-valve, it may so *instantaneously* become steam, that the means of escape are not sufficient to prevent such a quantity being formed almost at an instant, as to cause its compression into steam of such power, as to be stronger than gunpowder; in which case, explosion must ensue of course, and long before, especially if the boiler is softened, and of course weakened, by becoming hot.

This question is a good deal mystified, and rendered unintelligible, it appears to me, by attempts to account for this explosion, by imagining gas of a certain nature to be formed—it may be called gas, or what they like. But in the absence of knowledge about the quality of this gas, I cannot see why we need go out of the way, or go further, than to call it “highly compressed steam;” and to look for the cause in what would appear to be the certain consequence of allowing water to be gradually expanded, and to suppose a point arrived at, which, by the accumulation of heat to an enormous extent, would convert the remaining water into vapour instantaneously. This vapour, from its powerful expansion, the vessel could not contain, nor resist the pressure and consequent power of arising from want of room in the boiler. To elucidate this view of the question, let us suppose a very powerful force pump attached to a boiler, (rendered red hot without any water in it,) which, with a few strokes given with great speed, ten cubical feet of water could be forced into the boiler almost instantaneously, and that the whole space of the boiler is 1,700 ft. It is clear that the water thus forced into a red-hot receiver, would be immediately converted into steam, and that this steam would become compressed into something like ten atmospheres, or about 150lbs. on the square inch; (in round numbers;) would not this operation blow up the boiler like the discharge of a cannon? for supposing the injection of the ten feet of water to be almost instantaneous, no safety valve could provide for its escape with sufficient rapidity to save the boilers.

That water can be instantaneously converted into steam, is shown by Mr. Howard's very ingenious trials for producing steam, by jetting water upon a plate of iron, which, by means of quicksilver, retains a heat of about 400 degrees. A boiler of iron may probably attain a considerable approximation to this heat, and yet be so far from the melting point, as to retain just so much strength as to require steam of a force to burst it, of considerable power; and which, if instantaneously applied, would of course effect the end with great violence. If this be not the cause of the bursting of boilers, let scientific men say what is, and I shall be content; but unless this is done, I can tell those most interested, that the public will not be so. The view just taken of what may be the cause of such serious mischief, is submitted with great deference and respect towards those who should be able to elucidate the matter better; and at all events, this notice may have the effect of drawing the attention of such parties to the subject.

Something *must* be done to allay the well-grounded apprehensions of the public; and should either my notions be correct, or any other, the true and only cause must be properly understood, which can create such serious drawback to steam navigation, as the late event undoubtedly will do, whilst we remain in ignorance of its cause. No doubt can be entertained that, the matter thoroughly comprehended and explained, the remedy will be as simple as it clearly is, should my notions be correct, which is neither more nor less than to keep the boiler supplied with water.

I am, Mr. Editor,
Your obedient servant,
"MERCATOR."

HURRICANE OF THE MAURITIUS, IN MARCH, 1836.

To the Editor of the Nautical Magazine.

MR. EDITOR.—Without an accompanying explanation in the style of a narrative, it would be difficult, if practicable, to make anything out of the tabular view that is given of the Mauritius hurricane in the June number of the *Nautical*, (p. 370.) Indeed, I do not know whether I clearly comprehend the meaning intended to be conveyed, with reference to the action of the wind, as given in the last column opposite to the hours in the first column.

Are we to consider the wind as veering and then backing, or as shifting suddenly? For instance, on the 6th, at 8½ hours, the wind is noted as varying from E. by N. to W.S.W., (query, by the north or by the south?) and in half an hour after, that is, at nine hours, it is noted as varying from E.N.E. by the north, to S.S.W. by the south. This is rather perplexing:—did the wind shift suddenly between 8½ hours and nine hours from W.S.W. to E.N.E.,—or did it back gradually? And, if the wind veered from E.N.E. by the way of the N., and so round to S.S.W., it is clear that it could not, as stated, have arrived at the latter point by the *south*, unless it backed all round again by the north and east. Probably "*West*" should read for "*South*." What is meant by a "complete variation?" Is it that the wind veered round the compass? If so, the wind must have been blowing *towards* a centre; as, to me, it seems that in a progressive hurricane, with the wind gyrating *round* a centre, it could not be felt at a stationary spot successively from point to point round the compass; and if it (the meteor itself) were non-progressive, the wind would be steady from one point.

From twelve to four on the 5th, the wind is stated as blowing strong from S. by W. to E.N.E. by north. If it were pursuing a rotatory motion from right to left, in this case, the progression of the storm must have been to the S.E., to have produced the changes given, on a stationary spot: but at four, the wind is at S.E. and E.S.E. by S., to S.S.W. by S.; so that to have brought the wind from E.N.E. to S.E., the hurricane must have altered its course to the westward, or *vibrated*, and again pursued a S.E. course to have brought the wind to E.S.E.

What is meant by E.S.E. by S., and S.S.W. by S.? Are we to consider the wind as veering from E.S.E. by the *south point* to the S.S.W.? Or, which is more likely, is it a "long-shore" way of expression, and should be interpreted as meaning simply, first, S.E. by E., secondly, S. by W.?

If the rotatory process took place there must have been a pretty constant vibration of the meteor, and some potent attraction to have detained it so long over comparatively so small a spot of land. It is probable, that until a detailed account be given of these particular storms, any attempt to analyze them would fail.

If I understand the notes in the last column, a singular feature presents itself in this hurricane:—during the 6th, the wind, after commencing every half hour from the northward and eastward, and veering to the southward and westward, is noted as again coming back to the former quarter. A material point is omitted: in what manner did this action of the wind take place? Was it a sudden shift from S.S.W. back to E.N.E., or, were the changes gradual from point to point, a regular oscillation?

A narrative of facts, as these occurred, is absolutely necessary to the understanding clearly the table: by placing the name of the successive changes in regular order with the times of occurrence, we should have a connected view without break, and be enabled to consider the mode of operations of the wind, which at present I am unable to do.

For example, if we were to read that, on the 5th of March, at midnight, the wind was at E.N.E., and veered, one, A.M., on 6th, to N.E. by E., at 1h. 30m. veered to N.E., at 2h., N.E. by N., and so on round to E.N.E., by the north, the west, the south, and the east, we should know distinctly from the wording, that the wind had made a complete revolution round the compass. If, on the contrary, the wind shifted suddenly and irregularly, the shifts, when observed, should be named, and placed immediately after the periods of time of occurrence. No doubt, extreme accuracy cannot be expected on occasions of such excitement and alarm, but if what we may happen to observe be noted with care, such would be of value.

In these matters the word "*noon*" is preferable to the figures 12h.; and "*midnight*," when so written, should be considered as ending the preceding twenty-four hours.

As far as I can judge from the tabular view, this hurricane appears to have been dissimilar to those of the West Indies, or the Tyloongs of the China Sea. It appears to have been a local disruption, probably occasioned by the opposition of various veins of air in motion in the upper regions of the lower atmosphere.

STORMY JACK.

[We were aware of these unsatisfactory features in the printed account, the copy of which is here referred to, and perhaps the talented surveyor at the Mauritius, should he have his notes by him, will attend to the request of our correspondent; or if not, we are quite sure that his zeal in promoting the objects of science will remind him of it.—ED. N.M.]

SUGGESTIONS FOR PREPARING COCOA ON BOARD HER MAJESTY'S SHIPS.

WITHIN the tropics, the duty of preparing the daily supply of cocoa-nuts for the breakfast of a ship's company, becomes, from the heat of the weather, and the modes of operation, however necessary, extremely irksome. It has generally been the custom to appoint the members of the different messes among the seamen, in rotation, to this daily office, the operation of which requires the exertion of muscular force in order to reduce the nuts to the consistency of paste. The mode usually adopted is, to place the nuts in a large wooden mortar, and to pound them with an iron pestle, which is lashed to an oar secured to a beam or carline by the blade, and which, from the spring or flexibility of the wood (ash) greatly facilitates the operation. But still some other mode, by which the manual labour would be saved, is a desideratum in naval economy.

On recalling to mind the invention of Captain de Langle for grinding wheat into flour, during Peyrouse's voyage of discovery, they naturally suggest, that by some such means, or by a wheel fixed outside of the ship, and connected with a grinding-mill in-board, the nuts might be broken, if not mashed into paste, sufficiently small, so that a very little additional hand-labour would prepare them for the coppers.

The time required to perform this work by hand alone, and the quantity of hard unmashed portions of the nuts always found in the liquid after it has undergone the process of boiling, are obvious reasons for a more complete mode being desirable in their preparation. Besides, the saving that would be insured, is a matter of consideration. Throughout the fleets, during a war, the total amount lost by the present clumsy mode of operation is considerable; probably about one-third of the whole consumed.

In a frigate in Her Majesty's service, there was adopted, for "*past-ing*" the cocoa, a small barrel strongly bound with iron, turned by a handle, and having four or five nine-pound shots introduced into it; but this, although not causing so much labour as the working of the mortar, was still irksome, noisy, and inefficient.

It is a point, indeed, well worthy attention, whether a considerable saving might not be made, if the cocoa were prepared at the biscuit establishment at Portsmouth on a large scale, and preserved in boxes, (of tin or other metal,) containing fifty or one hundred pounds each. It would probably keep as long mashed into paste, especially if sugar were added, which is antiseptic, as in the nut.

At all events, the suggestion is thrown out in the hope that some mechanical genius will take it up, and invent a mode by which the object can be gained without manual labour, and for which doubtless the inventor would have the gratitude of those whom it is the province of every true Briton to benefit to the extent of his ability,—the "Tars of Old England," and most particularly of

ONE WHO PREFERS GOOD COCOA TO BURGEOO.

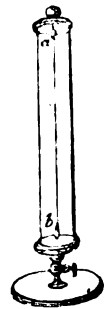
[A small portable steam-engine would answer the purpose, if it could be kept in repair: the grocers use such for grinding coffee, and perhaps cocoa likewise. Indeed, one of sufficient power might be employed to heave up the anchor! sway up the top-masts, lower yards, &c.,—and in fact do all, or a great deal at least, of the heavy work! All this would be lightening Jack's labour with a vengeance; and if the remission did not endanger his health, it would be well, for there would be enough lighter work for him left.]

ON THE PROTECTION OF SHIPS FROM LIGHTNING. *By William Snow Harris, F.R.S., &c. &c.*

43. WE may therefore consider the conducting power of a lightning rod, to arise, not out of any attractive property peculiar to it, but from an action purely passive; that is to say, the removal of resistance; indeed, in the case of a vacuum, or a very finely-exhausted receiver, which transmits electricity freely,* and which is found to operate as a conducting body,† we must necessarily admit the truth of this principle; the conducting power here evinced must arise solely from the removal of a resisting medium; since we cannot suppose the absence of all substance to possess any positive quality whatever. Now, the circumstances attending the conducting power being precisely the same, whether we suppose it to be peculiar to a void, or to a positive substance; it is a legitimate deduction, not contradicted by any known fact, that, in either case, the conducting power is a negative quality. In further confirmation of this opinion, we find that an artificial discharge of electricity will rather pass through a small interval of air, than through an extensive length of metal;‡ that is to say, when the resistance in the direction of the metal is *greater than that offered by the air*, the electric matter no longer passes in the direction of the metal, it being no longer the *line* of least resistance.

The following experiment, which is new of its kind, is very illustrative of this important point.

Exp. 3. Let an extremely fine iron wire, *a b*, be fixed at the points *a b*, in a very finely-exhausted receiver; and let a powerful battery be discharged from *a* to *b*. The electric fluid will be observed to pass in a brilliant spark on the surface of the metal, without fusing it. The resistance offered by the surrounding space to the superabundant electricity being less than that offered by the wire at its point of fusion. I have known an extremely fine wire, treated in this way, remain perfect under a charge, of fifteen or twenty square feet of coated glass, whilst in air it became fused by a charge from five square feet.



* Transactions of the Royal Society for 1832. p. 71.

† See the following experiment. 3.

‡ Singer's Electricity. p. 142.

44. The utmost, therefore, which can be urged in the shape of objection, on this ground, to the use of lightning rods, is the circumstance of their constituting an easy line of discharge, so that the electric matter may be conceived to fall on a ship, in consequence of such a line being present, when, otherwise, it would remain without any explosion happening; but this, as already shown (37) is not the fact, or in any way consistent with experience; for, although it is admitted that continuous conductors greatly facilitate discharges of electricity, when such happen to fall on them, yet it by no means follows that, without such conductors, the electric action would remain, as it were, quiescent; the intense forces in operation in a thunder-storm are seldom, perhaps never, so nicely balanced as to be overset by the presence of a metallic line applied in a particular place. The thunder-storm which occurred at Plymouth, on the 21st of May, 1831, is in point here:—during the storm, H. M. ship *Caledonia*, with fixed lines of metal in her masts and bowsprit, terminating in points, was under sail in Plymouth sound: the lightning was observed to strike, in vivid sparks, immediately on the surface of the sea, and not a very great distance from the ship; it struck at the same time upon the distant hills, and did some damage there. In all these cases, therefore, we should remember, that the forces in operation are distributed upon a vast extent of surface, and that the point or points in which the lightning strikes, is rather dependant on some peculiar condition of the intervening air, or on the amount of force exerted in such point or points, than on the presence of metallic bodies, projecting, for a comparatively short distance, into the atmosphere. “I do not object,” says Lord Stanhope, “for shortness’ sake, to the word attraction, or the point attracting the electric fluid; though I should myself rather wish to employ a less ambiguous term; therefore, what I state relative to there being no real attraction in metallic points, must be understood to refer to the systems of those who most *inconsiderately* assert, that, prominent points of metal placed on the earth’s surface do really invite and attract the matter of lightning from the clouds, and who, in consequence of this *false* and *absurd* notion, very unphilosophically conclude, that elevated conductors are dangerous to the buildings on which they are placed.”*

45. With respect to the actual quantity of electricity which may possibly be discharged in a thunder-storm, and the effect likely to be produced on lightning-rods; that must be determined altogether by experience. It is by no means contended, that lightning-conductors operate as a *charm* or *nostrum*; but that they constitute a useful method of defence against such cases of damage as have come within our knowledge, and certainly not against convulsions of nature, when it would be of no great consequence whether we had lightning-rods or not. It is, therefore, against such cases of damage, as may be reasonably expected to occur, that we propose to employ lightning-rods, and not against such as exist only in imagination. Now we have an induc-

* The authority of the late Professor Leslie has been quoted by some writers against lightning-conductors, but that philosopher had too high a conception of natural causes, to reason in the way attributed to him; indeed, he expressly states, in alluding to lightning rods, “that they *provoke* the shaft of heaven, is the suggestion of *superstition*, rather than of *science*.”

tion from the facts of nearly a century, to guide us in this: (e.g.) we do not find in any well-authenticated case of damage by lightning at sea, that a quantity of metal has been melted, equal to that contained in a copper bolt of half an inch in diameter, and six inches long; or otherwise, an equivalent quantity of any other metal, more readily fusible by electricity;* on the contrary, we find, that very heavy discharges have been safely transmitted without fusion, by very small masses of metal; amongst many instances we may cite the following:—

(β) The lightning which fell on the house of Mr. West, at Philadelphia, was received on a pointed brass rod, ten inches long, and a quarter of an inch in diameter—*only three inches* of the point underwent fusion—the house was effectually protected.†

(γ) The spike of the conductor on the mast of the packet-ship, New York, above-mentioned (22) (u), and which received a fearful stroke of lightning, consisted of an iron rod four feet in length, and half an inch in diameter, a few inches only of it were melted near its point.

(δ) In the case given of the Etna (22) (s) the conductor escaped fusion altogether.

(ε) In the transactions of the Royal Society for 1770, there is an instance recorded, in which a bell-wire conveyed a charge without fusion, which shattered a chimney; and in the same valuable work for 1772, we have an instance in which a bell-wire resisted fusion in its twisted portions.

(ζ) A house was struck at Tenterden, the electric matter fell on an iron bar three-fourths of an inch square, but produced no effect on it.‡

(η) Mr. Calandrini witnessed a flash of lightning which struck a bell-wire, and was safely transmitted by it without fusion.§

* It has been said, that the iron conductors of St. Paul's Cathedral, in London, have been, in certain parts, made red-hot by lightning; but it seems, on examination, of the evidence, that this conclusion is very imperfect. The conductors were not examined before the lightning, which was said to have fallen on them, occurred, so that we cannot be certain that the observed appearances, were not originally present after the forging of them: it is beside, very unlikely that a stroke of lightning should have fallen on this building, capable of rendering bars of iron, six inches wide, and an inch and a half thick, red hot, without destroying the thin copper covering the ball and cross, on the dome of the building, and without the crash of the thunder having been heard over the whole city; no mention of which is made. When St. Bride's steeple was struck, the latter was peculiarly remarkable. The original ball and cross on which the lightning is said to have fallen, may be seen at the Colosseum, London.

If, however, we admit the evidence, it is highly conclusive, as to the value of the lightning-conductors: since the former church, not defended by a lightning-conductor, was twice struck, and damaged. There is another instance on record, of the effects of lightning on an iron rod, in Port Royal, Jamaica, mentioned in the Transactions of the Royal Society, the evidence of which seems very incomplete. Two men are said to have perished by lightning near a church-wall; that is not improbable; but, on subsequently looking inside the wall, a bar of iron, an inch thick, and a foot in length, was found in many places wasted away to the size of a fine wire; now, it does not appear that this bar was examined previously to the occurrence of the lightning; hence, we cannot infer that the wasting was produced by the electric fluid; more especially as similar appearances are not uncommon in bars of iron erected in churchyards in this country, and which have evidently resulted from oxidation and time.

† Transactions of the Royal Society, Vol. LIII. Part i. p. 96.

‡ Transactions of the Royal Society.

§ *Ibid.*

In the great experiment of Mons. de Romas, the electric fluid of a thunder-cloud was effectually discharged over a small wire wove in the string of a kite. At the extremity of the string, the electric fire "assumed the shape of a spindle eight inches in length, and five inches in diameter:" another time "streams of fire, which appeared to be an inch thick, and ten feet in length," darted with a crashing noise, similar to thunder when near, into the ground.*

(*θ*) Andrew Crosse, Esq., of Broomfields, near Taunton, a gentleman of high scientific attainments, has erected a very extensive conductor of atmospheric electricity, from which similar effects have been witnessed. During the passage of a thunder-cloud, a full dense stream of electricity passes to the receiving ball which, at each flash of lightning becomes changed to an explosive stream. It has been well observed by the late Mr. Singer, in his *Elements of Electricity*, "that during this display of electric power, so fearful to a common observer, the electrician sits quietly in front of the apparatus, conducts the lightning in any required direction, and employs it to fuse wires, decompose fluids, and fire inflammable substances; and when the effects become too powerful to attend to such experiments, he then connects the insulated wire with the ground, and transmits the accumulated electricity in silence and safety."

(*ι*) Charles church, at Plymouth, was struck by a heavy discharge of lightning about the close of the year 1824; the whole charge passed down over a small brass wire of about one-fourth of an inch in diameter, without fusion, or damage, to the church; the lightning, however, completely disjointed the conductor, and tore up the ground at its termination.

46. We may, from these and numerous other instances, fairly infer, that a copper rod, of half an inch in diameter, or even an iron rod of the same dimensions, would be equivalent to the transmission of any flash of lightning which has hitherto come within the range of human experience.

47. The amount of what has been just advanced concerning the operation of lightning-rods is this:—metallic substances remove, by the aptness of their parts, that resistance to the passage of the electric matter, which it meets with in bad conducting bodies, such as air;—that their action is purely passive;—that they can, therefore, no more be said to draw down upon themselves the matter of lightning, than a water-course can be said to attract the water which flows through it; that such passive action cannot be fairly urged as an argument against lightning-rods, which operate only in conveying away the electric fluid when it falls on them: that we must consequently distinguish between lightning attractors, as commonly understood, and protectors from lightning:—that inasmuch as all the materials of which a ship is constructed, are calculated to transmit electricity, and that detached metallic bodies are necessarily found amongst them, and that too in a prominent way, such as studding-sail boom-irons, vane-spindles, and the like, we have such passive attractors already present; that, if we were even to remove them, the substances to which they are attached would be equally open to electrical action (37) (v); that, finally, the

* Priestley's History of Electricity.

continuous protector is applied to prevent the damage which invariably occurs when the electric fluid finds its own way through the ship by main force (24) ; and that, as we have no means of avoiding, or of resisting the action of lightning, it must be considered as extremely fortunate that we are enabled to direct it.

47. Some further appeal to experience will show satisfactorily the operation of lightning-rods as a successful means of defence in thunder-storms. The cases (t) (u) (22) of the packet-ship *New York* are striking illustrations ; indeed, if a great natural experiment could have been instituted for the purpose of determining the utility of lightning-conductors on ship-board, such should have been the conditions under which the experiment should have been placed.

The cases of the *Ætna* and *Madagascar* (y) (22) are likewise important instances, as also those of his Majesty's ships *Norge* and *Warrior* (x) (37) ; to which may be added the case of the *Milford* (w) (22). In Mr. Kinnersley's account of the lightning which fell on Mr. West's house,* the conductor evidently performed its office.

Charles church and steeple, struck by lightning a few years since, at Plymouth, remained without damage, although the conductor, being small, was quite disjointed. It is worthy of remark, that, of six church-towers in Devonshire, all struck by lightning within a few years, the tower at Plymouth *alone* escaped damage ; it was likewise the *only one defended by a conductor*. In the fifty-second volume of the Royal Society's Transactions, there is recorded an instance of a ship called the *Generous Friends*, twice preserved by a lightning conductor.

The celebrated Frenchman, Le Roy, in a memoir presented to the Royal Academy of Sciences at Paris, in the year 1790, mentions the circumstance of two French frigates being successfully defended from lightning by chain-conductors of his own construction, led along the masts, which, he says, completely disarmed the fury of the vivid flashes by which they were assailed, and transmitted the electric fluid into the sea.

Captain Winn observed, that his chain-conductor was broken for a short distance above the ship's side, leaving an interval of nearly an inch between the fractured ends : the electric matter was observed to pass in the form of sparks over this space, during two hours and a half, at the time of a thunder-storm.

48. It may be finally remarked, that lightning-rods have, for upwards of eighty years, been applied to powder-magazines, without ill consequences, as also to buildings, and likewise to ships : and, from the whole course of experience, it is found that destructive discharges of electricity have almost always occurred *where they have not been present* ; that, where *they have been present*, and effectively applied, little or no damage has been ever sustained ; but, on the contrary, evidence of the most complete kind exists of their positive utility.

* Philosophical Transactions, vol. liii.

(To be continued.)

A FEW WORDS ON ASTRONOMY.

AMONG those natural sciences which have called forth the highest powers of the mind, astronomy claims for herself the most exalted place. The bodies of which it treats are of themselves calculated to prepossess us in its favour. Their vast and inconceivable magnitude—their distance, almost infinite—their uncountable number, and the rapidity and regularity of their movements, excite, even in ordinary men, the most intense curiosity, and to minds of higher birth hold out the noblest exercise for their powers. But while our judgment thus anticipates its pleasures and its triumphs, the imagination discovers among the starry spheres a boundless field for its creative energies. Drawing its materials from our own globe—from its variety of life and beauty, and from the condition and destiny of our species—it perceives in every planetary body a world like our own, teeming with new forms of life, and new orders of intelligence, and regards it as the theatre of events, whose origin, whose duration, and whose final cause, must for ever be involved in impenetrable darkness. Advancing beyond our own system, it recognizes in every twinkling star the central flame of new groups of planets, and pursuing its track only in one out of an infinite number of directions, it descries system beyond system, following each other in endless succession, till it returns exhausted in its strength, and bewildered amid the number, the extent, and the magnificence of its creations.

But while astronomy thus affords to our intellectual nature a field commensurate with its highest efforts, it is fraught with no less advantage to our moral being. The other sciences may, indeed, lay claim to a similar influence, for nowhere is the hand of skill unseen, or the arrangement of benevolence unfelt; but the objects which they present to us are still those of our own sublunary world. They are often too familiar to excite admiration—too much under our power to command respect—too deeply impressed with our own mortality to enforce the lesson which they are so well fitted to suggest. The plains which we desolate, the institutions which we overturn, and the living beings which we trample upon or destroy, are not likely to be the instruments of our moral regeneration. Among scenes, indeed, where man is the tyrant, who can expect him to be the moralist or the philosopher?

How different is it with the bodies which the astronomer contemplates! For man they were not made, and to them his utmost power cannot reach. The world which he inhabits forms but the fraction of an unit in the vast scale upon which they are moulded. It disappears even in the range of distance at which they are placed; and when seen from some of the nearest planets, it is but a dull speck in the firmament. Under this conviction the astronomer must feel his own comparative insignificance; and amidst the sublimity and grandeur of the material universe, the proudest spirit must be abased, and fitted for the reception of those nobler truths which can be impressed only on a humbled and a softened heart. He, indeed, who has rightly interpreted the hand-writing of God in the heavens must be well prepared to appreciate it in the record of his revealed will.

Though the study of astronomy thus possesses peculiar claims upon our attention, the history of the science—of the steps by which it successively attained its present state of perfection, is, in another point of view, of nearly equal interest. Commencing in the earliest ages, and carried on with but little interruption to our own day, it forms the most continuous history of the progress of human reason; it exhibits to us the finest picture of the mind struggling against its own prejudices and errors, and finally surmounting the physical and moral barrier which appeared to have set a limit to its efforts; and it displays to us in the most instructive form, the labours and the triumphs of men, who, by the universal suffrage of ages, have been regarded as the ornaments of their species, and as the lights of the civilized world.

In order to introduce the reader to the interesting subject of the present article, it is necessary to take a rapid survey of the different *periods* of astronomical discovery.

1. The *first* period includes the history of the science till the time of Copernicus, when the relative positions, and the general movements of the bodies which compose the planetary system, were clearly determined.

2. The *second* period embraces the labours of Kepler and Newton, by which the various motions of the planets and comets were reduced to one simple law, viz., the mutual tendency of all bodies to one another with a force directly proportional to their quantity of matter, and inversely proportional to the squares of their distances.

3. The *third* period comprehends the labours of Clairaut, Euler, d'Alembert, Lagrange, and Laplace, and terminates with the publication of the *Mécanique Céleste*, a work in which the philosophy of Newton is extended to all the nicer questions which relate to the mutual action of the planetary bodies.

1. The study of the heavens was undoubtedly co-eval with the existence of man, urged by the double impulse of his necessities and fears. In the genial climate, and beneath the serene sky of the east, it seems to have made considerable progress. The great convulsion in the physical world, of which the sacred writings have traced the outline, swept away along with the races of men, all the records of their intellectual attainments; but some wrecks of their astronomical knowledge seem to have been preserved, either by the durability of the monuments on which it had been engraved, or by the memories of those whom the desolating waters had spared. These precious relics, which time still respects, inspired the Chaldean, Indian, and Egyptian philosophers with a reverence for astronomy, and formed the epochs of the science which they restored. From Egypt it speedily passed into Greece, under the form of mysteries too sacred for the ear of the vulgar, and of allegorical emblems too profound for their understanding. Here it was soon stripped of the mystical drapery in which superstition had swathed it, and the genius of that refined people presented it, purified and improved, in all their schools of philosophy. In the tenets of Thales, Pythagoras, and their successors, we trace some of the soundest doctrines of modern astronomy, which form a singular contrast with the reveries of solid orbits, and the harmony of the celestial spheres.

Astronomy was now destined to receive in the land of its birth, all the advantages of royal patronage, and that science, which Rome despised, and which Athens persecuted, found shelter among the sovereigns of Alexandria. The establishment of the Alexandrian school and the protection and cultivation of the sciences by men who had lived in war, is the most glowing passage in the history of the human mind. It is the romance, indeed, of astronomy which princes should peruse, and which statesmen should engrave upon their hearts. The formation of the library of Alexandria; the erection of its observatory; the invitation to his court of the philosophers of every clime; his participation in their conversation and in their labours, and the accessions which astronomy thence derived, have immortalized the name of Ptolemy Philadelphus, while they reflected over the darkness of future times a more intense light than was ever thrown by her blazing Pharos upon the shelves of her rugged shores.

Aristarchus, one of the earliest astronomers of this great school, determined that the distance of the sun was at least twenty times greater than that of the moon, and, convinced that the earth moved round the sun, he inferred from the position of the stars, when the earth was in the opposite points of its orbit, that their distance was immeasurably greater than that of the sun. These important steps in the science were pursued by Eratosthenes, whom Ptolemy Euergetes invited to his capital. With instruments erected by his patron, he found that the diameter of the sun was at least twenty-seven times greater than that of the earth; and by comparing the distance of Alexandria and Syene with the celestial arc between the zeniths of these two cities, he concluded that the circumference of the earth was twenty five thousand stadia; a result not excessively different from the measurement of modern times. Important as these determinations were to astronomy, yet it was from his successor, Hipparchus, that the science derived the most valuable improvements. Collecting and comparing the observations of his predecessors, he resolved to repeat and to extend them. He ascertained the length of the tropical year; he discovered the equation of time; he fixed the lunar motions with great accuracy, and he determined the eccentricity and the inclination of the moon's orbit. His grand work, however, is his catalogue of the longitudes and latitudes of one thousand and twenty-two fixed stars; by means of which he discovered the precession of the equinoctial points. In carrying on these inquiries, he was led to the principles and rules of spherical trigonometry, one of the most valuable branches of geometry. The leading works of this eminent astronomer perished in the flames which destroyed the Alexandrian library, but the most important of his observations have been fortunately preserved in the writings of his successors.

The great advances which were thus made in the science were succeeded by a long interval of darkness, across which a few gleams of light were occasionally thrown. The Alexandrian school, however, still existed; and the consecrated name of Ptolemy, so indelibly associated with its origin, was destined in its latter days to renew its glory; about one hundred and thirty years before the Christian era, Ptolemy devoted himself to the science of the heavens. He discovered the

second inequality in the moon's motions; he determined with new accuracy the relative positions of the planets, and their distances from the earth; but rejecting, on the evidence of his senses, the system of Pythagoras, he made the earth the centre of the universe, round which the sun and the whole starry heavens performed their revolutions. This fundamental error led him to explain the stations and retrogradations of the planets, and the other celestial motions, by the cumbrous machinery of epicycles which so long deformed the science and retarded its advancement. The subject of astronomical refractions received also from Ptolemy a satisfactory explanation; but though he rendered such signal services to astronomy, as well as to the sciences of optics, dialling, and music, yet his name will for ever be connected with a false system of the universe; and his assiduity as an observer will always be placed in disagreeable contrast with that defect of sagacity which had thus marked his astronomical speculations.

With the life of Ptolemy terminated the labours of the Alexandrian school. Centuries rolled on amid intellectual darkness: ambition pursued her bloody course, and superstition continued to offer her unholy sacrifice; but no gifted spirit arose to vindicate the science of the heavens from its degraded state. Even the accumulated knowledge of former times perished in the conflagration of the Alexandrian library; and though the tears of the victorious caliph flowed in repentance, yet they were a poor compensation for the havoc of his army.

But though the Arabs had thus wantonly violated the sanctuary of science, their own land was ordained to be the scene of its triumphs. Astronomy was again received into the palaces of kings, and Almanson, Al Raschid, and Almamon, were its cultivators as well as its ardent patrons. The rays of science gilded the minarets of Bagdad, when they had ceased to shine on benighted Europe. The almagest of Ptolemy was recovered from the Greek emperor by force of arms; and several works were composed, and observations made, which powerfully contributed to the progress of astronomy. Even in Persia and Tartary associations of astronomers were formed by the command of their princes; magnificent instruments were erected at the royal expense; and catalogues of the fixed stars, and astronomical tables of singular accuracy, proceeded from the pen of the grandson of Tamerlane the Great. From the east, astronomy passed with the arms of the Arabs into Spain, where it received valuable additions from the genius of Alhazen and Alphonso X. The Alphonsine tables, indeed, which appeared in 1252, are to this day a monument of the knowledge and the liberality of the Castilian king.

We now approach the era of reviving science. Many astronomers of inferior note paved the way, by valuable though insulated observations, for the great restorer of astronomy. Copernicus, who was born in 1473, was not the author of any remarkable discovery; but by a diligent comparison of the discoveries of his predecessors, by sagacious views of the simplicity of nature, and by a just perception of the relations which ought to exist among the various bodies of the system, he was led to place the sun in the centre of the universe, and to account for the daily revolution of the celestial sphere by the motion of the

earth upon its axis. This slight change upon the Ptolemaic system banished the epicycles and eccentrics of his predecessors, and every phenomenon in the general motions of the heavens received an immediate explanation. The publication, therefore, of the *Astronomia Instaurata* in 1530, forms a principal epoch in the history of astronomy. The true solar system was now established, and the various planets which the unassisted eye could discover in the heavens, were placed in their proper spheres, and nearly at their proper distances from the central luminary; while the fixed stars, separated from our planetary universe, were thrown back into the depths of space, to become in their turn the objects of a more refined philosophy.

2. Hitherto astronomy was merely a science of observation, and no stretch of mind was required to comprehend its principles or its details. It was now destined, however, to take a higher and a wider flight, and to call into its service the most profound and varied acquirements. The subject of the refraction of the atmosphere had formed a slight connexion between astronomy and optics; but the invention of the telescope now bound these sciences together by an indissoluble tie, and from the latter, the former derived all its subsequent discoveries. In a few years the ring of Saturn and nine secondary planets rewarded the labours of Galileo, Huygens, and Cassini, and the application of the pendulum to clocks by Huygens furnished the astronomer with one of his most valuable instruments. The period, however, of which we now treat, has derived its instinctive feature from the determination of the laws of the planetary motions by Kepler and Newton. Fond of analogies, Kepler directed his mind to the discovery of general laws: he found that all the planets revolved in elliptical orbits, in one of the foci of which the sun was placed. He discovered that the line which joined the sun and the planet described equal areas in equal times; and by comparing the powers of the numbers which represent the periods and the distances of the planets, he determined that the squares of their periods round the sun, varied as the cubes of the greater axes of their elliptical orbits.

These great discoveries paved the way for views still more comprehensive. Kepler had been indulged with a faint glimpse of the mutual tendency of all bodies to one another, and Dr. Hook went so far as to show, that the motions of the planets were produced by the attractive agency of the sun, combined with the force that had originally projected them: but it was reserved for Newton to establish the law of universal gravitation in its entire generality, and to apply it with demonstrative evidence to all the movements within the solar system. In assimilating the power by which the apple falls from the tree, to that which retains the moon in her orbit, Newton made the first step in this great generalization. He soon perceived that all the other satellites revolved round their primary planets in virtue of their attraction, and that the primary, along with the secondary planets, were carried round the sun by the agency of his predominating attraction. Hence, he was led to produce the general principle, that all material bodies attract each other, with a force directly proportional to the number of their particles, and inversely proportional to the squares of their distances. The tides, the spheroidal form of the earth, the precession of the equinoxes, and the irregularities of the lunar motions,

received, from this comprehensible proposition, an immediate explanation; and the laws of the material universe, rescued from the schools of a false philosophy, were now fixed upon an imperishable base. The man to whom science owes this grand discovery, has, by universal consent, been placed above the rest of his species; and the *Principia Philosophiæ Naturalis*, in which it is expounded, has acquired a distinction beyond all the productions of human genius.

(To be continued.)

VARIATION CHARTS.

MR. EDITOR,—The utility of the equi-variation lines, could such be consulted with some degree of certainty, would not, I believe, be contested by any one; but when it is admitted that such cannot be the case in the present state of our magnetical instruments and magnetical knowledge, I must own that the term “hypercritical” applied to my remarks seems altogether wrong. I do not “expect ever to see a variation-chart of the whole world composed from observations with the same instrument, in the same ship, and in the least possible interval of time;” and were such a one constructed, it would in a very short period become “full of anomalies” from the change which is constantly taking place in the directive position of the needle at any place from that great general cause, whatever it be to which the direction itself is due. This is independent of all “local causes;” though these local causes would, of course, only complicate the difficulty still more. It is precisely for these reasons that I object to the use of such charts for *nautical purposes*. They would prove false guides, even could we for any given epoch draw them with the greatest accuracy; and hence it is that I should reprobate their use at all: but under the circumstances which characterize them now, it is impossible to urge too strongly upon the practical navigator, the danger of employing them in any case.

Again, you ask why the *philosopher* may not “collect together all the observations within his reach, reason with them before him, and making *due allowances* for disagreements of instruments, (*which will always disagree*,) the *certain effects* of local attraction and *errors of observation*, trace on a chart *what he considers* to be the actual curve of the magnetic meridian.” I simply answer, that we are totally unable to determine these *due allowances*; and till we are put into possession of accurate and easy methods of determining these necessary corrections, we only impose upon ourselves, and lead the navigator into unnecessary dangers by the construction of such charts for *his use*.

To the attempt to construct such charts, or maps, or globes, for the contemplation of the philosophical inquirer, there cannot be the slightest objection, provided these constructions be made *in a scientific manner and in perfect good faith*. Both these conditions have not yet been fulfilled in any chart that has come to my knowledge. If it

be alleged that any one does fulfil those conditions let it be stated distinctly which, and I have no fear that it can, when fairly analyzed, be shown to fail in one or other of these particulars; at the best they are but rude and very conjectural approximations; nevertheless I should, for one, feel disposed to encourage the attempts to gradually correct them as more satisfactory data, and more satisfactory methods of making the "due allowance" for foreign influence, (whether local attraction, geological structure, temperature, the construction of the instruments, or any other causes,) shall be supplied.

I think you will perceive, sir, upon again reading my letter, that your remarks are founded on a mis-conception of the argument I employed. It was not for the purpose of objecting to the principle of the charts, but to point out the essential inaccuracy that must exist in all; and to point out too the impropriety of giving to every part of any specific line of variation the same degree of authority. So long as some points of a curve are determined with so much more certainty than others, those points ought to be marked differently from those which are less, and these again differently from those points which are entirely conjectural. Surely, this is not "hypercriticism;" and yet this is, in fact, all I did say, though I might with great propriety have said much more.

Finally, my altering my present "hypercritical views" is, I fear somewhat unlikely; not indeed from any tenacity with which I cling to views once entertained, when evidence of their error is furnished me, but from a deep conviction of the utter impossibility of furnishing that evidence, in the present state of magnetical science. Let me moreover, express my belief that the subject itself is of that nature that there is reasonable cause to doubt whether the science will ever arrive to such a degree of precision as to justify the mariner in depending on this class of charts; at any rate, "the time is not yet;" and until it be, the duty of every man of science is to warn the navigator of the danger of adopting loose and hasty approximations as though they were accurate and demonstrated truths.

I remain, Sir, your obedient Servant,
PHILO VERITAS.

[We have given our opinion of these charts, and the circumstances under which we consider they are desirable for seamen, and we can see no reason for altering it. We still maintain that they are useful to seamen to a certain extent and under certain circumstances, which we defined, and as we find them supplied by the Admiralty to all of Her Majesty's ships employed, we may consider that opinion as being virtually corroborated by their lordships. Our correspondent objects to our term "hypercritical," which we have no objection to withdraw.—What we meant was, that he is too fastidious, and it is well for seamen that their variation-charts are not to come from him. As to distinguishing the curves most to be depended on, as given by some observations better than others, as they after all are little more than conjectural; and are the result of certain compasses, which the chances are will vary from that of the seamen, we do not attach much importance to the proposal, and although we appear to differ in opinion from our correspondent, we trust he will take our observations in good part.—E.D. N. M.]

SHOAL OFF CURRENT ISLAND, CAPE PASSARO, SICILY.

WE are indebted to Mr. Norie for the annexed important communication of a shoal, which we hope some of our nautical readers may find an opportunity of examining and laying down correctly.

To the Editor of the Nautical Magazine.

Leadenhall-street, 11th Aug., 1837.

MR. EDITOR,—The following is an extract of a letter received from Mr. Cuthbert Hodgson, dated Falmouth.

I am, Sir,
Your obedient servant,
J. W. NORIE.

“6th Aug., 1837.

“On the 17th of June last, the brig, *Empress*, of Sunderland, under my command, from Catania (Sicily) to England, with a cargo of sulphur, grounded on a shoal about three and a half miles distant from the outermost point of Current Island, which bore from the situation of the ship, E. by S. There was, where she struck, which appears to be the shoalest part of the bank, thirteen feet water: the extent of it is apparently but small; and from the vessel having reached from the land two or three miles before she came to the ground, and being ultimately got off by being hove *towards the shore*, cannot possibly be a continuation of a shoal from the main land. After remaining aground seventeen hours, she was, by discharging part of the cargo, got off without having sustained any apparent material injury.”

LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL ATALANTA,
ON HER PASSAGE FROM FALMOUTH TO BOMBAY—*Continued.*

FERNANDO PO TO THE CAPE OF GOOD HOPE.

Hours.	Courses.	Knots per Hour. Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
2							
4							
6							
8							
10							
12							
2							<i>Sunday, 5th Feb.—Weighed and pro-</i>
4							<i>ceeded.</i>
6							
8							
10					24	27	
12				15	24	27	

Hours.	Courses.	Knots per Hour. Fathoms per Hr.		Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
2					15	24	27	<p><i>Monday, 6th Feb.</i>—People employed securing anchors and putting chains below. At 0h. 45m. p.m. rounded Cape Bullen. Sent down fore-topgallant-yard; lowered topsail-yard on crossrees; housed topmasts. At 7 a.m. altered course to Port Four Points. Ends with steady breezes, and clear. Dampers before the ashpits. Lat. obs. 1° 19' N. Long. 8° 17' E. Barom. 29·6. Therm. 83°.</p>
4					15	24	27	
6					15	24	27	
8					15	24	27	
10					15	24	27	
12					15	24	27	
2					15	24	27	
4					15	24	27	
6					15	24	27	
8					15	24	27	
10					15	24	27	
12					15	24	27	
2	swbW½W	6	4	S.E.	15	24	27	<p><i>Tuesday, 7th Feb.</i>—Begins with fresh breeze, and clear. People employed scrubbing paint inside; clearing ship, &c. Midnight, dark showery weather, with heavy thunder and lightning. At 8 a.m. fresh breezes from S.W. Head swell. At noon do. weather. Sun obscure. Lat. ×. Long. ×. Barom. 29·6. Therm. 81.</p>
4		6	4		15	24	27	
6		6	4		15	24	27	
8	S.b.W¾W	6	4		15	24	27	
10		6	4		15	24	27	
12		6	4		15	23	27	
2		6	4		15	23	27	
4		6	4		15	23	27	
6		6	4		15	23	27	
8		6	4		15	23	27	
10		6	4		15	23	27	
12		6	4		15	23	27	
2	S.b.W¾W	6	4		15	23	27	<p><i>Wednesday, 8th Feb.</i>—Begins with fresh breeze, and cloudy. People employed at various necessary jobs. Carpenters at work putting a false keel on the gig. Midnight, strong breeze, and cloudy weather. At 8 a.m. do. weather. Ends at noon, fresh breeze and clear. Lat. obs. 3° 33' S. Long. 8° 59' E. Barom. 29·7. Therm. 81.</p>
4		6	4		15	23	27	
6	S.S.W.	6	4		15	23	27	
8		6	4		15	22	27	
10		6	4		15	23	27	
12		6	4		15	23	27	
2		6	4		15	23	27	
4		6	4		15	23	27	
6		6	4		15	23	27	
8		6	4		15	23	27	
10		6	4		15	23	27	
12		6	4		15	23	27	
2	South.	6		S.E.	14	23	27	<p><i>Thursday, 9th Feb.</i>—Begins with fresh breeze, and cloudy weather. People employed painting inside of ship. At 8 p.m. dark, cloudy weather. Midnight, do. weather. At 4 a.m. the same. Sent down fore-top-sail yard on deck. Ends at noon. Steady breeze, and clear. Water very much discoloured; stopped the engines; got a cast of the lead; no bottom at 120 fathoms. Lat. 6° 4' S. Long. 9° 53' E. Barom. 29·7. Therm. 81.</p>
4		6			14	23	27	
6		6			14	23	27	
8		6			14	23	27	
10		6			14	23	27	
12		6			14	23	27	
2		6			14	24	27	
4		6			14½	24	27	
6		6			14½	24	27	
8		6			14½	24	27	
10		6			15	24	27	
12		6			15½	24	27	

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	South.	6		S.E.	16	24	27	<p><i>Friday, 10th Feb.</i>—Begins with fresh breezes, and clear. People employed painting. Midnight do. weather. At 4 A.M. the same colour of the water again changed. Ends with light winds, and clear. At 3 P.M. Henry Pratt put in irons, on account of disorderly conduct. At 8h. 30m. apologized. After having received a lecture released.</p> <p>Lat. 8° 44' S. Long. 11° 4' E. Barom. 29·7. Therm. 80.</p>
4		6			16	24	27	
6		6			16	24	27	
8		6			16	24	27	
10		6	4		17	24	27	
12		6	4		17	25	27	
2		6	4		17	25	27	
4		6	4		17	25	27	
6		6	4		17	25	27	
8		6	4		17	25	27	
10		6	4		17	25	27	
12		6	4		17½	25	27	
2	South.	6	4	S.E.	17½	25	27	<p><i>Saturday 11th Feb.</i>—Begins with a steady breeze, and clear. People employed painting inside of ship. Two hands employed trimming coals. Midnight do. weather. Ends with light airs and calm. Experienced a current to the northward.</p> <p>Lat. 11° 48' S. Long. 11° 40' E. Barom. 29·7. Therm. 76°</p>
4		7			17½	25	27	
6		7			18	25	27	
8		7			18	25	27	
10		7			18	25	27	
12		7	4		18	25	27	
2		7	4		18	25	27	
4		7	4		18	25	27	
6		7	4		18	25	27	
8		7	4		18	25	27	
10		7	4		18	25	27	
12		7	4		18	25	27	
2	S. by W.	7	4	S.E.	18	25	27½	<p><i>Sunday, 12th Feb.</i>—Begins with fresh breezes and clear. Employed trimming coals from after hold. At 8 P.M. strong breezes and cloudy. Head sea, ship pitching heavily. Midnight do. weather. Ends the same.</p> <p>Lat. 14° 23' S. Long. 11° 44' E. Barom. 29·8.</p>
4		7	4		18	25	27½	
6		7	4		18	25	27½	
8		7	4		18	25	27½	
10		7	4		18	25	27½	
12		8			18	25	27½	
2		8			18	25	27½	
4		8			18	25	27½	
6		8			18	25	27½	
8		8			18	25	27½	
10		8			18	25	27½	
12		8			18	25	27½	
2	S.S.W.	7		S.E.	18	25	27½	<p><i>Monday, 13th Feb.</i>—Begins with fresh breezes, and clear. Therm. on platform 101°, between cylinders 109°, in the stoke hole 90°. At 7 A.M. altered course two points. Midnight do. weather strong head sea. Ship pitching a good deal. Employed trimming coals from abaft. Ends with light airs and thick hazy weather. Sun obscure.</p> <p>Lat. acct. 17° 27' S. Long. 11° 40' E. Barom. 29·8. Therm. 65°. Burning very small coals which fall through the furnace bars.</p>
4		7			18	25	27½	
6		7			18	25	27½	
8		7			18	25	27½	
10		6	4		18	25	27½	
12		6	4		18	25	27½	
2		6			18	25	27½	
4		6			18	25	27½	
6		6			18	25	27½	
8		6			18	25	27½	
10		6			18	25	27½	
12		6			18	25	27½	

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals Expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	S.S.W.	7		S.E.	18	27	27½	<p><i>Tuesday, 14th Feb.</i>—These 24 hours begin with light airs inclining to calm. People employed getting up coals out of after hold. Carpenter making a headstead for sick. One or two stokers complaining. At two P.M. cleared up. Saw the land. Midnight, cloudy with light airs. At 8 P.M. do. weather. Ends at noon; light variable winds and hazy weather. Lat. obs. 20° 21' S. Long. 12° 13' E. Barom. 29·8. Therm. 68°.</p>
4		7			18	27	27½	
6		7			18	27	27½	
8	S.W.	7			18	27	27½	
10		7			18	27½	27½	
12		7			18	27	27½	
2		7			18	27	27½	
4	S. by W.	7			18	27	27½	
6		7			18	27	27½	
8		7			18	27	27½	
10		7			19	26	27½	
12		7			19	26	27½	
2	S.S.W.	7	4	Variab.	18	25	27½	<p><i>Wednesday, 15th Feb.</i>—Begins with light airs, and calm. Employed getting up coals out of fore hold. Midnight, fresh breezes and dark cloudy weather. A strong head sea. Ship pitching a good deal. A current to the Southward. Ends the same. Lat. obs. 23° 16' S. Long. 13° 26' E. Barom. 29·8. Therm. 68°.</p>
4		7	4		18	25	27½	
6		7	4		18	25	27½	
8		7	4		18	25	27½	
10		7	4		18	25	27½	
12		7	4		18	25	27½	
2	S. by W.	7	4		17½	25	27½	
4		7	4		17½	25	27½	
6	S.½ W.	8	4		17½	25	27½	
8		8	4		17½	25	27½	
10		8	4		17½	25	27½	
12		8	4		17½	25	27½	
2	S.½ W.	7	4	S.E.	17	25	27½	<p><i>Thursday, 16th Feb.</i>—Fresh breezes and cloudy. Getting up coals as yesterday. Midnight, thick foggy weather. At 10 A.M. strong breeze and clear. Ends at noon do. Saw the land bearing East. Lat. obs. 26° 15' S. Long. 14° 21' E. Barom. 29·8. Therm. 68°.</p>
4		7	4		17	25	27½	
6		7	4		17	25	27½	
8		7	4		17	25	27½	
10		7	4		17	25	27½	
12		7	4		16	25	27½	
2		7	4		16	25	27½	
4		7	4		16	25	27½	
6		7	4		16	25	27½	
8		7	4		16	25	27½	
10		8	4		16	25	27½	
12		8	4		16	25	27½	
2	S.½ W.	7	4	S.E.	15	25	27½	<p><i>Friday, 17th Feb.</i>—Strong breeze from S.S.W. with heavy swell. Employed as yesterday. Commenced filling tanks abaft with water as emptied of coal. Coals very small. Midnight, do. weather. At eight A.M. hazy. Ends fresh breezes and cloudy. Experienced a strong current, for which, and heave of the sea, allow 24 miles. Lat. obs. 28° 10' S. Long. chr. 15° 30' E. At 5h. 30m. stopped the engines for two minutes to tighten the connecting rod.</p>
4		7	4		14	25	27½	
6		7	4		14	25	27½	
8		7	4		14	25	27½	
10		7	4		15	25	27½	
12		7	4		15	25	27½	
2		7	4		14	25	27½	
4		7	4		15	25	27½	
6		7	4		16	25	27½	
8		7	4		16	25	27½	
10		7	4		17	25	27½	
12		7	4		17	25	27½	

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	South.	7		S.S.W.	18	25	27½	<p><i>Saturday, 18th Feb.</i>—Strong breezes and cloudy. Midnight do. weather. Ends at noon, strong winds, and hazy. Ship pitching a good deal. Lat. obs. 30° 26' S. Long. chr. 16° 54' E. Bar. 29·8. Therm. 65°. The coals being more dirt we could not generate sufficient steam to blow off the boilers more than once in four hours.</p>
4		6			19	25	27½	
6		6			19	25	27½	
8		5			18	25	27½	
10		5			18	25	27½	
12		5			18	25	27½	
2		5			17	25	27½	
4		5			17	25	27½	
6		5			17	25	27½	
8		5			17	25	27½	
10		5			17	25	27½	
12		5			17	25	27½	
2	South.	7		S.S.W.	17	25	27½	<p><i>Sunday, 19th Feb.</i>—Begins with fresh breezes and clear. Employed getting up coals and filling tanks as yesterday. Midnight, do. weather. At 5 A.M. made the land. At noon Saldanha bay bearing E.S.E. distant 7 or 8 miles. At 3 P.M. Dassen island bore per compass N.E. At 4h. Table Mount South. Stopped the engines at 5 P.M. Lifted the starboard cylinder cover to examine the piston. Boilers blown off at 6h. 30m. P.M. At 5h. 15m. brought to in Table Bay in 10 fms. veered away 50 fms. Contains 36 hours.</p>
4		7			19	25	27½	
6		7			19	25	27½	
8		7			19	25	27½	
10		7			19	25	27½	
12		7			19	25	27½	
2		7			20	26	27½	
4		7			20	26	27½	
6		7			20	26	27½	
8		7			20	26	27½	
10		7			20	26	27½	
12		7			20	26	27½	
2	S. by W.				21	30	27½	
4					21	30	27½	
6					21	20	27½	

The foregoing log gives the following results: Voyage, Fernando Po to Cape of Good Hope; total coal consumed, 213 tons; average per hour, 12·3 cwt.; average per hour per horse power, 6½ lbs. nearly. Distance run by log being 2,373 miles, and the time employed, 346 hours, is 14 days 10 hours for the voyage, or 6·8 miles per hour.

COPY OF THE LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL BERENICE. *Teneriffe to Bonavista and Fernando Po, on her way to Bombay.*

Hours.	Courses.	Per Hour		Winds.	Mean Number of Revolutions.	Coals in cwt.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2								<p><i>Saturday, 25th March.</i>—A.M. Light abs from the land with a swell from the South-</p>
4								

Hours.	Courses.	Knots per Hour. Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
6							ward. Preparing to receive coals on board. Noon, light breeze from S.W. and cloudy. P.M. employed taking in coals. Sunset, squally with rain and lightning. Received on board 16 tons of coals. Draught aft 14-10, forward 13-1. 10h. 30m. weighed and stood as per log. Set jib and staysail. Variable winds. In sail. Midnight, light airs and fine. 10 tons of coal received on board. Llangenlech coal used throughout. Nine lighted fires. Steam raised in about one hour and a quarter. Midnight, light airs and fine. The flues were swept and boilers cleaned. The quantity of soot removed was 14 cwt., and 2 cwt. of light thin scale. The boilers were found in a perfect state, devoid of leaks. Coal on board 198 tons, oil 326 gallons.
8							
10							
12							
2							
4							
6							
8							
10							
11	S.W. b. S.	4 4	N.W.	17	16	27½	
12		9 4		17	16	27½	

2	S.W. b S.	9	N.W.	16	16	27½	<i>Sunday, 26th March.</i> —A.M. Daylight, steady breeze and cloudy with small rain. 11, Set fore and main sails and jib. Crew employed shifting coals from the after hold to the bunkers. Noon, moderate breeze and fine weather. Lat. 26° 42' N. Long. 17° 1' W. Mayo S. 28° W. 789 miles. Coal expended 14 tons. Remaining 184 t., tallow 4,060 lbs., oil 323 gallons. P.M. moderate breezes and fine weather. People employed hoisting coals out of fore hold, and putting them into the bunkers. Midnight, fine weather and calm, with a heavy swell. Throttle valve open throughout.
4	S.W.	9		16	16	27½	
6		9		16	16	27½	
8		9		16½	16	27½	
10		9		16½	16	27½	
12		9 4		16½	16	27½	
2	S.W. ½ S.	9 3	West.	17	16	27½	
4		9 4		17	17	27½	
6		9 4		17½	17	27½	
8		9 6		17½	17	27½	
10		9 6		17½	17	27½	
12		10		17½	17	27½	

2	S.W. ½ S.	9		17	17	27½	<i>Monday, 27th March.</i> —A.M. fine weather, and heavy swell. Daylight, light airs and cloudy. People employed about the coals. Var. by Azimuth, 16° 50' West. Noon, calm. Lat. 23° 19' N. Long. 17° 57' W. N.W. point of Bonavista S. 32°, W. 506 miles. Coal expended 20 tons 10 cwt. Rem. 163 tons 13 cwt., tallow 4,010 lbs., oil 319½ gallons. P.M. light airs and cloudy. At 1 set on the expansion valve, water very smooth. Sunset, light airs. Var. by amplitude 16° 2' West. Midnight, steady light breezes; found the consumption of coals considerably less. Expansive valve a quarter closed from 1 P.M. till midnight.
4		9		17	17	27½	
6		9		17	17	27½	
8		9		17	17	27½	
10		9		17	17	27½	
12		9		17	17	27½	
2	S.W.	9 6	N.W.	17	16	27½	
4		9 6		17	16	27½	
6		9 6		17	16	27½	
8		9 6		17½	16	27½	
10		10		17½	16	27½	
12		10		18	16	27½	

Hours.	Courses.	Knots per Hr.	Fathoms pr. Hr.	Winds.	Mean Number of Revolutions	Coals in Cwts.	Engine Barometer.	REMARKS.
2	S.W.	10		North	17	16	27½	<i>Tuesday, 28th March.</i> —A.M. light breezes and cloudy. At 4 commenced washing decks. Steady light N.E. breeze. At 8 got the quarter-deck awning spread. Watch employed under the boatswain. Noon, Lat. 20° 1' N. Long. 19° 32' W. Mayo S. 25° W. 316 miles. Coal expended 19 tons 8 cwt., rem. 14½ tons 5 cwt., tallow 3,960 lbs., oil 316 glns. P.M. at 1 put off the expansion valve. Increase of speed 1 mile per hour. At 2 set on expansion valve. Sunset, light breeze and fine weather. Midnight, light airs and cloudy. Consumption of coal greater in proportion (when valve is working) to the reduction of speed. Kept working ½.
4		10			17	16	27½	
6		9	6		17	16	27½	
8		9	6		18	16	27½	
10		9	8	N.E.	18	16	27½	
12		10			18	16	27½	
2	SW. by W	10	4		18½	17½	27½	
4		10			18	16	27½	
6		10			17½	16	27½	
8		10			18	16	27½	
10		10		West.	18	16	27½	
12		10			18	16	27½	
2	S.W. b W	10	4	West.	18½	16	27½	<i>Wednesday, 29th March.</i> —A.M. at 1 commenced on the fore hold. Daylight, steady breeze and fine. At 9 set fore top sail and top gall. sail. At 11 in do. Crew employed restowing booms. 11h. 30m. Martinez Hill N. 86° W. Noon, light breeze and fine weather. Lat. 17° 1' N. Long. 22° 33' W., N.E. point of Bonavista S. 16°, W. 48 miles. Coal expended 19 tons 10 cwt., rem. 12½ tons 15 cwt. Tallow 3,910 lbs., oil 312 glns. P.M. pleasant breeze and fine weather. 2h. 45m. altered course to S.S.W. Bonavista W.S.W. at 6h. S. extreme of Bonavista, W. b. S., N. point. NW. 30m. reduced steam to await daylight. Midnight, clear starlight. Furnace doors open partially.
4		10	4		18½	16	27½	
6		10		N.W.	18½	16	27½	
8		10			18	16	27½	
10		9	6	N.	18	16	27½	
12		9	4	N.E.	18	16	27½	
2		9	4		18	16	27½	
4		9	5	NNW	18	16	27½	
6	S.W. ½ S.	9	6		18	16	27½	
8		7			12	10	27½	
10	S.W. b. S.	6	4		12	10	27½	
12		6	4		12	10	27½	
2	S.W. by S.	6	4	N.W.	12	10	27½	<i>Thursday, 30th March.</i> —A.M. light winds and fine. At 2 island of Mayo W. by N. 2h. 30m. hove to with head to the Eastward Island bearing N.W. by N. At 6 stood in for the anchorage, altering course as requisite. 7h. 30m. anchored in English road in six fathoms. Agent came on board and received orders from the captain to commence sending the coals on board as soon as possible. Spreading awnings, rigging, purchases for coals, &c. Noon, fine weather. Bearings at anchor, flag staff E. half S. 600 yards, peak N.E. by N. Low sandy point N.W. half N. Extremes of St. Jago, S. 61 degrees W., to N. 50 degrees W. The flues were swept on the 31st March, and boilers cleaned; quantity of soot, 12 cwt.; light thin scale 1½ cwt.; boilers sound and perfect. A thermometer placed in the cabin before the engine-room bulkhead never exceeds 86 degrees.
4	Hove to.				17½	12½	27½	
6								
8	At							
10								
12	anchor							
2								
4	in							
6								
8	English							
10								
12								
2				N.E.				<i>Monday, April 3rd, 1837.</i> —A.M. Pleasant breezes. Employed taking in coal. Received on board 23 tons of coal; total received, 230 tons. Noon, all hands employed about the coals. Smart breezes from the northward and eastward. Received on board five punkins. P.M. fresh breezes and fine weather. The fires were lighted at 1 P.M.; steam raised in 1 h. 10 m. Draft forward, 14ft. 3in.; aft. 15ft. 0in. 2h. 45m. having received all the coal left for us, weighed, set off full speed. 7, set foresail; 8, set mainsail. Midnight, fresh breezes and cloudy weather.
4								
6	Roads.							
8								
10								
12								
2								
3	S.W.	2	2	N.E.	12	12		
4	S.E. b. E.	6			12	12		
6		7			12	11½		
8	S.E. by S.	7			12	11		
10	S.E.	7			12	11		
12		8			12	11		

Hours.	Courses.	Per Hour		Winds.	Mean No. of Revs. per Minute	Coals Expended in Cwts.	Engine Barometer.	REMARKS.
		Knots	Fathoms					
2	S.E. $\frac{1}{2}$ E.	8		N.E.	12	12		<p><i>Tuesday 4th April.</i>—A.M. Smart breezes and cloudy weather. Daylight, started the coals remaining on deck into the bunkers. 8, commenced working fore-hold. Set on expansion valve, half stroke. 9h. 30m. passed a brig standing to the northward. Noon, fresh breezes and fine weather. Crew employed setting up foremast shrouds. Lat. $14^{\circ} 7' N.$ Long. $20^{\circ} 54' W.$ Cape St. Ann, S. 49, E. 609 miles. Coal expended. 14 t. 6 cwt., rem. 310 tons, 14 cwt. Tallow 3,790 lbs. Oil $305\frac{1}{2}$ gallons. P.M. fresh breeze, and fine. Set square-sail, fore top-gallant sail. Unbent chains, stowed them below. At 4 commenced on the bunkers. 8 cloudy, set main-gaff topsail. Midnight, hazy weather.</p>
4	S.E. by E.	8			12	12		
6		8		N.N.E.	12	12		
8		8			12	$11\frac{1}{2}$		
10		7	6		12	$11\frac{1}{2}$		
12		7	6		12	$11\frac{1}{2}$		
2	S.S.E. $\frac{1}{2}$ E.	7	6	N.E.	12	11		
4		7	6		12	11		
6		8	2		12	11		
8		8	6		$12\frac{1}{2}$	11		
10		8	6		$12\frac{1}{2}$	11		
12		9			$12\frac{1}{2}$	11		

2	S.S.E. $\frac{1}{2}$ E.	9		N.N.E.	13	11	<p><i>Wednesday, 5th April.</i>—A.M. Hazy weather, with heavy dew falling. At 4, working coals from fore-hold; at 5, took all the bags out of after hatch, and started them into bunkers. At 8, set lower and topmast studding sails. At 10, in studding sails. At 10h. 30m. set fore topmast studding sail. Noon, fresh breezes and fine weather. Crew employed making and taking in sail. Carpenter making a royal yard. Lat. $11^{\circ} 58' N.$ Long. $18^{\circ} 52' W.$ Cape St. Ann, S. $52^{\circ} E.$ 428 miles. Coal expended 13 tons 14 cwt. rem. 297 tons. Tallow 3,720 lbs. Oil 302 gallons. P.M. worked on the bunkers. At 1 took off expansion valve. At 2, set royal, set on valve. Sunset, moderate and clear. Midnight, moderate and fine, a heavy dew.</p>
4		9			14	11	
6		9			$14\frac{1}{2}$	11	
8		8	6		$14\frac{1}{2}$	11	
10		9	2		15	11	
12		9			15	11	
2	S.E. by S	8	4		14	11	
4		8	6		14	11	
6		8	6		14	12	
8		9			14	12	
10		9		N.E.	14	$11\frac{1}{2}$	
12		9	2		14	$11\frac{1}{2}$	

2	S.E. by S.	9		N.E.	14	11	<p><i>Thursday, 6th April.</i>—A.M. Light airs and smooth water. 3h. 30m., got the coal bags out of the after-hold, and every thing in readiness for beginning at the coals. 4h. 30m. commenced on the coals, hoisted up 100 baskets. At 8 saw a ship and schooner standing to the southward, bearing south. At 10 spoke French ship and schooner standing to the eastward; vessels of war out on a cruise. Crew employed rattling down the fore rigging and sundry jobs. At 11 in topmast studding sail. Noon, light breezes and fine. Lat. $10^{\circ} 4' N.$ Long. $16^{\circ} 1' W.$ Cape St. Ann S. 50 E. 234 miles. Coal expended 13 tons 8 cwt., rem. 283 tons 12 cwt. Tallow 3,650 lbs. Oil $298\frac{1}{2}$ glns. P.M. light airs and variable. At 2 set lower studding sail. At 4 do. weather. Sunset, light</p>
4		9			14	11	
6		9			14	12	
8		8	7		14	11	
10		8	4		$14\frac{1}{2}$	11	
12		8			15	11	
2	S.b.E. $\frac{1}{2}$ E.	9			15	11	
4		9			15	12	
6		9			15	$11\frac{1}{2}$	
8		8	6		$14\frac{1}{2}$	11	
10		8	7		$14\frac{1}{2}$	11	
12		9			$14\frac{1}{2}$	11	

breezes and fine. Var. by amplitude $17^{\circ} 48' W.$ In square sails. Lightning to the eastward. Midnight, light winds and fine weather.

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
2	S. by E.	8	7	N.W.	15	11		<i>Friday, 7th April.</i> —A.M. light breezes and cloudy. Sunrise, light airs and cloudy, very sultry. Got 100 baskets of coal out of after-hold. At 10 cloudy with rain. Crew employed as yesterday. Noon, cloudy and sultry weather. People employed about rigging. Lat. 7° 33' N. Long. 14° 15' W. Cape Palmas S. 66° E. 430 miles. Coal expended 13 tons 16 cwt., rem. 269 tons 16 cwt. Tallow 3,580lbs. Oil 295 glns. P.M. light breezes and fine. At 2 sounded with 120 fathoms, no bottom, dark and cloudy weather. At 5 clear, saw a sail bearing S.W. by S.; judged her to be a brigantine standing to the westward. At 8 lightning to the eastward. Midnight, lightning all round.
4		8	7		14½	11		
6		8	4		14	12		
8		8			14	11		
10		8			14	11½		
12		8			14	12		
2		8			14	11½		
4		8			14	11		
6	8		14½	11				
8	9		14½	11½				
10	S.E. by S.	9		14½	12			
12		8	4	14½	12			

2	S.E. by S.	8		Calm.	13½	11½		<i>Saturday, 8th April.</i> —A.M. light, variable airs round the compass. Sultry, with lightning.—Light breeze and cloudy. At 10 heavy squalls, wind variable; rain and thunder with lightning round the compass. Crew employed making boat's gripes. Noon, moderate and clear to the eastward. No observation. Lat. 5° 35' N. Long. 11° 54' W. Cape Palmas, S. 74° E. 258 miles. Coal expended 13 tons 18 cwt., rem. 255 t. 18 cwt. Tallow 3,510 lbs. Oil 291½ glns. P.M. squally, with rain, thunder and lightning. Sunset, cloudy, with light airs from the southward. Set fore and aft sails. At 9 in all sail. Midnight, light breezes and cloudy, lightning to the S. E.
4		8			13½	12		
6		8			14	11		
8	S.E.	8		East.	13½	12		
10		7	6		13½	11½		
12	7	4		13	11			
2	S.E.	7	6	S.S.E.	14	12		
4	S.E. ½ E.	8	4		14	12		
6		8	6		14½	12		
8	8	6		14½	11½			
10	8	4		S.E.	14½	11		
12	8	4			14½	11½		

2	S.E. ½ E.	8	6	SE.	15	12		<i>Sunday, 9th April.</i> —A.M. At 4 hove the lead. Found muddy bottom 45 fathoms. At 5h. 30m. extremes of land from north to E.S.E. At 7h. 30m. stopped engine about 10min. to speak two canoes. Passed two Schooners standing to the northward, under American and Portuguese colours. Heavy rain. Noon, light breezes and cloudy; highest point of land N.N.E. in 55 fathoms, mud. Lat. 4° 33' N. Long. 8° 31' W. Cape Palmas, S. 79° E. 45 miles. Coal expended 13 tons 16 cwt., rem. 242 t. 2 cwt. Tallow 3,440 lbs. Oil 288 gallons. P.M. fine weather, with light airs from northward. Performed divine service. Land not in sight from the deck. At 5 sounded, no bottom at 110 fathoms. Cloudy, with a heavy swell from S.W. Midnight, calm.
4		8	6		15	11½		
6	S.E. by S.	8	4		15	11		
8		8	6		15	11		
10	S.S.E.	8	4		15	11		
12		8	4		15	12		
2	S.E.	8	4	N.W.	15	11½		
4		8	6		15	11½		
6	E.S.E.	8	6	Calm.	15	12		
8		8	4		15	12		
10	8	2		14½	12			
12	8	2		14½	12			

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
2	E.S.E.	8	4	Calm.	14½	11½		<p><i>Monday, 10th April.</i>—Daylight, cloudy. Extreme of land north. Squalls of rain. Crew employed drawing and knotting yarns. Allowed two miles an hour for a current. E.S.E. Noon, cloudy. Lat. 3° 59' N. Long. Coal expended 13 tons 14 cwt. rem., 238 ton 8 cwt. Tallow 3,370 lbs. Oil 284½ gallons. P.M. wind variable. Swell from S.W. Sunset, light breezes and cloudy. Fore and aft sails set. Steady breezes and cloudy. Lightning in the south.</p>
4		8	4		14½	11½		
6		8	2		14½	12		
8		8	4		15	11½		
10		8	2		15	11		
12		8	3		15	11½		
2		8	5		15	11½		
4		8	4		15	11½		
6		8	2		15	11		
8		8	2		15	11½		
10		8	4		15	12		
12		9			15	11		

2	E.S.E.	8	4	S.W.	16	11		<p><i>Tuesday 11th April.</i>—A.M. light breezes. At 4 a heavy squall of wind and rain, with thunder and lightning. At 5 set mizen and gaff topsail. At 9 set fore topsail, top-gallt. sail and square sail. Crew employed drying sails, and other necessary work about the ship, under the boatswain. Dark and cloudy in the south. Noon, Lat. 3° 43' N. Long. 0° 56' W. Fernando Po, S. 89° E. 577 miles. Coal expended, 13 tons 18 cwt.; rem. 214 tons 10 cwt. Tallow 2,300 lbs. Oil 281 gallons. P.M. squalls from the eastward with heavy rain. In all sail. Midnight, light air, and fine.</p>
4		8	7		16	11		
6		8	6		16	11		
8		8	6		16	11		
10		8	6		15½	12		
12		8	6		15	12		
2	EbS½S	8	5	S. by W	15	11½		
4		8	2		15	11		
6		8	2		15½	11		
8		8	6		16	11		
10		8	6		15½	11		
12		8	6		15	11		

2	EbS½S	8	6	E.S.E.	15			<p><i>Wednesday, 12th April.</i>—A.M. At 4 swell from the southward and westward. Vivid lightning from south to west. Commenced working fore-hold. Crew employed about sundry jobs under the boatswain. Noon, light breezes from the E.N.E. Lat. 4° 1' N. Long. 2° 6' E. Fernando Po. S. 87° E. 396 miles. Coal expended 13 tons 18 cwt., rem. 200 tons 12 cwt. Tallow 2,230 lbs. Oil, 277½ gallons. P.M. set fore and aft sails. At 4 light winds and variable. Thunder and lightning. Midnight, cloudy.</p>
4		8	4		15			
6		8	2		15			
8		8	5		15			
10		8	4		15			
12		8	2		14½			
2		8	2	E.N.E.	14½			
4		8	2		14½			
6		8	4		14½			
8		8	6		14½			
10		8	5		14½			
12		8	3		14½			

2	E.S.E.	8	3	Vble.	15	11		<p><i>Thursday, 13th April.</i>—A.M. cloudy. At 4 thunder and lightning. Crew employed making and taking in sail. At 11 a ship in sight. Noon, a heavy squall. In all sail. Lat. 3° 43' N. Long. 5° 27' E. Fernando Po, East 198 miles. Coal remaining 186 tons 14 cwt. Tallow 2,160 lbs. Oil 274 glns. P.M. squally, with rain. Employed catching water. Exchanged signals with a ship, No. 46, Liverpool list, <i>Kingston B Bk.</i> standing to the eastward. At 9 sounded in 10 fathoms muddy bottom. At 10 sounded in 8 fathoms, soft mud. Light breezes and clear weather. Midnight, reduced steam to 8 knots.</p>
4		8	6		15	11		
6		8	5		15	11		
8		8	4		14	11		
10		8	2		14	11		
12		8	2		13½	11		
2	E.b.s.½S.	8		S.E.	13	11		
4		8	7		16	11		
6		8	4		16½	11		
8		9			16½	11		
10	E.S.E.	9			17	11		
12		8	4		14	11		

Hours.	Courses.	Knots per Hr. Fathomspr.Hr	Winds.	Mean number of Revolutions	Coals in Cwts.	Engine Barometer.	REMARKS.	
2	E.S.E.	7	Varibl.	13	11		<i>Friday, 14th April.</i> —A.M. reduced steam to 7 knots. 5h. 30m. took off expansion valve and gave full speed. Daylight, 3 sail in sight. 8h. bent both chains and ranged ten fathoms on starboard side. Crew employed at necessary jobs for going into harbour. 5h. 30m. increased power to full force. Set off expansion valve. Noon Lat. 4° 7' N., Long. 8° 17' E. Fernando Po S. 53° E. 35 miles. Coal expended, 13 tons 17 cwt.; rem. 172 tons 17 cwt.; tallow, 2,090 lbs.; oil, 270½ glns. P.M. light breeze, with thick hazy weather. Unbent top and topgallant sails, stowed them away in the sail room. Hard squalls of wind and rain. 3h. weather having cleared, saw the island of Fernando Po, bearing S.E.bE. Sunset, light breeze and fine weather. 7h. anchored in Clarence Cove, in 14 fathoms mud. House on Adelaide Island, N. 61° W. Flag staff, N. 56° E. Governor's house, E. 16° S. Extremes of Cove, from N. 38° E. to N. 67° W. Cape Bullen, N. 50° W. Midnight, light breezes and fine. The quality of coal consumed is Llangennech, but not improved from exposure to weather at Mayo. Draft of water, forward, 11 ft. 3 in.; aft, 12 ft. 3 in., having risen three feet. Weights always removed from the safety-valve when stopping or reducing speed.	
4		7		13	11			
6	E.b.S.½ S.	7		13	12			
8		9		16	12			
10		9		16	12			
12		9		16	12			
2	S.S.E.½ E.	9		16	12			
4	S.E.½ S.	8		16	12			
6		8		16	12			
8	} Standing for the anchorage. At							
10	} anchor in Clarence Cove, Fer-							
12	} nando Po.							

The foregoing log gives the following results: Voyage *Teneriffe to Bonavista*. Total coal consumed, 85 tons 8 cwt.; average per hour, 16 cwt. 28 lbs.; average per hour per horse power, 6½ lbs.; distance run by log 952 miles; time employed, 105½ hours, or 4 days and 9½ hours; average rate, 9 miles per hour, and 216 per day.

Voyage *Bonavista to Fernando Po*. Total coal consumed, 157 tons 3 cwt.; average per hour, 11 cwt. 76 lbs.; average per hour per horse power, 4½ lbs.; distance run by log, 2272 miles; time employed, 269 hours, or 11 days 5 hours; average rate, 8¼ miles per hour, and 202 per day.

N.B. The vacant columns in the foregoing log were also vacant in the MS. original with which we were favoured by the Hon. Court of Directors.

CORRECT POSITION OF THE CROCODILE ROCK in *Bass Straits, Australia.*

THE following communication from Captain Hobson, commanding H.M.S. *Rattlesnake*, will be found most important to vessels proceeding to that distant quarter of the world.

H.M. ship *Rattlesnake*, Hobson's Bay, Port Philip, 10th March, 1837.

(Received, 23rd August.)

Sir,—I have the honour and satisfaction to acquaint you that the situation of the Crocodile Rock in Bass's Straits, which has hitherto been much dreaded from its doubtful position in the charts, was fully and satisfactorily determined on the 28th ultimo, by bearings taken on board H.M.S. *Rattlesnake*, under my command.

As I had the good fortune, when the rock was seen, to have as my guest that eminent surveyor, Capt. P. P. King, R.N., I give you the position of the rock as determined by his angles and bearings, which

the public will receive with a degree of confidence, that I could not hope would attach to any observation of mine.

The S.E. end of the Crocodile Rock, for a space of probably fifty yards, is elevated about three or four feet above the level of the sea at high water, from which a reef appears to extend three quarters of a mile to the N.W.

Soundings on coral bottom were obtained at one mile south from the reef in forty fathoms, one and a half mile west in forty-two, and three miles N.W. in forty-five fathoms.

Crocodile Rock bears S. 42° E. magnetic, (S 34° E. true,) six miles from Redondo.

Do. do. N. 47° W. magnetic, (N. 40° W. true,) 11½ miles from Sir Roger Curtis Island summit.

Do. do. West magnetic, (N. 83° W. true,) 13½ miles from the Devil's Tower.

Directions to avoid the Crocodile Rock.

From the eastward.—Pass to the southward of the Devil's Tower, and steer W. by S., (magnetic,) until Redondo bears to the northward of N.W. ½ N. (magnetic.)

From the westward.—As the rock, when in a line with the Devil's Tower, bears east, by keeping the tower to the northward of E. by N., or to the southward of E. by S, it will be easily avoided.

When the tide is ebb, the stream sets to the northward, and must be allowed for. The sea breaks constantly upon the rock, and its position is very near the situation assigned to it on Captain Flinder's chart of Bass's Straits.

I have the honour to be, Sir,
Your most obedient, humble servant,
W. HOBSON, Captain.

Capt. Francis Beaufort, R.N.,
Hydrographer to the Admiralty.

NEW BEACON AND LIGHT AT THE PORT OF ISLAY, *Peru*.

THE following information is important to masters of vessels bound to Islay.

British Consulate, Islay, Feb. 20th, 1837.

Sir,—I have the honour to acquaint you, for the information of the Lords Commissioners of the Admiralty, and British merchant vessels trading to this port, that a "Vigia," or look-out house, has been established by order of this government, as a beacon for vessels making the port of Islay, to avoid their passing and getting to leeward of it, which has often been the case formerly.

The "Vigia" is painted white, with a flagstaff, on which a flag is hoisted when any vessel is discerned in the offing.

It stands upon an eminence, bearing east by south, distance one mile from the anchorage, and may be clearly perceived by vessels coming from the southward and eastward, as far as the point of Tambo.

In case any vessels should be off the port at nightfall, a light will be exhibited from the peak of the flagstaff, as a guide to the entrance of the harbour, for which a charge of two dollars each vessel is made.

I have the honour to be, Sir,

Your most obedient, humble servant,

THOMAS CROMPTON, H.M. Acting Consul.

Capt. Francis Beaufort, R.N.

PROPOSED SETTLEMENT IN DAVIS STRAITS.

Hull, 12th July, 1837.

MR. EDITOR,—The arrival of the Swan at this port, in a situation too dreadful to be described, will, I presume, set the question of a settlement on the west coast of Baffin's Bay completely at rest. The sufferings of the crew in attempting to reach the shore even under favourable circumstances, must point out in stronger terms than can be done by any pen, the futility of such a proposition. I have lately had the pleasure of communicating with Capt. Dring, who concurs in my opinion, that the plan I have suggested is the only sure one; and he is of opinion also, that no ship should be permitted to leave England, or be with less than seventeen or eighteen month's provisions. In this stock of provision, there should be but a small proportion of salt meat, the use of which he found so pernicious; and there should be an ample proportion of anti-scorbutics.

I regret that the subject has not been taken into consideration during this session of parliament, but I am glad to find that Mr. Bannerman, who has been justly named the "Sailor's Friend," intends to take it up next year. In the meantime I find, that until something is done, the valuable western fishery is to be abandoned! and that this next year the ships will not attempt to cross at all. I need scarcely add that the loss of this excellent nursery for seamen, will be a serious one to the nation.

I am, your obedient servant,

A. B.

Naval Chronicle.

It is stated that the island of Ascension having, by the indefatigable exertions of Capt. Bate and the preceding governors, been made available for nearly all purposes, is ordered to be in future the head-quarters of the admiral commanding on the Cape and West African station.

STEAM.—The Great Western, steam-ship, of four hundred horse power, built for the purpose of running between Bristol and New York, was launched at the former place on the 19th of July. The number of persons who attended to witness the launch must have been upwards of 20,000.

IRON STEAM-YACHT.—On the 10th of July, that beautiful model of steam-boat architecture, L'Egyptien, which has been constructed

by Mr. John Laird, of Birkenhead, for the Pacha of Egypt, left the river on her voyage to Alexandria. L'Egyptien is 125 feet in length, eighteen feet beam, and is furnished with engines of forty-five horses' power. The after part of the vessel is divided into spacious and airy cabins, lighted by plate-glass side-windows, and handsomely fitted up, particularly the pacha's state cabin.—*Liverpool Paper*.

We noticed the week before last the sailing of L'Egyptien, for Alexandria, and we understand that most satisfactory accounts of her progress, as far as Lisbon, have been received. She has proved herself an excellent sea-boat, having had a head wind and sea to contend with, from the time of passing Tuskar; and the compass is found to act as well on board of her as it does under the most favourable circumstances on board wood vessels. Some experiments were tried on board the L'Egyptien a few days before she sailed, by Professor Barlow, of Woolwich. His directions were strictly adhered to, in fixing the situation for the compass; and the report of the voyage to Lisbon has proved that the favourable opinion he then expressed as to the result, was founded on a thorough acquaintance with the subject. We hope soon to hear of her arrival at Alexandria; and, the anticipated difficulty as to the working of the compass having been obviated, there is every reason to suppose, that *iron* vessels will come into very general use, both for sea-going steamers and sailing vessels.—*Liverpool Paper*.

BAY OF LIBERTAD.—We regret having to announce that accounts from Capt. Belcher, commanding H.M.S. Sulphur, contain intelligence of a boat belonging to her having been capsized in the surf in the Bay of Libertad, a few miles west of the Bay of Panama, on the exposed shore of the Pacific Ocean. Lieut. Kellet and his crew escaped with some severe bruises, but Capt. Belcher's coxswain was unfortunately drowned. When the accounts left he had not been able to effect a communication with his ship for several days; and the extreme apathy shown towards his people by the authorities, in his helpless condition, render it by no means desirable for vessels to visit the bay, more especially as no refreshments or even bullocks can be obtained.

MOVEMENTS OF THE ROYAL NAVY, TO AUGUST.

Sd., sailed; arr., arrived; rem., remained.

AT HOME.

PORTSMOUTH.—July 16th: sd., H.M.S. *Volage*, to Sheerness. Arr., *Cruizer*, from the West India and North American station, and proceeded to Sheerness to be paid off. The *Partridge*, Lieut. Bisson, went out of harbour on 19th, and without anchoring at Spithead, proceeded to the coast of Africa. The *Alligator* was commissioned on the 20th. *Hyacinth* was commissioned on 23d, by Commander William Warren, and *Edinburgh* on 25th, by Commander D. Hastings for Captain W. W. Henderson. 29th: Rear-Admiral the Hon. D. P. Bouverie took charge of the dock-yard as superintendent, and hoisted his flag in the *Victory* next day. August 2d: H.M.S. *Melville*, with the flag of Admiral Sir P. Halkett, arr., in thirteen and a half days, from Halifax. Sir P. Halkett struck his flag the following evening. 3d: arr., H.M.S. *Pique*; returned from her trial cruise. 6th: arr., H.M.S. *Hercules* and *Pearl*; the latter from the coast of Spain. Captain Boxer superseded the Honourable Captain Rous in the command of the *Pique* on the 8th. 16th: *Sparrow* sd. for South America and the Falkland Islands. Arr., the *African*, steamer, Captain Beechy, from Woolwich. Ships in Port.—*Melville*, *Hercules*, at Spithead. *Britannia*, *Victory*, *Edinburgh*, *Alligator*, *Pique*, *Hyacinth*, *African*, *Seaflower*, *Cracker*, in harbour.

ENLARGED SERIES.—NO. 9.—VOL. I.

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PLYMOUTH.—July 15th: arr., *Lightning*, steamer, Lieut.-Com. J. Shambler, from Portsmouth; and *Saracen*, 10, Lieut.-Com. W. H. Hill, from coast of Spain. 17th: arr., *Meteor*, steamer, Lieut.-Com. G. W. Smith, from the West Indies. Sd., *Comet*, steamer, Lieut.-Com. G. T. Gordon, for the coast of Spain; and *Lightning*, steamer, for Holyhead. 18th: sd., *Shamrock*, 10, Lieut. C. Servantes, for Cork. Two corvettes, of twenty-six guns each, are ordered to be built in this dock-yard, to be named the *Creole* and *Spartan*. The *Resistance*, 46, is ordered to be fitted for a troop-ship. 21st: sd., *Meteor*, st. v., for Woolwich. The *Saracen*, 10, Lieut.-Com. W. H. Hill, came into Barnpool to refit. 24th: arr., *Cracker*, cutter, from Portsmouth, and returned the same day. 26th: arr., *Firefly*, st. v., Lieut. Com. J. Pearse, from Falmouth, having landed Med. mail. 28th: arr., *Lightning*, steamer, and sd. for Woolwich on the 30th.

August 1st: arr., *Athol*, troop-ship, 28, Mr. A. Karley, master, from Portsmouth, on her way to Cork. 2d: arr., *Hercules*, 74, Capt. Sir J. Bremer, (acting); and *Inconstant*, 36, Capt. D. Pring, from a cruise; the latter having sprung her bowsprit. *Talbot*, 28, and *Racehorse*, 18, recently paid off here, are ordered to be brought forward for commission. 4th: sd., *Hercules*, 74, Capt. Sir J. G. Gordon, (acting,) for Portsmouth; also *Athol*, troop-ship, Mr. A. Karley, master, for Cork, where she will embark the 12th regiment for the Mauritius. 7th: came into harbour, *Inconstant*, 36, Capt. D. Pring, to get a new fore-yard and bowsprit. 12th: arr., the *Arab*, transport, from the Isle of France, and sd. next day to the eastward. Sd., the *Saracen*, 10, Lt.-Com. H. W. Hill, for the coast of Africa. 17th: arr., the *Blazer*, st. v., Lieut. Com. J. M. Waugh, from the Mediterranean; last from Falmouth. In Hamoaee,—*Royal Adelaide*, *San Joseph*, *Dougal*, *Wellesley*, *Inconstant*, and *Firefly* and *Blazer*, steamers. In the Sound—*Pembroke*.

ABROAD.

ASCENSION.—5th June: rem., H.M.S. *Pelican*, 16, Com. B. Popham, and *Scout*, 18, Com. R. Craigie.

BAHIA.—3d June: arr., *Fly*, 18, Com. R. Elliott, from Rio.

BARBADOS.—9th June: arr., *Sappho*, from Plymouth. 14th: arr., H.M.S. *Comus*; sd., 19th, for Jamaica.

BERMUDA.—15th June: sd., H.M.S. *Vestal*, for Halifax, with Sir T. Ussher. 24th: arr., H.M.S. *Sappho*, and sailed for Halifax.

BONNY.—18th May: rem., H.M.S. *Scout*, *Dolphin*, and *Lynx*.

CALCUTTA.—8th March: arr., H.M.S. *Zebra*, from Trincomalee. 9th: arr., H.M.S. *Algerine*, from Ceylon.

CALLAO.—1st May: arr., *Actæon*, 28, from Guayaquil. Rem., *Blonde*, 46, Commodore Mason.

CAPE OF GOOD HOPE.—2d June: arr., H.M.S. *Pelorus*.

CHAGRES.—30th April: sd., *Serpent*, Com. Warren.

GAMBIA.—5th May: arr., H.M.S. *Viper*, 6, Lieut. Winniet, from Plymouth.

GIBRALTAR.—8th July: arr., H.M.S. *Childers*, Capt. H. Keppel, from Barcelona. 13th: arr., H.M.S. *Wolverine*, Capt. E. Howard, from Plymouth. 14th: arr., H.M.S. *Dido*, 20, Capt. Davies, and *Medea*, steamer, Com. Austen. 21st: arr., H.M.S. *Scorpion*, 10, Lieut. Gayton, from Barcelona.

HALIFAX.—2d July: arr., H.M.S. *Serpent*, 16, Com. Warren, from Jamaica. 6th: arr., H.M.S. *Rainbow*, 28, Capt. Bennet, from West Indies. 19th: sd., H.M.S. *Melville*, 74, Capt. P. Douglas, with flag of Adm. Sir P. Halkett. 16th: arr., H.M.S. *Cornwallis*, 74, with flag of Sir E. Paget. 20th: rem., H.M.S. *Serpent*, 16.

KANGAROO ISLAND, *Australia*.—27th Dec.: arr., H.M.S. *Buffalo*.

KEDGEFEE.—8th March: arr., H.M.S. *Zebra*, from Trincomalee.

LISBON.—20th July: arr., H.M.S. *Hazard*, from Portsmouth.

MADEIRA.—23d June: arr., H.M.S. *Fair Rosamond*; sd., 25th, for Africa. 2d July: sd., H.M.S. *Larne*, 18, Com. Blake, for Madras. 17th: arr., H.M.S. *Seringapatam* and *Rodney*; sd., 19th.

MALTA.—7th July: arr., H.M.S. *Asia*, 84, Capt. W. Fisher, and *Russell*, 74, Capt. Sir W. H. Dillon. 16th: H.M.S. *Hermes*. 17th: H.M.S. *Confiance*, from Marseilles. 18th: H.M. brig *Rapid*, 10, Lieut.-Com. Hon. G. H. Kinnaird. 21st: H.M.S. *Castor*, 36, Captain E. Collier, from Constantinople, and sd., 24th, for Alexandria. 12th: sd., H.M. ships *Caledonia*, 120, Captain G. B. Martin, C.B.; *Rodney*, 92, Captain Hyde Parker; *Asia*, 84; *Vanguard*, Commander B. W. Walker, and *Russell*, 74; *Nautilus*, 10, Lieutenant W. Crooke, and *Medea*, St., Commodore Austen.

17th: H.M.St. *Spitfire*, for the Levant, and H. M. C. *Hind*, Lieutenant Codd. 18th: H.M.St. *Medea*, for Venice. 25th: H.M. brig *Rapid*, 10. In port—H.M.S. *Ceylon*, *Hermes*, and *Confiance*, (steamers.)

PORT ROYAL, Jamaica.---6th June: arr., *Serpent*, Com. Warren, from Chagres. 10th: arr., *Alban*, St., Lieut. Tinling, from Barbados. 31st May: sd., *Rainbow*, 28, Capt. Bennet, for Bermuda; *Racer*, Com. Hope, for Nassau. 24th; sd., *Champion*, 18, for Halifax. 25th: arr., *Rainbow* and *Carron*, St., Lieut. Owen. 21st: sd. H.M.S. *Madagascar*, Com. Sir J. Peyton, for Carthageua. 28th: arr., H.M.S. *Wanderer*, 16, Com. Bushby. Sd., H.M.S. *Pickle*, for Carthageua, and *Carron*. 12th June: sd. H.M.S. *Serpent*, for Halifax.

QUEBEC.---12th July: arr., H.M.S. *Vestal*, 26, Capt. Jones, and H.M.S. *Champion*, Com. King.

RIO JANEIRO.---16th May: arr., *Imogene*, from Bahia. 1st May: sd., *Stag*, for Valparaiso. 28th May: sd., *Imogene*, Captain Bruce, for Valparaiso.

SHIP HARBOUR, *Gulf of Canso*.---22d July: rem., H.M.S. *Vestal*, 26, Captain Jones, and *Champion*, 18, Com. King.

ST. HELENA.---28th May: arr., *Pelican*, Com. Popham, from Cape. 29th: sd. for Ascension.

SAN BLAS.---14th April: rem., H.M.S. *Rover*.

VALENCIA.---7th July: rem., *Barham*; sd., 9th. Arr., *Harlequin*, from Barcelona.

VERA CRUZ.--- 2d June: arr., *Madagascar*, Captain Sir J. Peyton.

OWEN'S SURVEY OF THE GAMBIA.—The charts by Captain Owen, of the Gambia, are excellent, and the directions given by Commander Belcher, and Mr. Burnett, late master of the *Sybille*, are also good. A buoy on the African knoll, and a lighthouse or good leading-marks upon Bird Island, that would take a ship up to the anchorage off Bathurst Town, would render the navigation of this river comparatively easy. During the Harmattan, the marks now on Bird Island are of little or no use. We scarcely saw them, and did not discover the "remarkable tree" named by Commander Belcher, until we had bore up for the anchorage.—*Extract of a Letter from Commander Craige, R.N., of H.M.S. Scout.*

TAMPICO.—In reference to the directions for making Tampico in the Columbian navigation, by Capt. M'Lellar, who recommends running in the latitude of the Bar, it is necessary to remark that the season of the norths should be considered, as at that time the current sets strongly to the southward, and at other seasons, as well as immediately after the norther, the current sets strongly to the northward; thus, according to circumstances, keep to the southward of the latitude of the bar. The hammock described as a boat broken up, is an excellent mark to know when you are to the northward, and Mount San Juan when to the southward.

ISLAND OF MALPELO, *Pacific*.—The months of February, March, and April, are fine between Island Gorgona and Panama. In the other months are continual rains, with heavy squalls, and very unhealthy weather. The island of Malpelo is laid down one degree west of its proper position, and is in latitude 4° S. The currents run violently to the southward and westward near it. It is a mere rock, without the slightest vegetation on it, and having several detached rocks off it without soundings. The rock on which the observations were made has forty fathoms alongside of it, and one hundred and ten at a quarter of a mile distance.

LIBERIA.—The colony of Liberia on the African coast, extends from about twenty miles north of Cape Mesurado to Cape Palmas, and belongs to societies formed in several of the United States. They have for their object the settlement of the free negroes, emancipated slaves of the States. The laws of some States, and the feelings in all, are hostile to the admission of the coloured race to the full enjoyment of the rights and privileges of white citizens. No settlement has yet been directly made by the federal government of the United States. They are all the result of societies formed into companies, and in some cases chartered by the government of the state to which they may respectively belong.

ALL persons connected with the peninsula, especially the commercial community, will no doubt be glad to learn that the long-wished-for post-office improvement, as regards the transmission of the mails by steam-vessels instead of sailing-packets, has at length been effected. The Government yesterday concluded a contract for this purpose with the Peninsular Steam Navigation Company. The packets are to sail from London every week, calling at Falmouth to take in the mails, whence they are to proceed to Vigo, where the bags for Madrid, and the greater part of the north and central portion of Spain will be landed. After remaining at Vigo three hours, they are to proceed to Oporto, where they remain three hours also, thence to Lisbon, remaining there forty-eight hours; thence to Cadiz, staying there six hours, when the letters for the south of Spain are to be landed; and lastly, to Gibraltar, where they are to remain forty-eight hours, performing the whole voyage from Falmouth to Gibraltar in nine days. By the adoption of this system, the packets between Falmouth and the Mediterranean, which now run once a month, will be wholly done away with; but government steam-vessels will ply once a fortnight between the different places in the Mediterranean and Gibraltar, and so be in time to meet the vessel from London at the last-named place. The importance of this improvement must be obvious to every one; not only as regards our relations with Spain, Portugal, and the Mediterranean, but also as concerns our East India possessions, for there is every reason to believe that the overland communications will be acted upon more regularly and energetically. Nothing can furnish a better proof of the superiority of transmitting the mails by steam instead of sailing-vessels, than the following recent occurrence. The Hope, government sailing-packet, which left Lisbon with the mail so long back as the 18th of June, only arrived at Falmouth on the 11th instant, making a passage of twenty-three days. The Iberia, steam-vessel, which sailed from Lisbon on the 8th, and Oporto on the 9th instant, reached Falmouth on the same day as the Hope; making a passage of three days from Lisbon, and only two days from Oporto. The Iberia completed her whole voyage from Falmouth to Oporto, Lisbon, Cadiz, Gibraltar, and Malaga, and back again, touching and staying at all these ports in eighteen days; being actually five days less than the Hope took to get from Lisbon to Falmouth. The letters for Madrid, which now occupy ten or twelve days in transmission from London, may go *via* Falmouth and Vigo in seven days. The

communication will not only be shortened, but the heavy postage paid to France will be saved. A considerable addition to the Post-Office revenue is also expected from the correspondence of the north of Europe with the Peninsula, which, instead of passing through France as heretofore, will be forwarded, it is thought, *via* Hamburgh to London, and thence to Spain and Portugal by steam. This improved conveyance, it is stated, will not cost half what it did before. The breaking up of the old establishment must of course occasion a considerable loss of patronage to the Admiralty ; but, notwithstanding which, it is but right to acknowledge that that department has been the most active in promoting the new system.—*Morning Chronicle, July 15th, 1837.*

AMONG other anecdotes which are in circulation, illustrative of the nobleness of mind and kindness of heart of our youthful Sovereign, one—which we have every reason to believe—strikes us as eminently beautiful. The first act of her Majesty's queenly life was writing a letter to Queen Adelaide, which breathed the purest and tenderest feelings of affection and condolence, and evinced a spirit of generosity and consideration which has obtained her Majesty golden opinions. Her Majesty wrote that letter spontaneously, and having finished it, folded and addressed it to "Her Majesty the Queen." Some one at hand, who had the right to make a remark, noticing this, mentioning that the superscription was not correct, for that the letter ought to be directed to her Majesty the Queen Dowager, "I am quite aware," said Queen Victoria, "of her Majesty's altered character, but I will not be the first person to remind her of it."

EXTRACT FROM THE NOTES OF A TOURIST.—COAST OF
PEMBROKESHIRE, 1836.

THE coast of Pembrokeshire, from Milford Haven to Tenby, is almost a continuation of perpendicular cliffs, with indentations terminating in abrupt promontories and heads, as Linney, Crow, Flimston, Saddle-Hill, St. Govan, Stackpool, Old Castle, Lidstep, and Gilter. Also three islands, Sheep, near Linney Head, St. Margaret, and Caldly, off Gilter Point, which is about two miles from Tenby. There are likewise three insulated rocks of great height, standing out in the sea, but near the cliffs ; they are called the "Eligug Stacks," from sea-fowl of that name, which visit them in prodigious numbers to lay their eggs, and perform the office of incubation : they remain there until the young are able to fly, and provide for their own wants.

These stacks have a very picturesque appearance ; and altogether the coast presents as fine a specimen of stupendous rock scenery as can be imagined. Many of the heads and cliffs are three hundred feet in height, and the rocks of which they are composed, curiously laid in strata, mostly horizontal, or with very little dip, in many places as regular as if formed by art.

To the mariner, however, it is a most dangerous coast as a lee-shore, (which it becomes with the stormy S.W. gale,) there being but few places where it would be possible to effect a landing. There are several objects of curiosity on this line of coast, which may be con-

sidered interesting to the tourist,—such as the stacks already named, St. Govan's Chapel, with its well and ringing-stone, Manorbeer Castle, &c.

The latter end of June is the best time for visiting the stacks, as the birds are then in full number; they are of the Puffin species, and literally more than cover the rocks, as, for want of room, they stand upon each other's backs. They seldom fly over the land, although at times blown there; their domicile being just out of gunshot range from the main cliffs, the birds appear to be quite at their ease, sporting and enjoying themselves in their security. Their eggs are larger than those of the common domestic hen, and are curious on account of the manner in which they are marked and coloured, white, green, and brown, mottled, and streaked, and in patches of a dark shade; it is reported that no two have ever been seen exactly alike; they are esteemed as good food.

The principal stacks are those near Flimston Head, which is itself a remarkable place. On its summit there is a chasm, as if rent by some convulsion of nature: it is about forty feet wide, and three hundred feet deep to the level of the sea, and forming three sides of a square, quite perpendicular. In the front of the cliff are two apertures, a large arch, and a fissure nearly to the summit; through these the sea enters the chasm, and in blowing weather rushes up with violence, and foams over, whence its name of "the Caldron." In the tongue of land formed by the chasm, there are three openings, which also extend to the same depth, and have the same communication with the sea, which boils over them also. There is likewise on the cliff, the remains of an ancient encampment, consisting of three circumvallations of great depth.

About one mile and a half to the northward and westward of Flimston Head, is the other rock, standing out conspicuously from the shore, not far from Crow Head: it is called Penny-Bolt Stack, and is singular from its formation, which is somewhat circular, in distinct layers, and looks like an exceedingly perfect cheese-ring.

St. Govan's Head is about three miles to the south-eastward of Flimston, and is a bold promontory; near it, a little to the northward, in a rocky recess, stands the celebrated chapel, or cell of St. Govan, a recluse, of whom miraculous things are related. The descent to the cell is by ninety-eight steps; it is very small, with a mud floor: the fire-place seems to have been in one corner, as there is a recess in the rock with an aperture through it, probably to allow the escape of the smoke; there is also a tablet of stone fixed against the wall, which may be the remains of an altar, and on the opposite wall is a slab bearing date 1176.

Passing through the chapel, the wonderful well is gained by a descent of sixteen steps to the water, which is said to be a cure for all complaints and hurts! It is of an oily nature, but not of inviting appearance; the faith reposed in its efficacy is, however, truly astonishing; and doubtless, if cures are effected, such proceed as much from the operation of that particular feeling, as from any healing property of the fluid: all the peasantry of the neighbourhood are firmly rooted in the belief of its efficacy.

The village of Basteston is about a mile inland from it: and it is

not much more than two from Stackpool Court, the seat of Lord Cawdor.

Near St. Govan's Well is a curiosity that attracts the attention of the tourist: it is a fragment of rock, called the "ringing-stone," from its emitting a sound like that of a bell when struck; it appears to be of the same description of rock as the surrounding cliffs are composed of, to which it probably was formerly attached. Hundreds of others lay scattered around, but none of these have the property of "ringing:" the sound is said to be emitted in consequence of the stone being perfectly solid, without the slightest crack or flaw. Whether this may be the true cause, or whether the stone, may not contain a portion of metal, remains a point for inquiry; the fact is, however, as above stated, and, as usual in matters of this sort, a wondrous tale belongs to it!

Near St. Govan's and to the northward of the chapel, is a chasm, running directly inland, as deep as that of Flimston, but not so wide; it is called the "Hunter's Leap," from a story told here of a Mr. Adams having leaped across it, when his horse ran away with him, whilst hunting near the spot. There are also close to it two pits, similar to the "Caldron," through which the sea is sometimes thrown up; they are named Basteston Meer.

Manorbeer Castle is a fine ruin, between St. Govan's and Tenby, from which it is distant five miles; it is near, and gives name to, Old Castle Head. The walls are very perfect, but the interior a complete ruin; there are three walls, loop-holed, with a narrow court between each, on the accessible side. The village is small but neat.

RUSSIAN EXPEDITION TO NOVA ZEMBLA.

WE understand that an expedition is now fitting out at Archangel by the Russian Government, for the purpose of surveying the coasts of Novaya Zemlya, (or Nova Zembla,) and the seas around it.

It appears to be doubtful, notwithstanding the assertions of persons engaged in the Seal Fishery on the West Coast of Novaya Zemlya, whether the north point of that island has ever been doubled by the Russians. To effect this object and to ascertain the exact constitution of the Island, which is thought to consist of an infinite number of insulated parts, is the main object of the present enterprize.

The first expeditions of the last hundred years that have sailed with this object from the Port of Archangel, were dispatched by the Russian government in the years 1820 to 1823, during which time four or five successive attempts were made to coast round Novaya Zemlya. The greatest distance reached in these attempts appears to have been 77° north latitude, from whence, the navigators being on the western side of the land, saw its northern extreme over wide fields of impenetrable ice.

In the year 1832 a sixth expedition was dispatched under the protection and with the assistance of the Russian government, by a merchant of Archangel, named Brundt, in conjunction with a person at that time in the employ of the Russians. The objects of this expedition were manifold. The orders given to the commanders of the vessels employed, were to explore the hitherto unfrequented parts, but

the avowed ulterior views of the authors of the expedition were to procure pecuniary benefit from fishing and hunting, and to obtain from government an exclusive right of trade in such parts as their navigators might explore.

The first vessel returned in the same year, having made no discoveries, but with a considerable cargo of seal oil and morse teeth, the value of which is believed to have defrayed about one-half of the whole expenses incurred in fitting out the expedition.

Of the second vessel no accounts have been received since her departure, and there is every reason to believe that she has been lost in the ice with all her crew.

The third vessel being driven by ice into Kamenkaya bay, the crew wintered ashore, the vessel being blocked in by thick ice, although even so late as the month of November, the commander of the vessel could perceive that the straits and sea of Kora were quite open.

In the following month of July the vessel passed through the long strait called Matochkin Spar, which separates the north from the south part of Nova Zembla, and after sailing round and surveying the southern part was wrecked near the river Pechora. The crew reached Archangel by land.

In 1834, a seventh expedition was dispatched by the Russian government, consisting of two vessels under the command of experienced officers. Finding that the ice prevented their progress to the northward of the Matochkin Spar, the commander of one of the vessels landed, and went on foot about one hundred miles along the east coast of the northern part of the island, where finding a deep and broad bay with high shores, he returned to his vessel.

One of the ships was hemmed in and crushed by the ice, and the other returned in the following year (1835) to Archangel.

The expedition at present fitting-out will proceed to the west coast of Nova Zembla, principally with a view to enable two professors of natural history to pursue their researches in the botanical productions of the island, and the mollusca and cetacea of its shores. The commander will receive orders to push as far as possible to the northward on both coasts and to complete if possible the survey of the whole island.

The only practical benefits hitherto derived from these expeditions have been the survey of the seas lying between Archangel and Nova Zembla, (by which the general knowledge of the navigation of the White Sea has been improved,) and new ground opened for the fisheries of Archangel.

THE LATE COMMANDER MUDGE, R.N.—In our usual obituary we have recorded the death of this officer, whose valuable qualities had been long known in the scientific branch of his profession, whose name through his relative, the late General Mudge, was connected with the first scientific work of his country, and whose amiable and generous mind had endeared him to those who knew him. The long continuance of a severe cold, arising from exposure on the Irish coast, produced those effects which a constitution, weakened by similar service on the coast of Africa, was unable to withstand and was the original cause of

his death. His remains were consigned to their last resting-place, in the ground of the cathedral at Howth; attended by the officers and men of the ordnance, also those of his own department, and those of the coast-guard, on the 24th July, with the usual military honours. His unhappy widow and six children are left to lament their loss.

WATERING PLACES IN AMERICA.—Several of these marks of fashion are now established in the United States, especially where the sulphurated waters afford an apology for the rustication of New York and Philadelphia cockneys. A recent author under the name of "Peter Prolix," has written a lively account of them, of which in Van Diemen's land they have as yet no incipient parallel, except the infant George Town (or "Georgeton," as we suppose the Letters-patent call it) now rising into eminence with the growth of Port Philip. The attractions of these places of temporary retirement are great and peculiar.

"The cabins (says the writer) are in general comfortable, and the bedding clean; some suspicion of fleas I confess to, but I detected no bugs, which are perhaps kept away by the nature of the water, for Virgil says, in the fifth book of his Georgics,

'Fœtidum in aqua non gaudet sulphurea bedbug;'

which, being translated into the Virginia vernacular, means, 'the stinking chinch does not like sulphur-water.' The last word of the above quoted hexameter I take to be an ancient Latin neuter indeclinable noun."

"The customs here are very liberal towards the guests. A good ball-room and excellent band of music are in occupation every evening, free to all the boarders, without charge. Nobody at the public table is expected to drink or pay for any wine or other liquors *he does not want*; and any body can have fire enough in his cabin to roast an ox, by saying, with Horace, 'Boy, (meaning old uncle Duncan,) fetch me some wood: 'Puer, pone lignum super foco.' Uncle Duncan is a highly respectable yellow character, with a hawk's eye and an eagle's nose, and perhaps a drop of the imperial blood of Powhatan, who makes his bivouac among the trees on the hill in the rear of Alabama row, under a *slantindicular* shed, lighted up most romantically by a large watch-fire; and if you want any thing, you have only to open your postern and screech, 'Duncan! oh, Duncan!'

"We vapoured (he tells us at setting out) across the Peninsula in an hour, and were paddled down the Chesapeake in the Carroll of Carrollton—a spacious, rapid, and very clean boat. An excellent practice obtains in this boat: one or two servants are constantly employed in wiping up the extract of tobacco, with which our southern friends are wont to describe parabolic curves in every direction: touching which singular customs, the refined Trollope has some pertinent remarks. This is done by the servants with a view of keeping the skirts of the ladies clear of this great offence; and *ne quid nigh Miss*, as Terence hath it."

STEAM navigation is advancing wonderfully in the Bosphorus. Besides the seven French steamers about to commence running between Marseilles and Constantinople, there are nine new German steam-vessels, and as many English, now in preparation, and the Turks have likewise some of their own in motion in the neighbouring seas.

THE GREAT WESTERN.—*Steam Ship.*

WE do not often recount the proceedings of convivial meetings, but we have no doubt that a record of the launch of one of the vessels at Bristol, destined to try the power of steam at sea, alluded to in a preceding paper, on a scale greater than yet applied in this country, together with the sentiments which were expressed on that occasion, will be acceptable to our readers: with this impression we extract the following account from the *Bristol Mirror*. In our third number, p. 194, for the present year, we announced the building of this vessel with that at London, and having there given their respective dimensions, we shall only repeat our best wishes for their success.

Launch of the Steam Ship.—“The Great Western.”

THE launch of this splendid ship, built by Messrs. Patterson and Mercer, for a company of individuals who are desirous of giving effect to the enterprising spirit at present existing for improving the port of Bristol, was witnessed with delight by an immense crowd of spectators on Wednesday morning, 19th July. Great anxiety had been manifested for several days for the completion of the vessel, so that the public might not be disappointed. At break of day numerous shipwrights were at work, and early in the morning thousands had congregated to view the launch, which was appointed to take place at half-past nine; by that time the “St. George,” East Indiaman, the “Benledi,” steam-packet, the “Clifton,” and other vessels, were crowded with spectators, and the yard of Messrs. Patterson and Mercer, in which was erected a large stage for the accommodation of the directors and their friends, as also the yard of Messrs. Beeston and Wooley, were thronged with ladies and gentlemen, who were admitted by tickets. The *coup d’aîl* from the dock-yard was most striking—the shore was literally covered with spectators; the ships were all dressed in colours, with their yards manned; the Cathedral and St. Augustine’s church in the back ground led the eye up to Brandon-hill, at the summit of which great numbers were to be seen; the atmosphere was serene but warm, and the numerous boats plying on the river rendered the whole a most animating scene. Bands of music continued to play at intervals.

At five minutes past ten, the dog shores having been struck away, the screw was applied, and a general shout arose—“She moves;” which indeed she did, in the most majestic and graceful manner. For the moment all was hushed, and the immense multitude suspended their breaths

whilst the beautiful and magnificent vessel glided into the water; not the least wavering or irregular motion occurred. As she left the shore, Lieut. Claxton performed the usual ceremony of dashing a demijohn of Madeira upon the figure-head of Neptune at the bows, and she was named by Mrs. Miles, who was in the adjoining shed, “*The Great Western*,” and who also cracked her bottle against the side. At the calculated distance she was checked by a chain cable, and brought up within a few feet of the opposite shore, without the smallest accident. The launch being concluded, loud, spontaneous, and continued cheers took place, and the immense crowd began to disperse.

THE BANQUET.

At half-past eleven, the vessel having been brought to her station, and a temporary platform been completed, Mr. Maze proceeded to the shed and conducted Mrs. Miles, who was followed by numerous ladies and gentlemen, to the cabin of the new vessel. On descending, the eye gazed with astonishment and delight at the lusty timbers and prodigious length of the vessel; and next at the precision and elegance with which three long tables, and a horse-shoe table, the form of the stern abreast, were laid, to accommodate about three hundred guests at a sumptuous *dejeuner a la fourchette*, including a profusion of Champaign, ices, &c. The principal table was surmounted by a large beautiful crown, formed of roses, &c. Even the plates were identified with the scene, being inscribed in a semi-circle, “Great Western Steam Ship,” and a drawing of the vessel. The viands, including the fruit, &c., were excellent, and of a superior description, with tea and coffee for those whose taste did not prompt them to partake of Champaign.

Peter Maze, Esq., presided at the centre table as chairman; having Mrs. Miles on his right, and Wm. Miles, Esq., M.P. for Somerset; and on his left James George, Esq., the Mayor. Among the company we observed some member of almost every distinguished family in the city and neighbourhood: including Col. Whetham; Majors Worrall and Kington; Captains Canville and Shute; Messrs. Walker, Bailey, Worrall, Acramans, Kings, Savage, Claxton, Guppy, Gibbs, Ricketts, Osborn, Jacques, Robinson, and their respective ladies; as also Mr. Briggs, of Alexandria; the American Consul; (Mr. Dennison;) Mr. J. B. Clarke, the projector of the Cotton Manufactory; Mr. Brunel; some Naval Officers; Gen. Sir Wm. Davey, and a considerable number of ladies and gentlemen from Bath, with many of our most respectable fellow-citizens. After the Rev. John Taylor had asked a blessing, the company proceeded to do justice to the entertainment set before them. In due time the chairman rose and said he had great pleasure in proposing, as the first toast, the health of

"Our most gracious Queen—Victoria."
—(cheers.)

"Dowager Queen Adelaide, and the rest of the Royal Family."

The chairman then said, there were many toasts he was obliged to waive, and proceed at once to those most apposite to the occasion, as this vessel was particularly designed to trade between the port of Bristol and that of New York, and thereby to increase our connexion with America, he thought it appropriate that he should give the health of "the President of the United States."—(Cheers.)

Mr. Dennison, the American Consul, said—"Ladies and gentlemen, as the representative of the United States in this part of England, I beg leave most cordially to thank you for the honour done to the President by drinking his health; and I now beg to propose as a toast, 'success to the Great Western Steam Ship Company.'"—(Loud and continued cheers.)

The chairman said, that he felt particularly happy in proposing the health of a lady, to whom all present were highly indebted for her attendance that day, and which would therefore be received with a lively sense of gratitude, as the lady who stood god-mother to our first little bantling. He was sure he was anticipated in naming Mrs. Miles, who had put off a journey into Devonshire for ten or twelve days, in order to be present at the launch. He called on gentlemen to fill a bumper on the occasion; he was

one of those who were ready to pay tribute where tribute was due, and he doubted not that his example would be followed,—*"The health of Mrs. Miles."*—(Drank with enthusiasm.)

William Miles, Esq., rose amidst great applause, and said, that as it was not the custom of this country for ladies to return thanks on their healths being drunk, he begged to assure them, on the part of Mrs. Miles, that she fully appreciated so cordial an expression of their approbation. But he must be permitted on his own part to say, that he could not allow a toast so kindly proposed by the Chairman, and so feelingly responded to by the company, to pass unacknowledged. He could assure them, that he spoke the sentiments of Mrs. Miles, in stating, that it gave her much pleasure to have been called on to name the Great Western Steam Ship, which, in connexion with the Great Western Railway, he viewed as a part of the great system of commercial enterprize which was destined to be established between this country and the American Continent. It might also be considered as a link in the chain which may be said to connect America as well as Ireland with Great Britain, particularly with Bristol and the Western District, thereby increasing the prosperity, and strengthening the bonds of amity and union which already exist between these countries. He was particularly happy to hear the toast of the President of the United States proposed so soon after that of the Queen. It was pleasant to observe, that those differences which existed between two nations, which could only be considered as brethren, had given way, and that any little feelings of hostility which might have remained, were rapidly diminishing; so that Americans and Englishmen now only remembered that they sprung from one common stock, and that the whole of the inhabitants of both nations were brethren. It would be unnecessary for him to say more than that he hoped and trusted the present undertaking would be considered as the first of a class which would lead to further exertions. They had long wanted some little spur to enterprize. This had been recently given by the Chairman, in connexion with other gentlemen, and which he had no doubt would be responded to. He contemplated the Cotton Manufactory and the Great Western Railway, as not only beneficial to Bristol, and likely to place it in a most pre-eminant station, but as forming an era in the commercial history of the country.—(Applause.)

The Chairman said the last toast he

had the honour of proposing, was the health of a lady; but as ladies were never intended to be alone he would beg leave to accompany the toast with that of a gentleman, of great distinction among them, and who was always ready, on all occasions, to render his services to the inhabitants of this city. It was "the Mayor of Bristol" he would beg to propose, with feelings of thankfulness and gratitude to him for undertaking the office.—(Cheers.)

The Mayor returned his most cordial thanks for the honour conferred upon him, and begged to express a wish, to which he was sure they would all respond, that the magnificent ship in which they were regaling, might carry out on her first voyage as numerous a company as was then present. He begged to propose "the health of their worthy Chairman." (Loud cheering.)

Mr. Maze could not express himself sufficiently grateful for the distinguished honour conferred upon him. He was sorry to say he never could repay the obligations he was under to them; indeed he was insolvent, and could only offer a composition—of gratitude; he hoped, however, that the ladies would accept of his small dividend. It was indeed a proud day for Bristol, and he did not wonder at the multitude that had assembled to witness the sight. One of the main springs for effecting an improvement of the port of Bristol, was a facility of communication with the United States. If they made it easy and convenient for people to travel backward and forward, the work of improvement was commenced. Some people, when speaking of Bristol, used to say that it never advanced, that it stood still whilst other towns went on: but now he hoped that they would be able to say, that not only it did not go backward, that it did not stand still, but that it went forward, ay, that it went even foremost.—(Cheers.)—It gave him much pleasure that he had been instrumental, in a small degree, in producing this change. He had used the little influence he possessed to urge this forward course—he had subscribed to the present ship, he had subscribed to the Cotton-factory, and to the Railway from principle, and not from a selfish feeling. When they saw other places proceeding with long strides in a course of prosperity, were they to remain dormant? He would say no; it was not their place to follow, but to take the lead, and on the present occasion he was happy to say that was the case. There was then no vessel in the kingdom of such large dimensions as theirs. It was true, that another ship of the kind

was building at Liverpool, and one at London, but neither was so forward as that built and now launched at Bristol. They were therefore the first, and he hoped they would keep their place. It gave him great pleasure to contemplate the happy countenances of those employed on the vessel—the rich could not do without the poor, nor the poor without the rich: upwards of 8,000*l.* had been paid in wages on this vessel; one hundred and eighty workmen had been employed on her; when people were idle they were mischievous; when engaged in useful labour they were peaceful. Bristol used to be called the second city in the kingdom; and he sincerely believed it would very soon be so again. A great number of ladies had honoured them to-day; many ladies encouraged their endeavours; in this they were right, if young men were encouraged to get forward they were sure to make good husbands.—(Cheers.)—He begged to give as a toast, "The health of the ladies who had graced the ship with their presence."—(Cheers.)

W. Miles, Esq., said that having returned thanks for one lady, he was not presumptuous enough to return the same for all; he only rose to propose as a toast, "The Deputy Chairman and the Board of Directors."—(Cheers.)

Thomas Kington, Esq., said he rose, with a feeling of very considerable diffidence, to return thanks for the flattering and enthusiastic manner in which the last toast had been received. He could have wished that this pleasing task had devolved on any other director more competent than himself, being well acquainted with his own inadequacy to do justice in the expression of their thanks. He could allude to events in the performance of their duties in which their worthy Chairman had, in some degree, smoothed the way and got rid of some difficulties. He could only say, on behalf of the other Directors, that they were anxious to follow in the steps of their worthy and excellent Chairman, who by his zeal and unceasing attention to the interests of the Company, had secured their entire confidence. It was their ambition to do what they could to realize the intentions of the Company, for improving the communication, not only between this city and America, but with the West India colonies in general. He was very sensible of the honour that had been conferred upon him, in being selected to fill the situation which he then so unworthily occupied; and this feeling was greatly enhanced by the auspicious events of the day, evidencing,

as they did, the general and increasing interest which was taken in the prosperity of their undertaking, and in the character which their city claimed of originating this novel and important experiment. When he reflected on the nature of the work in which the Committee had been engaged, when he regarded the speaking results of that work, and the gigantic capabilities of the machinery then preparing in one of the first engineering establishments in the world, he might confidently affirm that whatever human skill and human vigour could do, would be effected in the completion of this splendid vessel. They would allow him at the same time to observe, that it did not become them to rest on the means, however powerful, or however well adapted to the object in view. It was their duty and privilege to entreat the God of means to bless the undertaking, and he was sure they would agree with him in the propriety of that sentiment. Before he sat down, he could not but charge himself with an act of presumption in returning thanks for an individual then present, whom he should emphatically call the main-spring, the sheet-anchor of the undertaking, to whom they were much indebted for the comfortable accommodation which they were then enjoying, and who had shown, both by his words and actions, that he had the interests of this city deeply at heart. He felt that he should be out of order in directly introducing his name to the notice of the company, but he would leave him in their hands, confident that his acknowledged merits would be duly recognized. [The name of Mr. Christopher Claxton was here shouted by the company.] Mr. Kington added that he regretted the absence of some of the Directors, and particularly of Mr. Robert Bright, and concluded by returning thanks on their behalf for the honour that had been conferred upon them.—(Applause.)

Lieut. Claxton's health was then drank with enthusiasm, and the Chairman observed, that if it were not for Mr. Claxton they should not have been in the state of forwardness that they then were; the whole of the management rested upon him, and such was his attention to it and his public duties together, that he (the Chairman) knew not where he took his rest. The anxiety he felt for the welfare of the concern, could alone enable him to continue his exertions, and he (Mr. Maze) hoped that the expression of their obligation for his services would be gratifying to his feelings.—(Long continued cheering.)

Lieut. Claxton felt himself over-

whelmed at their manifestation of kindness. He had been most anxious, to the last moment, for the successful completion of the undertaking. Mr. Brunel, Mr. Guppy, Mr. Patterson, and himself, had acted as a sort of a Committee of Superintendence, and he was bound to say, that Mr. Patterson was always ready to listen to their suggestions; and if he thought them worthy of consideration, to give his attention to them, and in many instances to adopt them. But let it not be understood that his object was to detract in the least from the merit of that gentleman; he thought, indeed, the statement of that fact rather tended to add to it, than otherwise. He felt bound to say that the whole merit of erecting this splendid fabric—for such she was, from the time of drafting the lines, to the moment of her kissing the waters in the scientific way she had done that morning, was Mr. Patterson's own.—(Cheers.)—For himself, he had given his utmost attention as a practical man, more than a theoretical one, bringing to the Committee the aid of what little nautical knowledge he possessed, and on some occasions, perhaps, with effect. His friends for instance, to whom he had alluded, were anxious to cut down the cabin windows, which he was ready to admit, as they all might see stood very high; they wanted them in fact, like those drawing-room windows; but he took the liberty of reminding them, that there was water outside which was sometimes very uneven in its surface, and unlike the generality of lawns; and strange as it may appear, Mr. Patterson, their builder, agreed with him in opinion, that it would be unsafe and improper.—(Loud laughter.)—The vessel was fastened, in a great measure, after a novel fashion. They might observe, if they would look round, that the whole of her upper works were secured with nuts and screws; the bottoms of ships seldom gave below the water line, but it was by no means uncommon, particularly for ships subject to frequent extremes of climate, to yield and shrink; but they actually had the power of tightening her up at pleasure if they wished it. He was aware that some of the reporters of the London press were present; he would therefore be particular in what he was about to say. They would observe, that only one-third of the length of the ship was in use, and he could inform them that 300 were comfortably seated; the seats indeed, as his eye told him, as he glanced behind this row of ladies—(loud laughter)—were much too broad; and the tables were four feet wide; still the passages

were ample; but if the tables, the seats, and the passages had been contracted, there would have been room for at least one table more, making accommodation for 400 in that length. If a sufficient number of tickets had been taken, up to the date advertised, it was intended to continue a temporary deck over the engine space to the fore-cabin, where the band were seated; and in the whole length, he believed from 1,000 to 1,200 might have been conveniently accommodated. (Hear, hear.)—It had been their object to do as much of the work of the ship as possible in the city of Bristol, and only in two cases had they departed from their intentions; the one in respect to some upholstery work at Bath, where about one-fourth of the subscribers resided,—(Hear, hear.)—and the other he was bound to admit, the most important one, in the case of the engines. As much had been said on this subject, he would, if they did not think he was encroaching too much on their time, state how the matter stood.—(Hear, hear.)—He, for one, was well aware of the efficiency of the engines made at the manufactory of Messrs. Winwood. He had it from those who were interested, and capable of judging, that in all cases they worked admirably. But they had not made, he believed, more than ten or a dozen pairs; and, except in one or two instances, those of not very large dimensions. The Directors, one and all, were most anxious to have had the engines of Messrs. Winwood, but he for one, and he believed he was expressing the opinions of the others also, felt that if any accident whatever had happened to the engines, or even if there had been the same falling off in respect to the accomplishing the work within the time agreed upon, the shareholders might very reasonably have turned round upon the Directors, and asked why they intrusted machinery of such calibre to parties who had made so few engines, when others at Liverpool, Glasgow, and London had made, perhaps ten times their number, and a great proportion of them of the largest dimensions at present in use. For these reasons they went to Messrs. Maudslay and Field, the latter of whom, as a practical engineer, stood at the very tip top of his profession. That gentleman, he was happy to say, was present, and he believed he would bear him out in the assertion, that when he took the contract, he did not anticipate all the difficulties he has had to contend with in carrying it through. It was true, they were behind hand, as the engines were to have been ready for the vessel to have made a

voyage to New York in August. She could not now be ready before November. While on this subject, he felt bound to say that Mr. Patterson also had not correctly, as to time, estimated the stupendous nature of his performance. Nothing, however, that ever went to sea could be more firmly or strongly built; he would not, however, say as Homagee Bomagee, the celebrated Calcutta builder of his Majesty's ships, the Ganges and Asia, did, "that English ships get upon rock, go to pieces; my ships get upon rock, by gum the rock have the worse of it."—(Much laughter.)—Mr. Claxton said, his observations he thought could not be more appropriately followed than by drinking "Success to Naval Science;" and he had a distinguished officer in his eye, who had lately commanded a seventy-four in the Mediterranean, and had been for three years in company with the *Medea*, (until the *Gorgon* was built, the largest steamer in the service) the engines of which vessel were also made by Messrs. Maudslay and Field; as it was to the point, Capt. Dacres would, perhaps, favour the company with his opinion of both the sailing and steaming qualities of their vessel.

Captain Dacres said he was highly satisfied of the capabilities of the vessel. He had witnessed, during a cruise of three years in the Mediterranean, the working of a steam-packet of less power, and felt convinced that she would answer the expectations of her proprietors. When there was any wind, the *Medea* under sail, alone managed to keep company with the Fleet; she worked as well as any of the line of battle ships in and out of the harbours, and at times even held the celebrated *Vernon* a tug. He had inspected this vessel, and had since been in company with Sir William Symonds, Surveyor General of the Navy, and some other leading directors of the King's Dock-yards, who had also inspected her, and they remarked, that they were really astonished of their own work when they saw the way in which she was put out of hand.—(Applause.)

Lieut. Claxton then said, after what they had heard, and what they had witnessed, on looking around, he begged to propose the health of Mr. Patterson, with three times three. (Great cheering.)

The toast was enthusiastically drunk, and was followed by the healths of—

"Mr. Brunel,"

"Mr. J. B. Clarke, the Projector of the Cotton Factory,"

"Lieut. Hoskins, Captain of the Great Western,"

when the company broke up, after spending a delightful morning.

In the evening, Mr. Peter Maze entertained at a splendid dinner, about thirty of the principal gentlemen connected with the Great Western Steam Ship Company, the Cotton Company, and other public undertakings. We are informed by a friend who was present, that it would have delighted the heart of any Bristolian to have heard the speeches by men, who, one and all, seemed to have but one great object in view; and that—the improvement of our port and the increase of its trade.

Mr. William Miles most feelingly alluded to the fortunes of his family having been made through the port of Bristol; for himself, he observed, he should be the most ungrateful of men, if he did not rejoice in everything that tended to increase that prosperity; and in these sentiments, he could answer for the concurrence of his father, and the rest of his family.

No accident occurred during the

At the conclusion of an account of the Regatta, at Bristol, which was celebrated on board the GREAT WESTERN, by a sumptuous entertainment on the day after her launch, we find the following paragraph, which we consider sufficiently important to preserve. No doubt the people of Bristol must have been much amused at the *enterprising* commercial character bestowed on them by our contemporary.

We have not space to give the whole of the speeches that followed the toasts, but we cannot refrain from alluding to one by the chairman, Lieut. Claxton, R.N., in proposing the healths of the Directors of the Great Western Steam Ship Company, exclusive of himself. He said we had been abused as an inferior port; and an author, whose works, strange to say, had been adopted by the editor of the *United Service Journal*, under the title of a "Land Cruise of a Naval Officer," had stated that Bristol was a place which once had some sugar trade, but that it was all gone, and there was nothing now left but a trade in timber and pigs; and that there

launch, but unfortunately two men were injured early in the morning from the falling of a large piece of timber, one of whom was obliged to have his leg amputated.

We were highly gratified with the arrangements for entertaining the company; they were in every respect ample and complete. For the enjoyment the company derived in this respect, they were indebted to the spirit and energy of Mr. Claxton, who, either in matters of business or pleasure, is always ready to contribute his exertions for the benefit of the inhabitants of Bristol, and we know no man more competent to take part in an undertaking where the superintendence and co-operation of a master mind is required, than Mr. Claxton. We hope the time is not far distant, when this gentleman's energies will be suitably and profitably employed: none of his friends will hail such an event with greater delight than we of the *Bristol Mirror*.

was a large steamer building which was intended to carry 2,000 pigs upon deck. When he told them that the naval officer alluded to the vessel they were then in, intended to accomplish a great object, however viewed, they would agree with him that this naval bird of passage was not a little out in his reckoning. He did not condescend to inform them how they still contrived to pay annually about a million and a quarter of custom-house duties, and to maintain our station as No. 3, in the returns with a trade in timber that paid little comparative duty, and pigs that paid none at all.—*Bristol Mirror*.

SOME RECOLLECTIONS OF THE LAST DAYS OF HIS LATE MAJESTY.

THE following narrative of the progress of his late Majesty's fatal illness, and the pious resignation of the King, evinced during that solemn period, will be read with deep interest by our naval friends.

Though a slight decline of strength had been perceptible to the immediate attendants of our lamented King at the commencement of the year, yet it was not till the month of May that the state of his Maje-

ty's health excited any serious apprehensions. On the 17th of that month his Majesty held a levee, but on his return to Windsor Castle showed great signs of debility and exhaustion, and oppression of breathing, in consequence of which he had considerable difficulty in ascending the staircase; and, when he had reached the corridor, was under the necessity of resting on the nearest sofa.

Though the King had experienced very considerable oppression during the night, yet his Majesty appeared refreshed, and was considered better the next morning, Thursday, May 18, and was not prevented from going to St. James's to hold a drawing-room, which had been appointed for that day. On these occasions, the last in which his Majesty appeared in public, he sat down; but this deviation from his usual practice did not excite so much alarm as the traces of sickness visible in his countenance. His debility, however, notwithstanding the exertions of the day, on reaching Windsor Castle, was not so great on this as on the preceding evening, and a slight improvement the following morning revived the hopes and spirits of his Majesty's anxious friends.

This day, Friday, was the anniversary of the battle of La Hague, and, by command of his Majesty, several officers of distinction resident in the neighbourhood, together with the field-officers of the garrison, had been invited to dinner. In the course of the evening, the King detailed with great minuteness the causes, the progress, and consequences of the different naval wars in which this country had been engaged during the last and the preceding century, and gave, perhaps, greater proof on that than on any occasion, of the extraordinary accuracy of his memory, and of his intimate acquaintance with English history. His Majesty's voice, with the exception of one or two moments of oppressive breathing, was very strong and clear, but no one present could fail to entertain apprehensions as to the effects of this exertion.

The next day, Saturday, May 20, his Majesty continued to suffer from the same distressing symptoms. At breakfast and luncheon his appetite, which had been gradually declining, altogether failed, and at the latter meal he fell back in his chair with a sensation of faintness, to which several persons alluded with strong expressions of alarm. His Majesty on leaving the white drawing-room sat down in the corridor evidently feeble and exhausted. He did not leave the castle this afternoon. At dinner his Majesty was afflicted by a similar seizure, and to prevent increasing faintness the Duchess of Gloucester, who was seated next to him, bathed his forehead and temples with eau-de-Cologne. His Majesty rallied in the evening, but it was not till ten that he consented, in compliance with the Queen's request, to abandon his intention of going to St. James's the following morning to be present at the re-opening of the Chapel Royal.

The King retired to bed at his usual hour of eleven, labouring under manifest indisposition. This was the last time his Majesty appeared in the drawing-room. The next morning increasing indisposition confined him to his private apartments, which he never quitted during the continuance of his fatal malady.

The state of his Majesty's health now excited much and well-founded alarm. Sir H. Halford and Dr. Chambers were sent for; but as the

latter had no ostensible situation in the royal household it was thought advisable, in order to avoid causing any unnecessary alarm to the King to introduce him to his Majesty as the medical attendant of the Queen, who had at this time but very imperfectly recovered from a long and dangerous illness, on the ground that he wished to make a report of her Majesty's health. Dr. Chambers was most graciously received by the King, who did not hesitate to avail himself of his advice in his own case. The arrival, however, of Dr. Chambers at the Castle was so late, that this interview did not take place till the following morning.

It were needless to trace minutely the progress of the King's disease, the fluctuating nature of which produced constant alternations of hope and fear. On Monday, May 22, and the following morning, the King gave audiences to Lord Melbourne, Lord Hill, Lord Glenelg, and other ministers; but the unfavourable impression produced by the King's appearance, on all who were admitted to his presence, served but to extend the alarm now generally entertained. The next two days were passed uncomfortably, from the effects of this fatigue; but on Saturday, May, 27, his Majesty felt sufficiently strong to hold a council, and subsequently to give audience to all the Cabinet Ministers and officers of state by whom it was attended. That the King's debility had already made very rapid and alarming progress may be inferred from the fact that he had already lost the power of walking, and that it was now necessary for his medical attendant, Dr. Davies, to whom alone the King would entrust that duty, to wheel his Majesty in an easy chair into the council-room. The general languor and weakness which so strongly characterized the King's illness, though not aggravated by this exertion, did not diminish during the next week, and his Majesty's anxious relatives and friends were willing, in the absence of any very active disease, to ascribe the continuance of these distressing symptoms to the hot weather which then prevailed, and which had frequently been known to produce at this season, in former years, a very marked effect on his Majesty's constitution.

The King had looked forward with pleasure to the assembling of a large party, whom he had invited to Windsor Castle to be present at the Eton regatta, June 5, and at the Ascot races, which immediately followed. In the afternoon of this day an unfavourable change in the King's state was evident to his attendants. With his usual benevolent feeling, he still, for the sake of others, took an interest in those amusements in which he could not personally participate. Every order issued by the King bore evidence of his very kind consideration, even in the most minute particulars, for the comfort and convenience of his guests, and of the Eton boys, whose pleasure he was always anxious to promote.

Influenced by a similar feeling, so predominant in his Majesty's character, and so remarkably exemplified in the closing year of his life, the King expressed his special desire that the Queen should attend the races at Ascot; preferring rather to dispense with the great comfort of her Majesty's society, than that the public should experience any disappointment from the absence of the royal family.

However little in accordance with the painful state of her own anxious feelings such a scene might be, the Queen did not hesitate to

acquiesce in his Majesty's wishes. Her Majesty, therefore, drove to the course, but returned at the end of two hours to Windsor Castle, to resume her almost unceasing attendance on the King, and to find, alas! that even in that brief interval his Majesty had undergone much and unexpected suffering.

The next morning, Wednesday, June 7, Sir H. Halford and Dr. Chambers found the King weaker, but cordials supplied temporary strength and power to take nourishment, which supported him during the day. Nevertheless, the greatest gloom, and even the most melancholy forebodings, pervaded the party assembled in the castle, which were distressingly manifested, as it will doubtless with pain be remembered by all who were present at dinner on that day in St. George's Hall.

For some time previously, the King's medical attendants indulged the sanguine hope that his Majesty might derive considerable benefit from change of air. Many circumstances had conspired to prevent an earlier proposal of any plan which had reference to this object; but with the concurrence of the physicians, Sir H. Taylor submitted this day to his Majesty their wish that he should remove for a few weeks to Brighton, where, with the advantage of the sea air, he would enjoy every comfort requisite in his present enfeebled state. The King did not, as it was feared, express any disapprobation at the suggestion; on the contrary, he assented with pleasure to the arrangement, and expressed his hope that he might soon regain sufficient strength to undertake the journey. Preparations were accordingly made by his Majesty's command at the Pavilion. The kindness of the King's disposition was displayed even in the selection of the persons whom he appointed to attend him.

The state of his Majesty's health next morning (rendered worse by a sleepless night) was such as to damp any hope that might have been entertained with regard to his removal to Brighton. Increased difficulty of breathing, stoppage of the circulation, with the necessary consequences of coldness of the extremities, and swelling of the legs, were among the symptoms which could not fail to excite the fear that the King's situation had now become one of extreme danger. Under these circumstances, the party staying at the castle dispersed this morning, (Thursday, June 8,) in obedience to the Queen's wishes; and while grief and despondency reigned within the palace, the same feelings were quickly propagated among an affectionate and loyal people by the unexpected absence of the royal cortege from Ascot.

Contrary to expectation, the King passed a tranquil night. He was easier the next morning, but appeared very languid and feeble while transacting business with Sir Herbert Taylor, and his signatures of official papers were made with difficulty. His Majesty now, for the first time, consented that a bulletin should be issued, to allay, if possible, the anxiety which the public had long manifested. In the afternoon of this day his Majesty experienced great and instantaneous relief from medicines which produced very copious expectoration. The amendment was so decided and evident, as to inspire a hope that it might be more than temporary, and his Majesty was certainly enabled to pass the ensuing day without any distressing oppression of his breathing. For this alleviation of the pains, as well as for the more

tranquil rest that he enjoyed during two successive nights, the gratitude to the Almighty felt and expressed by his Majesty was truly edifying. He was frequently heard to give utterance to these sentiments, with eyes raised to heaven, in the most sincere and unaffected terms. His patience and cheerfulness had at all times excited the astonishment and admiration of all who had opportunity of witnessing them. No murmur ever escaped his lips, and often, in moments of the greatest suffering, (which was subsequently proved to have far exceeded what his physicians had reason to suspect,) he testified his grateful sense of the care and attention of all who approached him, and his regret that he should be the cause of imposing on them the duty of so much painful attendance.

At no period, from the commencement of the attack, had his Majesty been insensible to his critical state; but when he alluded to the subject, it was evident that any anxiety which he felt arose less from personal apprehension than from solicitude for the country, and from a contemplation of the embarrassment into which it might possibly be thrown by his early dissolution. It was to such reflections as these that his Majesty gave expression on the morning of the 16th, when he observed to the Queen, "I have had some quiet sleep; come and pray with me, and thank the Almighty for it." Her Majesty joined in this act of heartfelt devotion, and when the King had ceased, said, "And shall I not pray to the Almighty that you may have a good day?" To which his Majesty replied, "O, do! I wish I could live ten years for the sake of the country. I feel it my duty to keep well as long as I can."

On the morning of Sunday, the 11th, grateful for the refreshing rest which he had enjoyed, his Majesty's mind was impressed with the most pure devotional feelings. Seeing Lady Mary Fox occupied with a book, he inquired what she was reading, and being told that it was a prayer-book, his countenance beamed with pleasure, but he said nothing. After a considerable lapse of time the Queen asked whether it would be agreeable to him if she read the prayers to him. His Majesty answered, "O, yes! I should like it very much; but it will fatigue you." He then desired to be informed who preached that morning in the chapel of the castle; and when Lady Mary had ascertained, and told him that it was Mr. Wood who preached, he directed that he might be sent for. When Mr. Wood entered the room, the King said, "I will thank you, my dear sir, to read all the prayers till you come to the prayer for the church militant." By which words his Majesty intended to include the communion service, and all the other parts of the liturgy used in the celebration of public worship. It was equally an affecting and instructive lesson to observe the devout humility of his Majesty, fervently dwelling, as could be perceived from his manner and the intonation of his voice, on every passage which bore even the most remote application to his own circumstances. His mind seemed quite absorbed in the duty in which he was engaged, and to rise for a time superior to his bodily infirmities; for, during the whole service, his attention was undisturbed, and he experienced none of those fits of coughing and oppression which for some days past had formed an almost uninterrupted characteristic of his complaint. As Mr. Wood withdrew, his Majesty graciously expressed his thanks, and

afterwards said to the Queen—"It has been a great comfort to me." Nor was this a transitory feeling. To this pure and scriptural source of spiritual consolation his Majesty recurred with unfeigned gratitude; and on each day of the ensuing week did Lord Augustus Fitzclarence receive the King's commands to read to him the prayers either of the morning or evening service. On one of these occasions, when his Majesty was much reduced and exhausted, the Queen, fearful of causing any fatigue to him, inquired, hesitatingly, whether, unwell as he was, he should still like to have the prayers read to him? He replied, "O yes! beyond everything." Though very languid, and disposed to sleep from the effects of medicine, his Majesty repeated all the prayers. The fatal progress of the King's complaint was very visible during the three following days:—June 12th, 13th, and 14th. Nevertheless, on Tuesday, the 13th, his Majesty gave audience to his Hanoverian minister, Baron Ompteda, whom, contrary to the suggestions of his attendants, he had specially summoned on business connected with that kingdom, in the welfare of which he had never ceased to feel a truly paternal interest. On Wednesday, the 14th, his Majesty received a visit from the Duke of Cumberland.

The King's attention to his religious duties, and the great comfort which was inspired by their performance, have already been referred to. It will, therefore, create no surprise that his Majesty joyfully assented to the Queen's suggestion that he should receive the sacrament, or that he at once named the Archbishop of Canterbury as the person whom he wished to administer that holy rite. Sunday was the day affixed by the King for the discharge of this solemn duty; and a message was accordingly sent to his Grace, desiring his presence at Windsor Castle on the ensuing Saturday. The two intervening days were a period of great suffering to the King, whose illness more than once in that interval assumed the most alarming form, and in the evening of Friday excited apprehensions of his Majesty's immediate dissolution. The next morning, however, the King felt easier, and the most urgent symptoms had disappeared. In the usual course of business with Sir H. Taylor, he signed two public documents, though not without difficulty; but on every subject which was brought before him, his Majesty's power of perception was quick and accurate, and he anticipated with pleasure and thankfulness the approaching sacred duty of the morrow.

On the morning of Sunday, the 18th, though his Majesty's mental energies remained vigorous and unimpaired, a greater degree of bodily weakness was perceptible. He raised himself in his chair with greater difficulty than the day before, and required more aid and support in every movement. The expression of his countenance, however, was perhaps more satisfactory. He transacted business with Sir H. Taylor, and affixed his signature to four documents—the remission of a court-martial, two appointments of colonial judges, and a pardon to a condemned criminal. This was his Majesty's last act of sovereignty. Increasing debility prevented the repetition of a similar exertion; and thus, in the closing scene of his life, was beautifully and practically exemplified by an act of mercy, that spirit of benevolence and forgiveness which shone with such peculiar lustre in his Majesty's character, and was so strongly reflected in the uniform tenour of his reign.

It had been arranged, as has been already remarked, that the King should on this day receive the sacrament from the hands of the Archbishop of Canterbury; and when Sir Herbert left the room it appeared to the Queen that the most favourable time had arrived. The physicians, however, suggested to her Majesty the expediency of deferring the ceremony till the King should have in some degree recovered from his fatigue; but his Majesty had already experienced the blessed consolations of religion, and removed the doubts which his anxious attendants were entertaining, by eagerly desiring the Queen to send for the Archbishop, seeming, as it were, anxious to ratify the discharge of his earthly, by the performance of his spiritual, duties. His Grace promptly attended, attired in his robes, and at a quarter to eleven administered the sacrament to his Majesty and the Queen, Lady Mary Fox communicating at the same time. The King was very calm and collected—his faculties were quite clear, and he paid the greatest attention to the service, following it in the prayer-book, which lay on the table before him. His voice, indeed, failed, but his humble demeanour and uplifted eyes gave expression to the feeling of devotion and of gratitude to the Almighty which his faltering lips refused to utter.

The performance of this act of religion, and this public attestation of his communion with that church for the welfare and prosperity of which he had more than once during his illness ejaculated short but fervent prayers, was the source of great and manifest comfort to his Majesty.

Though the shorter form had been adopted by the Archbishop, his Majesty was, nevertheless, rather exhausted by the duration and solemnity of the ceremony; but as his Grace retired the King said, with that peculiar kindness of manner by which he was so much distinguished, and at the same time gently waving his hand and inclining his head, "God bless you—a thousand, thousand thanks!" There cannot be more certain evidence of the inward strength and satisfaction which the King derived from this office of religion than that, in spite of great physical exertion, his Majesty, after the lapse of an hour, again requested the attendance of the Archbishop, who, in compliance with the wishes of the Queen, read the prayers for the evening service with the happiest effect on the King's spirits. This being done, the Archbishop, naturally feeling the consequences of so much mental exertion on his Majesty's debilitated frame, was about to retire, when the King motioned to him to sit down at the table, on the opposite side of which he himself was seated. His Majesty was too weak to hold any conversation, but his spirits seemed soothed and comforted by the presence of the Archbishop, on whose venerable and benign countenance his Majesty's eye reposed with real pleasure.

The King at this interview stretched his hand across the table, and taking that of the Archbishop, pressed it fervently, saying, in a tone of voice which was audible only to the Queen, who was seated near his Majesty, "I am sure the Archbishop is one of those persons who pray for me." The afternoon of this day witnessed a still further diminution of his Majesty's strength, but in proportion to the decay of his bodily power was the increase of his spiritual hope and consolation. At nine o'clock in the evening, the Archbishop was again summoned by his Majesty's desire. The King was now still less able to

converse than on the last occasion ; but his Grace remained more than three-quarters of an hour, supplying by his presence the same comfort to the King, and receiving from his Majesty the same silent though expressive proof of his satisfaction and gratitude. At length, on the suggestion of the Queen, that it was already late, and the Archbishop might become fatigued, the King immediately signified his assent that he should retire ; and crossing his hands upon his breast, and inclining his head, said, as his Grace left the room, "God bless thee, dear, excellent, worthy man ; a thousand, thousand thanks."

The whole course of his Majesty's illness affords abundant proof, not only of his composure, his patience, and his resignation, but that even when under the pressure of great pain and suffering, his mind, far from being absorbed with the sad circumstances of his own situation, was often dwelling on subjects connected either with the affairs of this country or with the comfort and convenience of individuals.

His Majesty rose this morning with the recollection that this was the anniversary of the battle of Waterloo. As early as half-past eight he alluded to the circumstance, and said to Dr. Chambers, "Let me but live over this memorable day—I shall never live to see another sunset." Dr. Chambers said, "I hope your Majesty may live to see many." To which his Majesty replied in a phrase which he commonly employed, but the peculiar force of which those only who had the honour of being frequently admitted into his Majesty's society can fully appreciate,* "O, that is quite another thing."

A splendid entertainment, as is well known, has been always given on this day to the officers engaged in that glorious action, and since his accession to the throne his Majesty had himself honoured it with his presence. Under the present circumstances the Duke, naturally feeling unwilling to promote any scene of festivity, had sent Mr. Greville to request the King's commands, or at least to ascertain the wishes and opinion of the Queen.

[To be concluded.]

Law Proceedings.

VICE-CHANCELLOR'S COURT—MARCH 15.

GLASCOTT AND OTHERS v. LANG AND OTHERS.—BRIG MARGARET OGILVIE.

THE hearing of the arguments of counsel in this part-heard motion were resumed and concluded to-day. This was an application on behalf of the plaintiffs, who were mortgagees of a ship called the *Margaret Ogilvie*, for an injunction to restrain the defendants from further proceeding in a suit which they (the defendants) instituted in the Court of Admiralty to recover a sum of £500, upon a bottomry-bond, which had been effected upon that vessel by the master of her, at *Tricste*, in 1836. The bill in this case was filed for the purpose of

* It was usually employed by his Majesty to express his dissent or incredulity with regard to any subject under discussion.

having that bottomry bond delivered up to be cancelled, the plaintiffs alleging by their bill that it was concocted in fraud. The case alleged by the plaintiffs was, that the bond in question had been obtained by the defendants with a view of covering certain pecuniary advances which had been made upon the ship, and for which they had no previous security, so as thereby to gain for themselves a priority of claim against the vessel, to the detriment of the interests of the plaintiffs, who were prior mortgagees.

Mr. Knight and Mr. Heathfield appeared for the plaintiff, and contended that this court had concurrent jurisdiction with the Court of Admiralty to hear and adjudicate upon cases of bottomry bonds, particularly when there was fraud alleged.

Mr. Jacob and Mr. S. Sharp were heard for the defendants in opposition to the motion. They submitted that the Court of Admiralty was the only proper tribunal for deciding upon the validity of bottomry bonds. It was quite clear, from the evidence, that no fraud had been practised with regard to this bottomry bond. It was also evident that, had not this sum of money been borrowed upon the vessel at Trieste, in order to defray a variety of expenses which had been incurred upon the voyage for necessary repairs, as also for the payment of a debt of £180, for which she would otherwise have been detained there in execution, she could not have completed her voyage homewards to this country.

Mr. Knight.—Sir, I admit the case does lie in the very narrowest compass. The question is, whether on the face of this bond, and upon the evidence now before your Honour, the bond does not tell an untruth, and is not given for a fraudulent purpose? That's the single question, and so far is that from being a point in dispute, that the whole argument admits it; and the substance of the argument is this,—that the Court of Admiralty will adjudicate upon the matter. It is true the Court of Admiralty has incidentally a jurisdiction to decide on bottomry bonds, and it has a peculiar facility of enforcing on the part of the individual who has the bond a decided remedy against the ship itself; but a bottomry bond is a contract, and a bottomry bond between British subjects which is to be adjudicated upon in this country has to be dealt with by the Court of Equity in this country, exactly as any other contract would have to be dealt with. There are a vast variety of cases which may be tried in the Court of Admiralty; for instance, the case of a seaman's wages, where the question might arise whether the wages had not been forfeited by desertion,—whether the wages were to go through the whole of a voyage, or were to cease upon a particular occasion. Why has a Court of Admiralty jurisdiction on that subject? Because it is incidental to its power of suing the ship. Did any man living ever hear it contended that a seaman could not sue for his wages in a court of common law? Did any man living ever hear it contended that all those cases which relate to a forfeiture of wages, or to the consideration of any other subject of this nature, cannot be taken cognizance of by our courts of law? Why? Because it is matter of contract, and because the courts of this country are instituted for the purpose of deciding on contracts between his Majesty's subjects. So with regard to the shares in a vessel—so with regard to giving security before a vessel is carried out of

port by one partner only against the consent of another—so with regard to the particular instance of a bottomry bond, in which this Court exercises a jurisdiction; and I have referred to the case of “Dobson and Lyall,” more for the purpose of illustrating the recent acting on an acknowledged principle, than as establishing any principle relating to cases of contract, though there was one particular jurisdiction which, having the power of enforcing a specific lien on the ship, may also have jurisdiction over it. Your honour recollects that, for the purpose of relieving the case from the only difficulty in that respect which could be said to belong to it, I offered the money; I brought the money into Court; but then there was another question mooted, and my learned friend in order to catch at something in support of his favourite point of getting this into the Court of Admiralty, demanded that he should have the power of getting bail in the Court of Admiralty, instead of having the money in this court,—that was to be without prejudice, and we have given bail because he desired it. But now the matter is to be decided by your Honour, and I offer again to bring the money once more into this Court, or let the bail in the Admiralty stand as money in this Court; but this case of fraud, on which discovery is essential, I desire to have adjudicated in this Court; and if your Honour thinks there is a case of fraud to be tried, I believe, speaking with the greatest deference, the Court cannot refuse what I ask. Now, sir, what does this case amount to? The present parties for whom I appear, are undoubted mortgagees of the ship, Kerr, or Lang and Company, which is the same thing; they are all in substance here—are partners in the vessel, with a power of making advances to the owner Ogilvie, in respect of the freight. Advances were made by them to the owner Ogilvie, to an amount which the mortgagee and owner of the freight were not aware of, we consequently found our security larger than we anticipated. The house of Messrs. Kerr and Co. had made more advances to Mr. Ogilvie than the freight would cover, and accordingly Ogilvie becomes their debtor. Now, I need not remind your Honour that if it had been a case for a mortgage, they must have obtained a mortgage in this country; but your Honour is aware the mortgage would have been on bond or security. Of course they have, by the law of this country, no lien on the vessel; accordingly they were in this position—that Ogilvie, an embarrassed man, was their simple contract debtor, without security, for a sum of money, and the vessel was mortgaged. What do they do? In order to get the vessel out of the ports of this country, and out of the reach of the laws of this country to a place where they might have facilities for gaining this undue advantage, they add to their advance—they shoot an arrow at one thing after they had missed another, in order to recover both, and accordingly they take the vessel out of the Clyde, because it suited them to get out of the reach of the laws of this country, by adding to their advance still without security. Now mark what's done. The vessel, after touching at Rio de Janeiro, goes to Trieste, addressed to that same house of Lang and Co., which is the house at Glasgow, and which is the house in London.

Mr. Sharpe—That's denied.

Mr. Knight—I beg your pardon.

Mr. Sharpe—Lang's house in London, and Lang's house in Trieste are the same.

Mr. Knight—We shall see. Sir, that letter before you, of the 5th of September, is to this effect:—

Glasgow, 5th Sept., 1836.

Gentlemen,—In answer to your letter of the 2d instant, we have to observe that, having settled already for the homeward freight of the Margaret Ogilvie with the owners, from whom we chartered her, you will have to look to them for settlement of any claim you may have on that vessel.

The name of the new captain of the Margaret Ogilvie is Sword; our partner in London is Mr. James Lang, of No. 55, Old Broad Street.

We are, Sirs, your most obedient servants,

STEWART, KERR, and Co.

Messrs. J. and S. Pearce, Philips, and Bolger, London.

I opened the case from the beginning, and it was never contradicted. I don't mean to say that every partner in every house are three, three and three; it is sufficient for my present purpose that they are three, two, and one; that is my case. My case is this, there is one individual who is a member of the house at Glasgow, who is a member of the house in London, who is a member of the house at Trieste; that is my case. I never alleged universal identity, nor was it material to my case to do so; they were in substance one and the same. Sir, the ship having been got out of the Clyde, and out of the influence and protection of the English law, is taken to Rio de Janeiro, and is addressed to Trieste, to this same house of Lang and Co. Now what takes place there? Lang and Co. there had a former clerk and present assistant called Bryce. The house of Lang and Company devise a method of getting security for an unascertained debt—and that is the whole of this case from beginning to end. The vessel being addressed to the house of Lang and Company, with whom these claimants are, in the sense in which I use the expression, identical, facilities are obtained for the purpose of getting security for this debt; and accordingly the captain is procured to execute a bottomry bond for what is now admitted to be, to a considerable extent, an unsecured debt. Is it to be permitted that a gentleman having an unsecured debt on this contract is, by means of a connexion with the vessel, to meet it by himself or his agent abroad, and there to get from the master a security under the guise and colour of a bottomry bond? for that is the whole of this case, and there is nothing else in it. Now, in the case of the Zodiac, where the bottomry bond was allowed for fees to the consul, that was a case of exaction. The consul had claimed certain fees; he had a right to detain the vessel till the fees were paid; and therefore it was, in effect, the release of an obstruction to the voyage: but, was that a case where the individual attempted to be benefited was connected with the vessel, and had been himself a party to the transaction? No such thing. Now, if this had been a *bona fide* seizure of the vessel at Trieste,—if it had been shown that by the law of Trieste such a demand could be made available, if it had been shown that by the law of this country it could be allowed, and that a subject in this country could in that unauthorised way get a bond which the law of this country could not give him, still it would have to be shown that there had been that seizure; that there had been that proceeding, and that prevention of the ship

from sailing: but is that sworn? No: it is stated on information, and a belief, in a vague and general way, without any particulars, or any explanation that the ship could not have sailed without it. Why Lang and Company, who were the creditors—because for the purpose of my argument, the house at Trieste is identical with the other two houses—make the demand? Did they resort to any court of justice? Did they issue any Admiralty process? Did they resort to any merchant at Trieste? Did they take any steps bearing the semblance of legal proceedings? None. It is merely what they chose to believe, that the vessel could not have sailed, and no reason is given why she could not have sailed. In my humble judgment, if they had taken those proceedings, considering it was a debt for which the law of this country could not give any security, and for which the law of Scotland could not have given any security—if all that which I have suggested had been done, it would have availed them nothing. No force, no legal proceedings, no detention—it is entirely voluntary and spontaneous on the part of the captain; and then what is the bond! Is the bond a security taken by persons conscious of a *bona fide* case, conscious they have nothing to conceal, conscious that they were doing what was right; and is it a security taken by persons who were conscious they were committing no fraud? What does the bond say? “Whereas, the aforesaid John Spence has been under the necessity of taking up and borrowing a sum of money for defraying the necessary expenses of the said brig Margaret Ogilvie at this port”—that is admitted to be a falsehood; the case on the part of the defendants admits that to be a falsehood; for the only ground on which they can relieve this from the charge of mere fiction and mere juggle, is to make out that it was a security taken for a simple contract-debt, due in this country. This, sir, shows their sense of right—this shows their sense of the law—this shows their notion of what they ought to conceal:—“Whereas, the aforesaid John Spence has been under the necessity of taking up and borrowing a sum of money for defraying the necessary expenses of the said brig Margaret Ogilvie, at this port, to enable her to proceed to sea, and has, for this purpose, actually taken up, and borrowed and received from the said John Bryce, in way of bottomry on the said vessel, the full and just sum of £483 10s.” If there had been any legal proceedings—if there had been a seizure—why was it not recited, thus: Whereas Messrs. Lang and Co., or Messrs. Carr and Co., having instituted proceedings, have procured the magistrates of Trieste to arrest the ship by means of such proceedings, it has, according to the law of Austria, become impossible for the ship to leave the port till the expenses of the suit have been defrayed, and for the expenses so incurred the bond is given. That would have been the course that would have been taken by honest men and by British merchants, such as they once were—that would have been the course taken by these individuals if they had had no fraud to conceal. The whole case is founded in falsehood and delusion and trickery—it is founded upon this, that under colour of a bottomry bond obtained from an ignorant man, the substituted master, having himself gone out mate, and become eventually master, by reason of the death of his former commander, the house of the charterers of the ship represented by the house at Trieste, take advantage of this man, and their influence over him, and induce him to sign this bond, now admit-

ted to be false. Now they have pressed this unfortunate man to make an affidavit denying the conversation he had with Mr. Phillips and many other respectable individuals, in which he admitted that to be the case ; an assertion now proved beyond all possibility of doubt by the evidence of unimpeachable witnesses. There is nothing else in the case from beginning to end. You have then the case in which it is admitted by the very argument of the other side, and by the affidavits, that there was no maritime necessity for the course they took ; in which it is not pretended there was compulsion—in which it is not pretended there was arrest—in which it is not pretended there were legal proceedings. You have it not stated in any affidavit that by the law of Austria there was any lien—you have it not stated in any affidavit that by the law of Scotland there was any lien. The utmost my ingenious friend on the left stated was, that by the law of many countries there may be such a lien.

Mr. Sharpe.—It is not as to Scotland.

Mr. Knight.—I am always happy to be interrupted by you ; but certain I am, there is no suggestion of any legal proceedings—no suggestion of any force—no suggestion of any arrest, and, if it was all straightforward, if there was a lien by the law of Austria, why not state it ? Why don't they state it was for a debt, for which, by the law of Austria, there was a lien ? What was the reason for inserting in the bond this statement, now admitted to be untrue, that it was for defraying the necessary expenses of the brig Margaret Ogilvie at Trieste ? The object was plain : they had a simple contract-debt in this country, for which they were not secured ; the brig was detained in the river Clyde, from inability, on the part of Ogilvie, to pay his demands.

Mr. Sharpe.—No ;—I don't think that was the fact.

Mr. Knight.—I am most ready to be interrupted by you, because you are always accurate, but I don't certainly recollect.

The Vice-Chancellor.—The letter of Reyner and Schlik, of the 19th of January, is not positive.

Mr. Knight.—No, sir ; and I put the case therefore on fraud. The subjects of this country have a right to come here for relief, and have a right to say they will not be driven to an unusual process, where they may be met by technicalities, and cannot have those facilities of discovery which this court gives. If we succeed here, we shall have a right to have the bond delivered up. I therefore pray of your honour not to repudiate the jurisdiction of this court, but to restrain the proceedings elsewhere, and let the matter be tried here. We know what the law is here as well as the Admiralty court does. We cite as authorities the decisions of that court ; we are as well acquainted with the law—if not, we may refer to the statutes ; but, what I implore of your honour is, to leave us to try a case of fraud before a court constituted for the purpose, and that you will not tell a subject of this country he is to be driven out of that court which he has every just ground for coming into.

Sir, the point lies in so narrow a compass that I am unwilling to trouble your honour at any greater length. We have given them the security which they demanded, and we will either continue the bail in the Admiralty court, or bring the money into this court ; giving them

that option, I trust your honour will think the proceedings of the Admiralty court should be stayed, and grant us that which we now ask.

Judgment.—The Vice-Chancellor.—I have no doubt the parties may file a bill for the purpose of having a bottomry bond delivered up on suggestion, or making out a case of fraud. That is the clear jurisdiction of this court. Well, then, the only question is, whether, upon these conflicting affidavits, a strong case of suspicion of the fairness of the transaction does not arise. Now, I must confess, the impression on my mind was, when I first heard this case opened, about three weeks or a month ago, that there was a very strong case of suspicion. I cannot myself determine the point on affidavits, but as I do see on the affidavits such a case suggested as makes it reasonable to think that if it were further prosecuted, a case of fraud might be manifested, it seems to me I am bound to uphold the jurisdiction of this court, by saying that an injunction shall be granted to restrain the proceedings in another court, so as to enable this court, by means of its own resources, to ascertain the question of fraud brought forward upon the bill. And it appears to me the proper course is, that there should be an injunction; and I think the money ought to come into this court; that the bail should be released, and the money brought into this court.

Mr. Knight.—Then, sir, we will bring £550 and a fraction into court within the time to be mentioned—say within a week; and thereupon let the bail in the Admiralty court be discharged.

The Vice-Chancellor.—£551; have the very sum.

Mr. Knight.—Yes, sir: bring the exact sum into court; and upon its being brought into court, and not before, the bail in the Admiralty court will be discharged, and injunction granted against proceedings.

THE ALBION—SALVAGE.

THIS was a suit prosecuted by the owners, captains, and crews of two fishing smacks, the Harlequin, and Bradshaw, for salvage services rendered to the Albion, in the month of December last. The ship had sustained great damage by heavy gales, having all her rigging washed overboard, her bowsprit only remaining, and the ship's cargo, valued at £4,600, as well as the lives of the crew, being in great danger. The vessel was about fifty miles from the British coast, drawing upon the coast of Holland, when the Harlequin, of fifty-seven tons, with a crew of five men and a boy went to her assistance, but such was the roughness of the sea that they could not approach the ship, which was then near a shoal called the Brown Bank. By much skill, however, the crew of the Harlequin succeeded in drifting a line to the Albion, and she was taken in tow, and after four days' great exertion, brought in safety into Yarmouth harbour. The smack Bradshaw came up to assist the Albion some hours after the Harlequin, but being a dull sailer and a heavy ship, the captain of the former cut her adrift as impeding rather than assisting in saving the ship. A tender of £400 had been made to the salvors, which was refused, and an action entered for £1,500.

The King's Advocate and Dr. Addams appeared for the Harlequin, and submitted that it was by the exertions of the crew of that smack

that the Albion and her crew were saved from almost certain destruction; a part of the cargo having been thrown overboard, and being wholly dismasted, the tender of £400 was insufficient for the services rendered. With respect to the Bradshaw, she had not been of any use to the Harlequin in rescuing the Albion, though the owners, masters, and crew, might be entitled to some reward for their loss of time.

Dr. Burnaby, for the owners, captain, and crew, of the Bradshaw, contended that as the parties for whom he appeared had exerted themselves for about twenty hours, and not having quitted the Albion voluntarily, they were entitled to a reward, especially as their services had been accepted by the Harlequin to assist in saving the Albion.

Dr. Haggard (with whom was Dr. Jenner) for the owners of the Albion, admitted that valuable services had been rendered, but the salvors had exaggerated their claims, and submitted that the tender was most ample.

Sir J. Nichol considered the case one of importance, not only with respect to the amount of property saved, but considering also the peril in which the crew of the Albion was placed. The vessel had become all but a derelict—indeed, worse, as the crew was on board, and the Court must look not only to the amount of property saved to the owners and underwriters, but to the lives rescued from almost certain destruction. The Albion, in December last, a very tempestuous season of the year, had, by a heavy gale, been totally dismasted, and a part of her cargo thrown overboard, to enable the crew to lighten her, so that if she went ashore, they might have a better chance of saving their lives. She was about fifty miles distant from England and Holland where the navigation was filled with sand-banks, and therefore a more perilous situation could not be imagined, lying like a log in the water, the wind blowing hard on the coast of Holland. Through the successful and praiseworthy exertions of the Harlequin, she was, after four days, towed into Yarmouth; the Bradshaw rendered little or no aid. The tender of £400 under these circumstances was insufficient. In case of a derelict, the court gave one-half, where no owners appeared, but in most cases two-thirds. The court, to encourage salvors, thought itself bound to award £1,000 to the Harlequin for the services rendered. With respect to the Bradshaw, it being public policy, and for the interest of the commerce and navigation of the country to encourage the crews of vessels who went promptly to the assistance of vessels in distress, as an attempt had been made to render such assistance, he (Sir J. Nichol) gave £100 to the owners, captain, and crew of the smack, the costs to be paid by the owners of the Albion.

The King's Advocate applied on behalf of the owners of the Harlequin to have an allotment of the award, as the vessel had been much strained in performing the services. He was at the same time ready to admit the importance of the exertions of the crew.

Sir J. Nichol considered that the exertions of the crews, who were the salvors, should mainly be considered; they (the owners) had claims for the peril their ship might be placed in. He should refer the matter to the counsel to make an arrangement with respect to allotting the money.

THE EXPERIMENT.

THIS was an appeal from the decision of the magistrates of Scilly, in a cause of salvage. The Experiment, of Newfoundland, with a cargo of oil, bound to Poole, shipped a heavy sea on the 12th Oct. last, which filled the cabin, and drowned the captain and three men, the others on board saving themselves by running up the rigging. On the following morning a number of boats went off the Scilly Island, and brought the vessel into a place of safety. The case was heard before the magistrates, who awarded £800 to the salvors for their services, from which decision an appeal was promoted.

Sir J. Nichol, without hearing the case, said the Court was not disposed to interfere with the decision of magistrates, where the facts were thoroughly examined. In this case, for all the facts stated, he thought the magistrates had not given too much, and he should pronounce in favour of the award, with interest at the rate of four per cent., from the period it was made.

PROMOTIONS.

Lieutenants.—J. B. Horkley, T. H. Mason, J. H. Riddell.

APPOINTMENTS.

Admirals.—Rear Admiral C. B. H. Ross, late Superintendent of Plymouth Dockyard, to command the South American Station, *vice* Sir Graham Hamond, K.C.B.

Captains.—F. W. Beechey, 25; H. W. Henderson, 15; E. Boxer, 3.

Commanders.—A. Wakefield, 2; T. Bevis, 3; H. Bolton, 1, *vice* Dobson; B. M. Festing, 1, *vice* Ross; D. Marsh, 1, *vice* Finlaison; S. F. Harmer, 1, *vice* Layton; F. D. Hastings, 15; L. Warren, 20.

Lieutenants.—A. Rothery, 4; E. Young, 5; L. F. A. Newman, 5; C. Starmer, 2; W. Hicks, (b) 1, *vice* Else; G. Bott, 6; G. E. Davis, for *Gleaner*, 3; J. Duncan, 3, for *Zephyr*; E. Owen, 3, for *Otter*; C. Spettigue, 15; C. H. Kenney, 15; C. E. Powys, 15; R. F. Cleaveland, 15, *St. Leger*, *Aldworth*, 15; B. Jeffery, 20; J. Fullarton, 13; E. Young, 5; R. F. Coghlan, 26; H. Baillie, 27; P. Hart, 28; J. A. Cooke, 29; T. Heales, 1; T. Fullarton, 13; J. H. Cheestion, 20; J. Bowden, 24; Birch, 32; C. Tylden, 34; W. Vickery, Agent, 36; H. Heyman, 1; J. Mc Ghie, 1.

Masters.—George Wright, 2; W. Wadbeery, 3, for *Cuckoo*; J. P. Moon, 3, for *Sprightly*; J. Grey, 3, for *Dotterel*; J. Davis, 15; J. Jackson, 18; C. Airey, 20.

Chaplains.—Rev. J. Marshall, 33.

Surgeons.—W. Lindsay, M.D. 13; E. Bowen, 6; J. H. Acheson, 15; J. Carmichael, 20; P. Comrie, 35; J. Low, 37.

Pursers.—W. Hamilton, 2; J. Bogle, 15; W. Edwards, 18; G. Dix, 20; J. Sampson, Establishment at Dublin.

Mates.—E. P. Charlewood, 7; H. Stewart, 8; J. Maling, 6; E. W. Lang, 6; W. Moneypenney, 6; O. P. Knott, 12; L. Maitland, 13; L. P. Burnell, 14; A. G. Edge, 1; J. C. M. Touzeau, 18; R. O. Stewart, 17; R. Easto, 30; J. W. Probert, 2; E. D. Ache, 7; J. Paul, 18; M. De Courcy, 18.

Second Masters.—W. C. Triphook, 17; T. R. Rundle, 18; R. Dean, 21; G. Anderson, 22; J. W. Symonds, 23; T. Hancorn, 15; G. Harper, 6.

Assistant Surgeons.—H. Scott, 9; F. Sharp, 10; J. Plymsall, 15; A. B. Catfield, 15; A. Slight, 10; J. Gordon, 10; J. A. Miller, 16; W. Robertson, 20; P. Brennan, 2; A. B. Cutfield, 15.

Midshipmen.—H. A. Hollingworth, 11; N. Rolfe, 8; P. Halkett, 20; E. Bremer, 18; A. M. Raker, 18.

Masters' Assistants.—J. H. Wilder, 19; C. Airey, 20.

Schoolmaster.—Mr. M. S. Rainback, 13.

Clerks.—T. H. Snowswell, 24; J. R. Penberthy, 31; G. Simmonds, 24; J. Millner, 10.

[Names of Ships to which Officers are Appointed.]

1, Coast Guard; 2, Rhadamanthus; 3, Redwing; 4, Hazard; 5, Princess Charlotte

6, Donegal; 7, Excellent; 8, Castor; 9, Romney; 10, Britannia; 11, Pembroke; 12, Sapphire; 13, Wellesley; 14, Vanguard; 15, Edinburgh; 16, Royal George; 17, Athol; 18, Alligator; 19, Messenger; 20, Hyacinth; 21, Dotterel; 22, Zephyr; 23, Partridge; 24, Victory; 25, African; 26, Lapwing; 27, Hornet; 28, Peikle; 29, Temeraire; 30, Jupiter; 31, Sparrow; 32, Lynx; 33, Pique; 34, Champion; 35, Hercules; 36, Elizabeth, Transport; 37, Pembroke.

Births.

At Farham Place, the lady of E. M. Chaffers, Esq., R.N., of a daughter.

At Stoke, the lady of Capt. Thomas Sanders, R.N., of a daughter.

On the 29th July, at Wickham, the lady of Capt. Sir Francis Collier, R.N., of a son.

On the 17th June, at Rochester, the lady of Mr. W. Percival Carrigan, R.N., of a son, still-born.

Marriages.

On the 1st of August, at Woolwich, Macgregor Laird, Esq., to Eleanor, daughter of Lieut. Colonel Nicolls, R.M.

At Florence, Edward Marcus White, Esq., of Hotham House, Yorkshire, to Florence, daughter of the late Captain C. M. Walker, R.N.

At St. Mary's, Bryanston-square, William George Nash King, Esq., Commander R.N., to Sarah, daughter of the late T. Bulkeley, Esq., of Montagu-square.

On June the 8th, at Halifax, Nova Scotia, Lieut. W. H. Molyneux, of H.M.S. Melville, to Martha Maria, only daughter of the late Admiral Sir Andrew Mitchell, K.B.

At Kingston church, by the Rev. H. A. Atkinson, Mr. J. Barnes, of Landport, to Miss E. Bydder, daughter of Lieut. E. Bydder, R.N.

At Lambeth, Thomas Lett, eldest son of the late T. Lett, Esq., of Lambeth, to Urania, daughter of P. Crane, Esq., R.N.

On the 11th August, at Pembroke, Lieut. Priest, of the Royal Marines, to Louisa, eldest daughter of Lieut. Connor, R.N., of the Coast Guard Station at that place.

At St. Augustine's church, by the Rev. R. Davies, Mr. W. S. Hamilton, to Georgiana, youngest daughter of the late Lieut. James Walker, R.N.

On the 17th August, at Urchfont, Wilts, by the Rev. Francis Goddard, B.A., John Townsend Compton, Esq., to Maria Harris, younger daughter of the late Richard Hallilay, Esq., R.N., of Wedhampton House, in that county.

At St. Pancras, Dr. D. Thompson, R.N., to Mary, daughter of A. Thomson, Esq., late of the Navy Pay Office.

Deaths.

At his seat, Walmer, Kent, on Saturday, Sir Richard Lee, Admiral of the Blue, aged 72 years.

July 16th, at Piccadilly-terrace, Vice-Admiral J. R. D. Tollemache, aged 65 years.

On the 9th June last, at Bermuda, Amelia, wife of T. Grant, Esq., R.N.

On board H.M. cutter Raven, off the river St. Andrews, coast of Africa, on the 13th of April, from fever, Henry, eldest son of Henry Price, Esq., Purser of H.M.S. Tweed.

Of consumption, at Blackwall, on the 9th July, Edward Victor Leopold, youngest son of Captain Charles Parish, of the West India Docks, and late Midshipman of the Tyne.

Recently, of fever, on board H.M. sloop Scout, Mr. Locker, mate of that ship.

On the 31st July, at Halstead, Essex, in the 81st year of her age, Mrs. Boston, relict of Rear-Admiral Boston.

On the 23d May, at Sierra Leone, Mr. John Lellyett Morley, Purser, of H.M.S. Curlew.

On the 8th August, at Walworth, in his 20th year, Wm. Wenman Lanford, the eldest son of Mr. W. R. Cowley, R.N., of the Coast Guard Department.

On Saturday, July 29, at Braziers, Oxfordshire, Frances, wife of Isaac Geo. Manley, Esq., Admiral of the Red.

May 10, of fever, on board H.M.S. Scout, off the Coast of Africa, in the 25th year of his age, Lieut. Charles Baldwin Dyke Acland, third son of Sir Thomas Dyke Acland, of Killerton, bart.

On the 20th July, at Howth, Com. W. Mudge, R.N., while conducting the Admiralty survey of the Coast of Ireland.

On the 17th August, at Winchester, Lady Lavie, widow of the late Capt. Sir Thomas Lavie.

Suddenly, in Cold Harbour, on the 25th July, Sophia Holmes, wife of Rear-Admiral Carter, youngest daughter of the late Admiral Sir Richard Rodney Bligh, G.C.B.

At Hythe, near Southampton, Capt. Wm. Hellard, R.N.

At Bognor, in the 20th year of her age, Julia, only child of Thomas Martin, Esq., R.N.

On the 10th August, of decline, at Bradninch, Devonshire, in the 32d year of his age, George Frederick Andrews, surgeon, only son of the late Capt. Geo. Andrews, R.N.

In Dingle, T. Lidwell Cavanagh, Esq., R.N.

At his house, in the Stoke Road, near Gosport, Com. Henry Davis, R.N., (1810.)

Lately, at Ascension, of a fever, Lt. Roberts, commanding the Dolphin brig man of war.

At Aberdeen, John Rose, Esq., R.N., in his 71st year.

At Walworth, Elizabeth, wife of Wm. Carroll, Esq., surgeon, R.N.

On the 8th August, at Wyndham-place, Plymouth, Harriet, wife of Archibald Murray, Esq., R.N.

Lieut. George West, R.N. (1816.)

At Devonport on the 30th July, Mrs. Sarah Hoar, widow of Lieut. Nathaniel Hoar, R.N.

At Nacton, Lieut. Hugh Montgomery, R.N., aged 59. He fought under Lord Nelson at Trafalgar.

At Margate, Com. J. Edwards. ("a.") R.N., in his 77th year: he was the oldest Commander in the service, of 50 years standing.

On the 6th instant, at Totnes, of apoplexy, Capt. Edward Dix, R.N. (1809.)

METEOROLOGICAL REGISTER,

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

JULY, 1837.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	S.	In. Dec.	In. Dec.	°	°	°	°	N.E.	N.E.	4	4	B.	Bc.
2	Su.	30.33	30.34	61	65	47	67	N.E.	N.E.	2	2	B.	Bc.
3	M.	30.32	30.28	58	69	42	70	S.E.	S.W.	2	3	Bm.	Bcm.
4	Tu.	30.23	30.19	67	76	53	77	N.W.	N.W.	2	2	Bc.	Bc.
5	W.	30.16	30.15	65	73	54	74	E.	N.E.	1	1	Bcm.	Bcm(4)
6	Th.	30.17	30.15	67	72	52	75	N.W.	N.	1	2	O.	Bc.
7	F.	30.14	30.16	68	73	60	77	N.E.	N.E.	3	3	O.	Bc.
8	S.	30.24	30.26	61	73	52	73	W.	N.W.	3	4	B.	Bc.
9	Su.	30.19	30.16	67	75	54	77	N.E.	E.	5	5	Bcm.	Bcm.
10	M.	30.14	30.10	61	67	49	67	N.E.	N.E.	3	4	Bc.	B.
11	Tu.	29.96	29.96	64	72	48	74	E.	E.	3	3	B.	Bc.
12	W.	29.98	29.98	64	74	49	74	N.E.	N.E.	2	2	O.	O.
13	Th.	29.96	29.93	59	70	55	71	S.W.	S.W.	2	1	O.	O.
14	F.	29.82	29.82	67	71	55	75	S.W.	S.W.	2	2	O.	Bcp(3)
15	S.	29.78	29.80	68	70	56	74	S.W.	S.W.	3	4	Bcp(2)	Qp(3)
16	Su.	29.90	29.86	69	72	57	75	W.	S.W.	4	4	Bcm.	Bc mp(3)
17	M.	29.97	29.99	65	69	52	72	W.	S.W.	3	4	B.	Qp(3)(4)
18	Tu.	30.04	30.01	64	67	51	74	S.W.	S.W.	3	4	Bc.	Qbcp(3)
19	W.	29.86	29.83	66	71	57	72	S.W.	S.W.	3	4	Bc.	Bc(3)
20	Th.	29.84	29.81	65	72	56	74	N.W.	N.W.	4	4	O.	Qp(3)
21	Fr.	29.88	29.91	63	67	54	70	N.	N.	3	2	Bc.	Bc.
22	S.	30.03	30.05	64	68	54	72	N.	N.	3	2	Bc.	Bc.
23	Su.	30.08	30.07	62	72	54	72	S.W.	N.W.	4	4	Bcm.	Bcm(4)
24	M.	29.95	30.01	72	76	56	79	N.	N.W.	3	2	Bc.	Bc.
25	T.	30.13	30.14	64	69	55	73	N.W.	N.W.	4	3	Bc.	Bc.
26	W.	30.12	30.13	66	73	60	74	S.W.	S.W.	3	4	B.	Bc.
27	Th.	30.10	30.10	70	77	63	79	S.W.	S.W.	5	6	B.	Qbc.
28	F.	30.01	29.96	73	82	56	83	S.W.	S.W.	5	5	Bcp(2)	Bc.
29	S.	29.82	29.82	68	75	62	76	S.	S.W.	8	9	Qor(2)	Qbcp(3)
30	Su.	29.37	29.30	63	68	58	69	S.W.	S.W.	6	6	Qor(2)	Qbcp(3)
31	M.	29.53	29.63	59	69	57	69	S.W.	S.W.	3	3	B.	Bcp(3)
		29.91	29.90	61	71	49	73	S.W.	S.W.				

JULY.—Mean height of the Barometer=29.996 inches; Mean Temperature=62.7 degrees; Depth of Rain fallen=1.50 inches.

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

LONDON: T. STANLEY, PRINTER, WHEATSHEAF-YARD, FARRINGTON-STREET.

ORIGINAL PAPERS.

OCTOBER, 1837.

ANCHORAGE AND REFRESHMENTS AT BOELE COOMBA.—*South Coast of Celebes, by Captain J. H. Miller.*

Mr. EDITOR.—Perhaps you may consider it useful for ships bound to China, by the route through the Java Sea, to know that water and fire-wood can be procured very conveniently at Boele Coomba, on the south coast of Celebes: the “William Wilson” anchored there in Dec., 1835, and in twenty-four hours filled fifteen tons of water with the ship’s boats, and procured all the refreshments required, viz., poultry, vegetables, and fruits, including cabbages and potatoes, at low prices. The boat, went up the river about a quarter of a mile, and filled the casks from alongside, the water being beautifully clear. There is a bar fronting the river nearly all dry, at low water, but with plenty of water on it for any boat at half tide; and my officer found also a narrow channel, by which he brought out the cutter, drawing three feet at dead low water. The “William Wilson” anchored in eleven fathoms, sand and coral, about one and a half mile off shore; the Conical Hill bearing N.N.W. by compass; but I would recommend anchorage in about five fathoms, with the hill on the same bearing, and about three quarters of a mile off shore, unless your boats are provided with good sails, for the sea breezes blow fresh, and it is difficult to pull a deep loaded boat so far.

The coast from Layken Point to Boele Coomba seems free of danger, with regular soundings, until you approach Boele Coomba Hill, where there are overfalls from twelve to seven fathoms. In running along the coast, you perceive a number of bamboos, which the Malays use as buoys in fishing; they are very tall, and loaded so as to preserve an upright position, and at first appear to be stuck in the bottom, but they are not so; my boat sounded and found them in twelve to fifteen fathoms water.

Boele Coomba possesses several advantages over any other part that I know of in that route, for ships in want of water and refreshments only. The expense and delay are both trifling, and it is preferable to either Singapore or Java, being a much further advanced stage of the voyage. It is also a very convenient anchorage for ships that do not like running through Salayer Strait in the night, as by starting from there in the morning, you can hardly fail getting through that strait with day light. Boele Coomba is not seen on coming from the westward, until you are quite abreast of the hill, when the white fort and flagstaff will be seen through a grove of cocoa-nut trees. There is a garrison of about one hundred Dutch troops and officers, and a surgeon, who are very courteous, assisting strangers to deal with the natives for refreshments, &c.

I am, Sir, your most obedient servant,

J. H. MILLER.

PORTLAND BAY.—*South Coast of New Holland. By Captain Magnus Tait, M. S.*

29, Colet Place, Commercial Road, London, 13th August, 1837.

MR. EDITOR,—I beg leave to send you a rough sketch of Portland Bay, on the S.W. coast of New Holland, with some remarks which may be of service to ships bound to India or Europe, from Sydney or Van Diemen's Land, taking what is commonly called the western passage round Cape Leewin.

Being aware that you are always ready to insert any information that may benefit commanders of ships, or trade in general, I hope you will find room for them.

I remain, Sir, your's, &c.

MAGNUS TAIT,
Master of Bark Guiana.

On my passage from Launceston, (Van Deimen's Land,) to Portland Bay, in October last, being off the latter place, a gale commenced at south, with thick weather, but it shortly afterwards clearing away, I saw the land about the bay, (which cannot from the appearances be mistaken for any other,) and determined upon running in, which I did, and brought up in smooth water with Lawrence Island, off the point bearing about S.E. by S. about three quarters of a mile N.E. from the fishery.

Having remained there a month, taking in a cargo of oil, I had an opportunity of judging of the safety of this anchorage, and I certainly recommend it to all ships bound to the westward, that may fall in with S. W. gales about this part of the coast, in preference to keeping the sea, or running back into Bass's Straits, which they have hitherto done. M. T.

[The foregoing information will be useful to vessels on a part of the coast of the great Australian continent, which is yet not only very imperfectly known, but not even laid down in a connected manner on the charts. The rough sketch of Captain Tait's, which is not sufficiently minute in several details for publication, represents the bay as being perfectly clear, and about "four leagues" from point (or Cape) Sir William Grant (of Flinder's chart) to the north shore; and the estimated distance between Lawrence and Lady Julia Percy Islands, about five leagues. The anchorage (we presume) is stated as being in lat. $38^{\circ} 20' S.$, and long. $141^{\circ} 35' E.$; a river, called the Fish river, falls into it on the western, and another on the northern side. The fishery huts are situated on the larboard hand going in, in the south west angle of the bay, and on the point by which it is formed.—Ed. N.M.]

CURRENTS OF THE OCEAN.

WE have received the following Bottle papers from our correspondents :

"Schooner Nymph, St. Katharine's Dock.

"MR. EDITOR,—I have just arrived from Nassau, with the above-named vessel under my command; whilst there I learned the following particulars, which I beg to communicate for insertion in your very valuable and useful periodical:—

"Ship Wellington, of London, L. Liddel, commander: April 11, 1836, lat. $17^{\circ} 55' N.$, long. $39^{\circ} 00' 11'' W.$

"This bottle is thrown over for the purpose of ascertaining the direction and velocity of the ocean current. Wind, N.E., moderate.

"Picked up by Captain W. Rodberd, of Am. brig, Patriot, of Baltimore, stranded at Cross Kays,* Abaco, on the 1st January, 1837.

"I am Sir, your obedient servant,
"R. H. NEWBY."

This bottle appears to have terminated its travels in a direction about N. 77° W. 2,250 miles from where it commenced, which gives it a drift of about 8.5 miles per day, for an interval of 275 days.

The following has reached us through Mr. Murray :—

"Wexford, August 9th, 1837.

"SIR,—Being a subscriber to that excellent work, the Nautical Magazine, I have taken the liberty to enclose the copy of a note which was picked up in a bottle on the strand of Ballyteigue coast, Wexford, about sixteen miles from the tower of Hook lighthouse, coast Waterford; the following are the particulars :—Lat. 16° N., long. 78° W. Dove, Captain Kehoe, all well.

"It is extraordinary that there was no date mentioned, or where the vessel was from.

"I am, Sir, your obedient servant,
"GEORGE GILBERT MORGAN,
Anna Eliza Brig Yacht, R.Y.S."

"John Murray, Esq.

The unfortunate omission of the date of departure in this case, tends only the more to excite, without satisfying, our curiosity. Commencing its course to the southward of Jamaica, there appears every probability of this bottle having found its way round the west end of Cuba, into the Florida gulf, and been drifted to the northward until it reached the coast of Ireland.

The next has been forwarded to the Secretary of the Admiralty, by the post-master of Antigua, having been found on the 16th of July, at Half Moon Bay, on the eastern part of that island.

"H. M. Steam vessel, Echo, 1st January, 1837, lat. 17° 17' N. long. 36° 38' W. In the north Atlantic, calm, after experiencing westerly winds from 19th Dec., between the parallels of 17° and 19° 30' N.E., E. Belcher, commander and passenger."

The course of this bottle has been due west 1,440 miles, in an interval of 196 days which gives a drift of about 7.4 miles per day.

AUSTRALIAN NAVIGATION.—*Spencer's Gulf, Kangaroo Island.*

WE insert the following information which has appeared in the *Times* and *Shipping Gazette*, as being important to seamen.

The following extract of a letter, dated March 1, has been received at Lloyd's:—

"Information to Commanders of Ships entering the Harbour of Kingscote, Kangaroo Island, South Australia.

"Kingscote is situate on the point of land which divides the Bay of Shoals from Seal Bay; on your charts it has two miles of water front-

* The Crossing Rocks of Demayne's Chart, forming the south side of Cherrie Sound, on the east coast of Abaco island. R. H. N.

age, one towards Seal Bay, and one towards the Bay of Shoals, and commands a full view of Nepean Bay from Point Marsden to Kangaroo-head, including the opposite coast of Cape Jervis. Kingscote harbour is the finest in the colony, with the exception of Boston Bay, (Port Lincoln.) Our harbour will accommodate some hundreds of vessels; and 700-ton ships can lay within half a mile of the landing-place; the Coromandel, 662 tons register, anchored here on the 12th of January, in four and a half fathoms. Vessels from England on making Kangaroo island should shorten sail if in the night, and endeavour to make Point Marsden by day light, as the passage is not good for a stranger to lay in at night owing to the strong tides. On making Point Marsden the lead must be kept going, with a hand aloft to look out for the Sand-spit. This spit runs off from Point Marsden about nine miles in a direct line, a little south of E.S.E., and the passage round it to Kingscote is about three miles wide on the Kangaroo-head side of the bay. Vessels should keep not less than five fathoms all the way round the sand, and until they get the company's flag-staff bearing N.N.W., and a yellow-looking bluff cliff which is between Lagoon Bay and the Bay of Shoals E.S.E.; they may then run up for the company's flag-staff. They should keep the lead going, however, all the way. The safest plan for a vessel from Europe is, on rounding Point Marsden, to fire a gun and hoist the signal for a pilot, and then run about four miles of the Sand-spit down and heave-to for a boat from the shore. She should also attend to guns fired or signals made from the shore. The approach, when known, is perfectly plain and safe, but the Sand-spit not being correctly laid down on any chart is apt to deceive a stranger. The company's servants have brought in every vessel from England, except the Buffalo, (she did not call here,) and no accident whatever has occurred, save to the William Hutt; she ran on shore on the spit, through not attending to our signals, but we got her off again without the least damage."

Extract of a letter from George Stevenson, Esq., Clerk of the Legislative Council of South Australia, dated Glenelg, Feb. 18 :—

"Several dangers not laid down in Flinders, or any other chart, have been discovered here since the 28th of December, namely,—

"In crossing Spencer's Gulf eastward, her Majesty's ship Buffalo discovered a low reef, about E.S.E. from Spilsby's island, distant from four to five miles, and another running about four miles north from Gambier's Island. Many of the smaller islands are inaccurately placed, nor will it be very safe to deviate from Flinder's track till the whole coast is surveyed. Investigator's Strait, however, and the direct course up St. Vincent's Gulf to Port Adelaide is free from any dangers, except those marked in Flinder's chart.

"In entering Nepean Bay from the westward, ships must keep well off from Point Marsden (as a reef of seven or eight miles runs almost S.E.) till they come nearly abreast of Kangaroo-head, when the bay is open, and excellent anchorage in from four to seven fathoms.

"To William Dobson, Esq., Secretary, Lloyd's, London."

"Notice to Captains of Ships bound to South Australia.

Glenelg, Jan. 5th, 1837.

"NOTICE is hereby given that her Majesty's ship Buffalo, carrying the pennant of his Excellency the Governor, is now anchored in St.

Vincent's Gulf, Mount Lofty, bearing E., in five fathoms water, about three miles from the land. Abreast of her will be seen a flag-staff, where a considerable part of the settlers are temporarily, where further information may be obtained if required; and Port Adelaide, where the Buffalo will most likely go next spring tide, is about fifteen miles northward.

"The site of the chief town Adelaide is fixed in the interior, on the banks of the river, about half way between Port Adelaide and the flag-staff before mentioned.

"By his Excellency's command,
(Signed,) "ROBERT GOUGER, Col. Sec."
"Caution.

"Spencer's Gulf should be avoided until surveyed, as there are many rocks and dangers not laid down in the chart, particularly about three miles to the north of Wedge Island. The lead should be kept going in Gulf St. Vincent, and it will be found a sufficient guide, as no dangers have yet been discovered there. Small reefs of rocks run off from the different sandy bays."

BALTIC NAVIGATION.

Royal Prussian General Consulate, 106, Fenchurch-street, Aug. 24, 1837.

MR. EDITOR,—I beg leave to transmit to you the translated copy of a notification issued by his Prussian Majesty's Government at Stralsund, referring to certain beacons which have been erected at Arkona, upon the peninsula Wittow, adjacent to the Island of Rugen, and I shall feel obliged by your giving the necessary publicity thereto, for the benefit of British ship-masters frequenting that part of the Baltic.

I have the honour to be, Sir,

Your most obedient humble servant,

B. HEBELER, Prussian Consul-General.

"NOTIFICATION.

"At Arkona, upon the peninsula Wittow, which is joined to the island of Rugen, there is projecting from the point of the redoubt a stone, in the direction of east $\frac{1}{4}$ north, at $2\frac{1}{2}$ cables' length, which is dangerous to ships drawing much water, and therefore has hitherto been marked by a buoy 434 fathoms distant from the beach, but as this mark has been frequently disturbed, it has been determined to put up a permanent one. This consists of two land-beacons, one of which is fixed on the rampart of Arkona, and the other in the plain of the redoubt, which point precisely to the outermost end of the reef. The farthest of these beacons is provided with a black basket-signal, of a round shape, and the foremost one with a similar basket painted red, in the form of an oblong square. Ships entering into Tromper Wick, or which want to make for Arkona, if they draw 12 feet of water or upwards, must not approach the point in question any closer, when the two beacons are seen from the deck in a straight line in the direction of west $\frac{1}{4}$ south, in which case the ship is again 434 fathoms distant. If the square signal is observed to be higher than the round one, it denotes that the ship has got too near the shore, and must immediately steer for the offing.

"Royal Prussian Government, Stralsund, May 17, 1837."

LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL ATALANTA,
ON HER PASSAGE FROM FALMOUTH TO BOMBAY—Continued.

CAPE OF GOOD HOPE TO MAURITIUS.

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Expended Coals in Cwts.	Engine Barometer.	REMARKS.
1								<i>Tuesday, 28th Feb.</i> —A.M. Commences with breezes, and clear. Employed washing ship fore and aft. Lighted fires at 7. At 9 commenced heaving in chain. At 10 weighed. At noon Robben Island bore per compass W. distant 6 or 7 miles. This contains only 12 hours to commence harbour log. Ship drawing 16ft. 4in. abaft, 14ft. 8in. forward. Stopped the engines at 12 to ease a bearing. Starboard connecting-rod working very hot.
2								
3								
4								
5								
6								
7						12½		
8						12½	27½	
9						12½	27½	
10						12½	27½	
11						12½	27½	
12					14	12½	27½	
2	S. b. ½ E. B			Varble.	14	25	27½	<i>Wednesday, 1st March.</i> —Begins with light breezes, and clear. Employed securing anchors and putting chains below. At 5h. 30m. cape N.E. by N. ½ N. dist. 14 or 16 miles. Light winds, inclining to calm. Midnight do. wr. At 6 A.M. light breezes from N.W. Set fore and aft sails. Several sail in sight. Ends at noon with strong breezes, and clear. John Johns, ship's cook, put in irons for being drunk and using abusive language. Lat. 35° 22' S. Lon. 20° 37' E. Bar. 29.9. Therm. 71°.
4					14	25	27½	
6		7 4			14½	25	27½	
8		7 4			14½	25	27½	
10		7 4			14½	25	27½	
12		7 4			15	25	27½	
2		7 4			15	25	27½	
4		7 4			15	25	27½	
6		7 4			15	25	27½	
8		7 4			15	25	27½	
10		7 4			15	25	27½	
12		7 4			15½	25	27½	
2	SE b E ½ E	7 4		West.	16	25	27½	<i>Thursday, 2nd March.</i> —Begins with fresh breezes, and cloudy. People getting up foretopmast, and crossing topsail and lower yards. Cook released. Midnight, increasing breeze. All sail set to advantage. Ends at noon with strong gales, and cloudy. Lat 34° 55' S. Lon. 24° 26' E. Bar. 29.8. Therm. 70°.
4		7 4			16	25	27½	
6		7 4			16	25	27½	
8		7 4			15½	25	27½	
10		7 4			15½	25	27½	
12		7 4			15½	24	27½	
2		7 4			14½	24	27½	
4		7 4			16½	24	27½	
6		7 4			16½	24	27½	
8		7 4			16½	24	27½	
10		7 4			16	24	27½	
12		7 4			15	24	27½	
2	SE b E ½ E	6 5		West.	15	24	27½	<i>Friday, 3rd March.</i> —Begins heavy gales, and cloudy. Employed scraping poop. At 2, started starboard paddle-box cabin-deck. A heavy sea. Shipping some water on deck. Ship labouring a good deal. Midnight more moderate. All sail set to advantage. Experienced a strong current setting to the westward, for which I allow 60 miles. Unbent main trysail. Bent storm staysail. Ends the same. Lat. 34° 59' S. Lon. 26° 10' E. Bar. 30¼. Therm. 70°.
4		5 5			15	24	27½	
6		5 5			15	24	27½	
8		5 5			15½	24	27½	
10		5 5		S. W.	15½	24	27½	
12		5 5			15½	24	27½	
2		5 5		South.	16	24	27½	
4		5 5			15½	24	27½	
6		5 5			15½	24	27½	
8		5 5			15½	24	27½	
10		5 5			15	24	27½	
12		5 5			14	23	27½	

H.	Courses.	K	F.	Winds.	No. of Rev.	Ex. in ct.	Bar.	REMARKS.
2	E. S. E.	6		S. S. E.	14	23	27½	<p><i>Saturday, 4th March.</i>—Commences with strong gales. Employed getting up coals out of forehold. Strong head sea running. Midnight ditto weather. Wind shifted round to E.S.E. Sent down foreyard and stowed the topmast. Ends at noon, strong gales and cloudy. Experienced a current as yesterday, setting to westward 60 miles. Lat. 34° 55' S. Lon. 27° 58' E. Bar. 30½. Therm. 71°.</p>
4		6			14	24	27½	
6		6			14	24	27½	
8		6			14	24	27½	
10		6			15	24	27½	
12		6			15	24	27½	
2		6		E. S. E.	14	24	27½	
4		6			14	24	27½	
6		6			14	24	27½	
8		6			14	24	27½	
10		6			14	24	27½	
12		6			14	24	27½	
2	E.S.E.			E.S.E.	12	23	27½	<p><i>Sunday, 5th March.</i>—Begins with strong gales and cloudy weather. Ship labouring a good deal. Shipping much water on deck. Supposed to have got out of the strength of the current. Midnight, increasing wind. At 4 veered more to the northward, dark and cloudy weather. Set forestaystail and reefed. Ends at noon with strong gales and cloudy. Lat. 34° 35' S. Lon. 29° 28' E. Bar. 30½. Therm. 70. Caulking round the waste pipe carried away.</p>
4					12	23	27	
6					12	23	27½	
8				N.E.	11	23	27½	
10					10	23	27½	
12					10	23	27½	
2					10	23	27½	
4					10	23	27½	
6					10	23	27½	
8					10	23	27½	
10					10	23	27½	
12					10	23	27½	
2	S. E. b. E.	4			10	24	27½	<p><i>Monday, 6th March.</i>—Begins with strong gales, and cloudy; a strong cross sea running. Shipping a great deal of water on deck. 1h. 30m. sea struck starboard paddle-case; all the after part washed away. At 3 A.M. sounded the well; found 3 feet water. Turned the hands to the pump. Found on inspection the bilge-pumps in the engine-room were choked, not discharging any water. All hands employed at the pumps until noon. Ends with strong gales, and cloudy. Water in the hold increasing. Ship pitching and rolling very heavily; washes great quantities of coal dirt into the bilge, choking the pumps as fast as they are cleared. Lat. 34° 39' S. Lon. 31° 38' E. Bar. 30½. Therm. 76°</p>
4		4			10	23	27½	
6		4			10	23	27½	
8		4			10	23	27½	
10		4			10	23	27½	
12		4			10	23	27½	
2		4			9	23	27½	
4		4			9	23	27½	
6		4			9	23	27½	
8		4			10	23	27½	
10		4			9	23	27½	
12		4			10	23	27½	
2	E.S.E.	4		N.E.	10	23	27½	<p><i>Tuesday, 7th March.</i>—Begins with strong breezes, and cloudy. All hands employed at the pumps. At 4 more moderate. All fore and aft sails set. At 6 stopped the engines until the bilge pumps were cleared. The bilge water above the stoke hole plates, and rendered intolerably hot by coming in contact with the bottom of the boilers. At 7 started the engine pumps, working; got the water clear off the stoke hole deck. Some hands employed caulking the leak round the waste water pipe; some attending the injection cocks. Attempted to draw out the bilge with air pumps of steam engine. Ashes</p>
4		4			11	23	27½	
6		5			12	23	27½	
8		5			12	23	27½	
10		7			13	23	27½	
12		7	4		13	23	27½	
2		8			14	24	27½	
4		8			15	24	27½	
6		8			15½	24	27½	
8		8			16	24	27½	
10		8			16	24	27½	
12		8			16	24	27½	

choked the pipes. At 8 the stokers could not stand in the stoke hole. Steam very low. Midnight watch employed at the pumps, the water again having gained on us. At 5 engine pumps began to work well. At 6 cleared all the water away. Commenced working with the coals out of after-hold. Ends pleasant weather. Lat. 34° 44' S. Lon. 34° 59' E. Bar. 30. Therm. 75°.

H.	Courses.	K.	F.	Winds.	No. of Rev.	Ex. in ct.	Bar.	Remarks.
2	E. $\frac{1}{2}$ N.	8	4	N.N.E.	17	24	27 $\frac{1}{2}$	<p><i>Wednesday, 8th March.</i>—These 24 hours begin with steady breeze and clear. Employed getting up coals out of after-hold. All sail set to the greatest advantage. Midnight, freshening breeze and cloudy. Sail-maker at work repairing main-trysail. Ends at noon, fresh breezes and clear. Lat. 33° 10' S. Long. 38° 26' E. Changed course to port 2 $\frac{1}{2}$ points.</p>
4		8	4		17 $\frac{1}{2}$	24	27 $\frac{1}{2}$	
6		8	4		17 $\frac{1}{2}$	24	27 $\frac{1}{2}$	
8		9			18	24	27 $\frac{1}{2}$	
10		9			18	24	27 $\frac{1}{2}$	
12		9			18 $\frac{1}{2}$	24	27 $\frac{1}{2}$	
2		8	4		20	25	27 $\frac{1}{2}$	
4		8	4		20	25	27 $\frac{1}{2}$	
6		8	4		20	25	27 $\frac{1}{2}$	
8		8	4		20	25	27 $\frac{1}{2}$	
10		8	4		20	25	27 $\frac{1}{2}$	
12		8	4		19	25	27 $\frac{1}{2}$	
2	E. $\frac{1}{2}$ N.	8	4	North.	20	25	27 $\frac{1}{2}$	<p><i>Thursday, 9th March.</i>—Fresh breezes and fine pleasant weather. Employed as yesterday at the coals. All sail set to advantage. At 9, P.M. dark, cloudy weather with rain. Took in the sails. Midnight, clear. All set again. At 3h. 45m. one of the nuts worked off the after-bolt of the connecting rod, and caused the bolt to drop out and the foremost one to bend. Experienced great difficulty in getting out the bent bolt. At 7h. 30m. repaired, and set to work again. Ends the same. Lat. 31° 32' S. Long. 41° 33' E. Bar. 29.9. Therm. 77°.</p>
4		8	4		20	25	27 $\frac{1}{2}$	
6		8	4		20	25	27 $\frac{1}{2}$	
8		8	4		20	25	27 $\frac{1}{2}$	
10		8	4		20	25	27 $\frac{1}{2}$	
12		8	4		20	25	27 $\frac{1}{2}$	
2		8	4		20	26	27 $\frac{1}{2}$	
4		7	4		20	26	27 $\frac{1}{2}$	
6		2			10	27 $\frac{1}{2}$		
8		2			21	10	27 $\frac{1}{2}$	
10		8	4		21	26	27 $\frac{1}{2}$	
12		8	4		20	26	27 $\frac{1}{2}$	
2	E. $\frac{1}{2}$ N.	9	4	N.W.	19	26	27 $\frac{1}{2}$	<p><i>Friday, 10th March.</i>—Begins with steady breezes and clear. All hands employed night and day getting up coal. At 7, light airs, inclining to calm. At 9 shift of wind to the southward. Midnight, fresh breezes and cloudy. At 8 A.M., ditto weather. All sail set to the greatest advantage. Ends at noon, ditto weather. Lat. 29° 21' S. Long. 45° 53' E. Bar. 30.1. Therm. 74°.</p>
4		9	4		19	26	27 $\frac{1}{2}$	
6		9	4		19	26	27 $\frac{1}{2}$	
8		9	4		20	27	27 $\frac{1}{2}$	
10		9	4		20	26	27 $\frac{1}{2}$	
12		9	4	S.	21	26	27 $\frac{1}{2}$	
2		9			20	26	27 $\frac{1}{2}$	
4		9			21	26	27 $\frac{1}{2}$	
6		9			21	26	27 $\frac{1}{2}$	
8		9			21	26	27 $\frac{1}{2}$	
10		9			20	26	27 $\frac{1}{2}$	
12		9			20	26	27 $\frac{1}{2}$	
2	E. $\frac{1}{2}$ N.	9		South.	20	26	27 $\frac{1}{2}$	<p><i>Saturday, 11th March.</i>—Commences with steady breezes and clear. Getting up coals as yesterday. At 9h. 30m. wind increasing, took in fore-trysail mizen and jib. Midnight, dark cloudy weather, strong squalls at intervals. Cross sea, ship straining a good deal. At 8 A.M. do. wr. Ends with fresh gales and cloudy. Burning ashes with dampers occasionally before the ashpits. Lat. 27° 54' S. Long. 47° 50' E. Bar. 30.5. Therm. 75°.</p>
4		9			20	26	27 $\frac{1}{2}$	
6		9			19	26	27 $\frac{1}{2}$	
8		9		S.S.E.	19	25	27 $\frac{1}{2}$	
10		8			18	25	27 $\frac{1}{2}$	
12		8			17	25	27 $\frac{1}{2}$	
2		7	4	S.E.	16	25	27 $\frac{1}{2}$	
4		7	4		14	24	27 $\frac{1}{2}$	
6		7	4		14	24	27 $\frac{1}{2}$	
8		7	4		14	24	27 $\frac{1}{2}$	
10		7			14	24	27 $\frac{1}{2}$	
12		7			14	24	27 $\frac{1}{2}$	
2	E. by N.	7		E.S.E.	14	24	27 $\frac{1}{2}$	<p><i>Sunday, 12th March.</i>—Strong gales and cloudy weather. Sea running cross, ship straining and shipping a good deal of water on deck. Employed as yesterday. At 3 P.M. took in jib and storm staysail. Wind heading, midnight, ditto weather. At 6 A.M. passed a large bark running, could not make out her number. Ends strong gales and clear. Lat. 26° 26' S. Long. 49° 50' E. Bar. 30.7. Therm. 76°.</p>
4		6	4		14	24	27 $\frac{1}{2}$	
6		6	4		14	24	27 $\frac{1}{2}$	
8		5		East.	14	24	27 $\frac{1}{2}$	
10		5			14	24	27 $\frac{1}{2}$	
12		5			14	24	27 $\frac{1}{2}$	
2		6			14	24	27 $\frac{1}{2}$	
4		6			14	24	27 $\frac{1}{2}$	
6		6			14	24	27 $\frac{1}{2}$	
8		6			14	24	27 $\frac{1}{2}$	
10		6			14	24	27 $\frac{1}{2}$	
12		6			14	24	27 $\frac{1}{2}$	

H.	Courses.	K.	F.	Winds.	No. of Rev.	Ex. Cls. in ct.	Bar.	REMARKS.
2	E. by N.	6		E. b N.	15	24	27½	<p><i>Monday, 13th March.</i>—Strong wind and heavy head sea running. A good deal of water washing on decks, caused by star-board paddle-box being open. Engines working well, though ship moving slowly, being so light. Midnight, more moderate. At 2 A.M. passed a brig standing to westward. All hands employed as usual. At 11, a sail homeward bound. Ends fresh breezes and clear. Lat. 25° 16' S. Long. 52° 0' E. Bar. 31. Therm. 76°.</p>
4		6			15	24	27½	
6		6			16	25	27½	
8		6			16	25	27½	
10		6			16	25	27½	
12		5	4		16	25	27½	
2		5	4		17	25	27½	
4		5	4		17	25	27½	
6		5	4		17	25	27½	
8		5	4		17	25	27½	
10		5	4		17	25	27½	
12		5	4		17	25	27½	
2	E.N.E.	6		East.	17	25	27½	<p><i>Tuesday, 14th March.</i>—Strong gales and cloudy. Employed about the coals. Cleared all out of fore part of fore-hold. Struck down all the empty water casks, and filled them with water. Likewise all the empty tanks abaft. Midnight, ditto weather. Ends with ditto weather. Altered course to port 1½ point. Lat. 23° 44' S. Long. 54° 13' E.</p>
4		6			17	25	27½	
6		6			17	25	27½	
8		6			17	25	27½	
10		6			17	25	27½	
12		6			17	25	27½	
2		6			18	25	27½	
4		6			18	25	27½	
6		6			18	25	27½	
8		6			18	25	27½	
10		6			18	25	27½	
12		6			18	25	27½	
2	N.E. ½ E.	7			18	24	27½	<p><i>Wednesday, 15th March.</i>—Strong winds and cloudy. Set fore and main topsail and jib. Employed working coals out of fore-hold. Midnight, hard gale with showers of rain, took in sails. At 5h. 30m. A.M. made the island of Bourbon, bearing N.E. dist. 9 or 10 leagues. Ends at noon with strong gales and dark cloudy weather. Sun obscure. Lat. 20° 27' S. Long. 55° 50' E. Bar. 29.9. Therm. 79°.</p>
4		8			18	24	27½	
6		8			18	24	27½	
8		8	4		18	24	27½	
10		8	4		18	24	27½	
12		8	4		18	24	27½	
2		8	4		17	24	27½	
4		8	4		17	24	27½	
6		8	4		17	24	27½	
8		8	4		17	24	27½	
10		8			17	24	27½	
12		8			17	24	27½	
2	E.N.E.	7		East.	17	24	27½	<p><i>Thursday, 16th March.</i>—Begins with strong gales and cloudy. At 6, found that our coals were nearly out. Obligated to turn to and cut up all the spare spars on deck. Midnight, dark cloudy weather. At 5 A.M. made the land, bearing E. by N., dist. 20 miles. At 10, got a pilot on board. The rest of the day employed making ship fast for the night. At 8 set the watch. Ends with fresh breezes and clear. At 11h. 30m. A.M., eased the engines. Blew off the boilers at 12h. 45m.</p>
4		7			17	24	27½	
6		7			17	24	27½	
8		6			17		27½	
10		6			17		27½	
12		6			17		27½	
2		6			8		27½	
4		6			8		27½	
6					17		27½	
8					17		27½	
10							27½	
12							27½	
								<p><i>Friday, 17th March.</i>—Begins " steady breezes and clear. At 6 A.M., pilot on board, commenced mooring ship. Took in 2 boats coals.</p>

We have these results from the foregoing voyage, Cape of Good Hope to Mauritius. Total coal consumed 224 tons 16 cwt., besides some spars; average coals per hour 11 cwt. 79 lbs.; average per hour per horse power 6½ lbs. Dist. run 2,295 miles, and the time employed 16 days. Average per hour 6 knots nearly, and 143.7 per day.

650 LOG OF THE H.E.I. COMPANY'S STEAM-VESSEL BERENICE.

The following is an abstract of the different days' work on this voyage, which we give in Captain Campbell's own form, as it derives importance from the bad weather he experienced.

1837.	Lat. S.	Long. E.	Course.	Dist.
March 1.	35 22	20 37 40	S. 52 E.	140
2.	34 56	24 26	N. 82 E.	187
3.	34 59	26 10	S. 88 E.	87
4.	34 55	27 57 45	N. 77 E.	90
5.	34 35	29 48 45	S. 81 E.	89
6.	34 49	31 38	N. 88 E.	89
7.	34 44	34 48	N. 63 E.	144
8.	33 10	38 26	N. 58 E.	200
9.	31 32	41 33	N. 53 E.	185
10.	29 21	44 53 25	N. 50 E.	218
11.	27 54	47 50	N. 50 E.	135
12.	26 26	49 50 20	N. 59 E.	137
13.	25 16	52 00 30	N. 53 E.	136
14.	23 14	54 13 31	N. 23 E.	153
15.	20 57	55 30	N. 67 E.	185
16.	Mauritius.		N. 67 E.	120

Days 16)2295

143 7

Thus making nearly six miles per hour against very bad weather, which I think good work.

(Signed,)

JOHN P. CAMPBELL.

LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL BERENICE, from Falmouth to Bombay.—Continued.

FERNANDO PO TO CAPE OF GOOD HOPE.

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
2	At			Anch.				<p><i>Thursday, 20th April.—A.M.</i> Light airs and cloudy. H.M.B. Dolphin anchored in the offing. Sailmakers assisted by a party from H.M.S. Scout, altering awning. Noon, light breezes and fine. P.M. Cloudy, with sultry weather, 4h. 30m. Having, with the assistance of a party of men and a boat from H.M.S. Scout, completed a sufficient supply of water, weighed and stood out to sea. Joined the vessel from H.M.B. Dolphin, J. Paterson, A.B., and J. de Costa, A.B. Sunset, extremes of island from E. 16° N. to S. 65° W. Altered course as per log. Sent down foreyard. Fresh breezes and cloudy. 10h. S. extreme of island S.E. by S. ½ S. South point E. by S. ½ S. Burning Welsh coals; great quantity of them sand and dust.</p>
4				Claren.				
6	in							
8								
10	Cove.			F. Po.				
12								
2		3	2	Stand-				
4		6	6	ing				
6		6	6	along	11	13		
8	W. by S.	5	5	shere.	11	13		
7		1	6	Southy	11	13		
9	W.S.W.	3	3		11½	14		
10	S.W. b.W	3	3		11½	14		
11	S.W. b.S.	6	6		11½	14		
12	S.S.W.	6	6		12	14		

H	Courses.	K	F.	Winds.	No. of Rev.	Ex. Cls. in ct.	Bar.	REMARKS.
2	S.S.W.	7	2	S.S.W.	12	26	in the original.	<p><i>Friday, 21st April.</i>—A.M. 2h. Centre of the island N.E. by E. Sunrise, lt. br. and fine. Highest part of the island N. 47 E. Extremes not visible. 10h. 50m. Prince's Island W. ½ S. Therm. 84°. Bar. 29.87. Crew employed setting up funnel rigging. Sailmaker finishing quarter-deck awning. Noon, light airs from the S., and fine wr. Lat. 1° 54' S. Lon. 8° 29' E. Coal expended, 14t. 19cwt.; rem. 3,814lbs. Oil 3½ glns.; rem. 305½ glns. P.M. Clear wr. People employed under the gunner setting up funnel rigging. Therm. 87°. Lt. airs. Bar. 29.90. Sunset, clear. wr. Var. by ampl. N. 57° W. Therm. 85°. Bar. 29.90. Midnight, light br. and fine, with a swell from S.W.</p>
4		7	4		12	28		
6	s. b w. ½ w.	7			12	28		
8		7	2		12	26		
10		7			12	26		
12		7	2		12	26		
2		7	2		12½	26		
4		7	2		12½	27		
6	S.S.W.	7	3		12½	28		
8		7	4		12½	27		
10		7	4		13	26		
12		7	5		13	28		
2	S.S.W.	7	6	South.	13	26½	<p><i>Saturday, 22nd April.</i>—A.M. Fresh br. and clear, with a swell from southward. At 4, got 50 bags of coal from after-hold to the bunkers. Scrubbed bags, and set them to dry. Therm. 84°. Cape Lopez S.E. by S. Bar. 87.90. Crew under the gunner setting up mizen rigging. Therm. 85°. Bar. 30. Noon, Cape Lopez, E. by N. ½ N. Fresh br. and clear. Lat. 0° 42' S. Long. 8° 32' E. Coal rem. 328t. 13cwt. Tallow 3,814lbs. Oil 302½ glns. P.M. Heavy rain, with thunder and lightning. Sunset, light airs and cloudy. Breeze increasing. Sent down f. t. gallant yard and mast, and struck main and mizen top masts. Midnight, light br. and cloudy, with lightning all round.</p>	
4		7	5		13	27½		
6		7	4		13	28½		
8	South.	7	2		12½	28		
10		7			12½	26		
11		7			12½	13		
12	S. by W.	7			12½	14		
2		7	4		12½	28		
4		7			12½	28		
6		7	3		12½	26		
8		7	4		12½	27		
10		7	4		12½	27		
12		7	4		12	27		
2	S. by W.	7	4	South.	12	28	<p><i>Sunday, 23rd April.</i>—A.M. A hard squall from S.S.E., with heavy rain, thunder and lightning. At 9, set fore and aft sails. Did not perform divine service in consequence of the wet appearance of the weather. Noon, light breezes and cloudy weather. Lat. 3° 18' S. Lon. 9° 18' E. Coals remaining, 312t. Tallow 3,768lbs. Oil 299glns. P.M. Cloudy, with threatening squalls. Sunset, light airs; cloudy all round, with lightning. Midnight, clear.</p>	
4		7			12	27		
6		7			12	26		
8		7	2		12	28		
10		7	3		12	28		
12		7	2		12	28		
2		7	2		12½	28		
4		7	4		12½	28		
6		7	4		12½	28		
8		7	5		12½	28		
10		7	6		12½	28		
12		7	7		14	28		
2	S. by W.	7	5	S.W.	14	26	<p><i>Monday, 24th April.</i>—A.M. Daylight, a hard squall from the eastward, with heavy rain. At 7, set fore and aft sails. Observed water discoloured; supposed it to be occasioned by the water from the river Congo. Crew employed getting coals from after-hold into bunkers. Sailmaker lengthening engine room windsails. In all sail. Noon, mod. br. and cloudy wr. Set on expansion valve at half stroke. Lat. 6° 8' S. Long. 9° 54' E. Cape of Good Hope S. 11 E. 1,700 miles. Coal rem. 295t. 11cwt. Tallow 3,722lbs. Oil 295 glns. P.M. Fresh br. and clear. Employed with boatswain about bowsprit. Sunset, moderate and cloudy, with swell from S.W. Midnight, fresh br. and clear, with increasing swell from S.W. Therm. 79°. Bar. 29.90.</p>	
4		7	5		13½	26		
6		7	2		13	26		
8		7	4		12½	26		
10		7	6		12½	26		
12		7	6		12½	26		
2		7	2		12½	26		
4		7	5		12½	26		
6		7	4		12½	26		
8		7	4		12½	26		
10		7	5		12½	26		
12		7	6		12½	26		

H	Course.	K	F.	Winds.	No. of Rev.	Ex. Cls. in ct.	Bar.	REMARKS.
2	S. by W.	7	6	S.W.	13	26		<i>Tuesday, 25th April.</i> —A.M. Lt. breezes and clear. At 8, fine weather. 8h. 30m. hoisted 200 bushels of coals from after-hold, and started them into the bunkers. Airing and drying sails and coal bags. Noon, long heavy swell from S.W., with light breezes. Lat. 8° 56' S. Long. 10° 36' E. Coal remaining 279t. 11cwt. Oil 292glns. Tallow 3,676lbs. P.M. Light breezes and fine. At 6, moderate, with a heavy swell from S.W. Midnight, moderate and fine.
4		7	6		13	26		
6		8			13	26		
8		8			13	26		
10		7	6		13	27		
12		7	6		13	28		
2	S.b W½ W	7	5		13	28		
4		7	5		13	28		
6		7	4		13	27		
8		7	7		12½	26		
10		7	6		12½	26		
12		6	6		12½	27		
2	S.b W½ W	7	2	S.W.	13	28		<i>Wednesday, 26th April.</i> —A.M. Fresh br. and increasing sea. At 4, hoisted 200 bask. of coal from after-hold, and started them into bunkers. Crew emp. setting up main rigging. Therm. 78°. Bar. 29.90. Commenced working fore hold. Noon, mod. br. and fine wr. Lat. 11° 41' Lon. 10° 46' E. Coal rem. 253t. 3cwt. Tal. 3,630lbs. Oil 288½glns. P.M. Lt. br. and a heavy long swell from S.W. People empl. under boatswain. Sent down topsail yard, and struck the mast. Midnight, fresh breezes and cloudy, with heavy head sea.
4		7	2		13	28		
6		7			12½	27		
8		7			12	26		
10		7			11	26		
12		6	4		10½	26		
2		7	4		13½	26		
4		7	4		13½	26		
6		7	6		14	26		
8		7	6		14	26		
10		7	3		14	27		
12		7	3		14	27		
2	Sb W½ W.	7		S.W.	14	26		<i>Thursday, 27th April.</i> —A.M. Fr. br. from S.W., and a heavy head sea. Ship pitching, top glnt. forecstle under occasionally. Got 200 baskets of coals from after-hold to the bunkers. Noon, do. wr. Lat. 13° 58' Long. 11° 2' E. C. Good Hope S. 15° E. 1,252 mls. Coal rem. 246 t. 18 cwt. Tal. 3,584 lbs. Oil 285 glns. Con. of coal lessened and valves closed. P.M. Strong br. and cloudy. At 10 a heavy cross swell from S.S.W. Sunset, fr. br. and cldy. At 10 a heavy cross swell. Shipping seas on the forecstle. Midnight, cldy.
4	S. by W.	7			14	28		
6		7			14	28		
8	S. ½ W.	6			12	26		
10		6	2		12	25		
12		6	6		12	24		
2		6	6	S.S.W.	12½	28		
4		7			12½	28		
6		6	4		12½	27		
8	S. by W.	7			12½	26		
10		7			12½	26		
12	S.b W½ W	7			13	26		
2	S.b W½ W	7		S.S.W.	12½	26		<i>Friday, 28th April.</i> —A.M. Strong br. and cloudy. At 4 commenced about the coals. At 8 got 200 baskets of coals from after-hold into the bunkers. Put empty water casks into after-hold. Heavy swell shipping heavy seas over forecstle. Noon, dark, hazy wr., clear at intervals. Shipping heavy seas forward. Lat. 16° 14' S. Long.:—Cape of Good Hope S. 18° E. 1,115 miles. Coal rem. 230t. 16 cwt. Tal. 3,538 lbs. Oil 281½ glns. P.M. Fresh increasing breeze and heavy sea. Ship labouring much. At 6 heavy gales and tremendous head sea. Midnight, strong br. and fine weather, very heavy sea.
4		7			12½	26		
6		6	2		12½	26		
8	S. ½ W.	6			12½	26		
10		6			12	26		
12		6	4		12	26		
2	S. ½	6	4		10½	26		
4		6			10½	26		
6	S.S.W.	6			10½	26		
8	S.W.bs. ¼ S.	5	4		10½	26		
10		5	4		11	26		
12		5	4		12	26		
2	s.w.bs. ¼ s.	5	4	S.S.W.	12	25		<i>Saturday, 29th April.</i> —A.M. Hy. squalls and dark, cloudy weather. Swell going down. Sent down top mast and top gallant rigging. Noon, decreasing breeze and sea, Cloudy weather. Lat. 18° 16' S. Long. 11° 42' E. Cape of Good Hope S. 21° E. 1,000 miles. Coal rem. 214 t. 15 cwt. Tallow 2,492 lbs. Oil 278 glns. P.M. Smart br. and cloudy. Crew employed pumping bilge water, bilge pumps in the engine room being reported choked by the engineer. Midnight, stiff breeze and cloudy weather.
4		5	6		12	25½		
6		5	6		12	26		
8	S.S.W.	6			12	28		
10		6			12	28		
12	S. by W.	6	4		12	28		
2		6	4		12½	28		
4		6	4		12½	28		
6		7			12½	28		
8		7			13	28		
10		6	6		13	23		
12		6	4		13	28		

H.	Courses.	K.	F.	Winds.	No. of Rev.	Ex. in ct.	Bar.	REMARKS.
2	S. by W.	7		South.	13½	28		<p><i>Sunday, 30th April.</i>—A.M. squally, with heavy clouds. Got 120 baskets of coal out of after-hold. Noon, increasing sea and cloudy. Employed pumping. The bilge pumps being still out of order. Lat. 20° 40' S. Long. 12° 19' E. C. Good Hope S. 21° E. 850 miles. Coal rem. 166t. 14 cwt., tallow 2,446 lbs., oil 274½ gallons. P.M. moderate weather. Commenced working fore-hold tanks, they containing Wall's end coal. Sunset, moderate breezes, cloudy weather. Midnight, moderate and clear.</p>
4		7			13½	28		
6		7			13½	28		
8		7			13½	28		
10		7			13½	28		
12		7	6		13½	28		
2		8			13½	28		
4		8			13½	28		
6		8			13½	29		
8		7	2		13½	29		
10		8	5		13½	29		
12		8	6		14	29		
2	S. by W.	8	6	South.	14	30		<p><i>Monday, 1st May.</i>—A.M. light breeze and clear. People employed scrubbing hammocks, main deck, awnings and between decks. At 9 all hands sending up topmast and topsail yard, with the fore-yard. Set jib, fore and mainsails. Noon, light breezes and cloudy weather. Lat. 23° 32' S. Long. 13° 9' E. C. Good Hope S. 25° E. 684 miles. Coal rem. 148 t. 17½ cwt., tallow 2,440 lbs., oil 271 glns. P.M. light breeze and fine. 1h. 30m. bent and set fore-topsail and square sail. 6, a bank to the westward.</p>
4		8	2		15½	30		
6		8	6		15½	30		
8		9			16	30		
10		9			16	30		
12		9			16	30		
2		8	4	NEbN	15½	30		
4		8	4		15½	30		
6		8	4	N.N.E	15½	30		
8		9			15½	28		
10		9	4		16	28		
12		9	4		16	28		
8, set fore and aft sails. Carried away the log line. Midnight lt. br. and fine wr. hv. dew.								
2	S. by W.	9		N.N.E	16	29		<p><i>Tuesday, 2nd May.</i>—A.M. daylight, thick weather with small rain. Removed 180 baskets of coal from after-hold to the bunker. Sent up top-gall. mast. Drizzling rain. Noon, light breeze, and thick muggy weather. Lat. 26° 47' S. Long. 13° 58' E. Coal rem. 132 tons, 46 cwt. Tallow 2,354 lbs. Oil 267½ gallons. P.M. dark cloudy weather. Sent up top-gallant and royal yards. Set fore-trysail. Midnight, clear.</p>
4		8	4		16½	29		
6		9			16½	29		
8		9	4		16½	29		
10		9	4		16½	29		
12		9	4		17	29		
2	South.	9	4		16½	29		
4		9	4		16	28		
6		9	4		17	28		
8		9	4		17	28		
10		9	4	N.E.	17	28		
12		9	4		17	28		
2	South.	9	6	Calm.	30	17		<p><i>Wednesday, 3rd May.</i>—A.M. light airs and variable. Variation per amplitude, 29° W. 8h. var. winds. In all sail. Crew employed making mats. Gunner cleaning arms. Noon, calm and clear. Lat 29° 52' S. Long. 16° 40' E. Coal rem. 114 tons, 11 cwt. Tallow 2,308 lbs. Oil 264 glns. P.M. calm and clear. At 1, extremes of land from E.S.E to E. by N. Employed pumping bilge water. Sent down fore top-gllt. yard. Light breezes and cloudy weather. Var. per amplitude, 27° 40' W. Midnight, ditto weather.</p>
4		9	6	W.S.W.	30	17		
6		9	6		30	17		
8		9	6		30	17		
10		9	4		30	17		
12		9	4		30	17		
2		9	4		16½	30		
4	SbW½W.	9	4		17	30		
6		9	6		18	30		
8		10			18½	30		
10		10			18½	30		
12	S.S.W.	10			18½	30		
2	S.S.W.	9	2	S.S.W.	18	30		<p><i>Thursday, 4th May.</i>—A.M. cloudy. At 5 sent down fore-yard. At 9, hazy, bent chain cables. Crew employed under boatswain. At 11, extremes of land, from S.S.E. to E. by N. Noon, lat. 32° 54' S. Paternoster Point, E. by N. ½ N. Coal rem. 96 tons, 6 cwt. Tallow 2,262 lbs. Oil 2,602 gallons. P.M. lt. br. and fine wr. The great weight of the signal locker having caused the skylights to leak very much, and being in our way in any other place, broke it up and stowed it below. At 3h. 30m. Table Mountain south. At 5h. 30m. hammock out open, S.N.N.W. ½ W. Altered course as</p>
4		9	2		17½	30		
6	SbW½W	8	4		17½	30		
8	S. by W	8	4	South.	17½	30		
10	South.	8	4		17½	30		
12		8	4		17½	30		
2	S. 5 W.	8	4	S.S.W.	17	30		
4		8	4		17½	30		
6	At	8	4		17½	30		
8	Anchor	8	4	S.W.	17½	30		
10	off					34		
12	Cape Tn.							

The foregoing log gives the following results: Voyage, Fernando Po to Cape of Good Hope. Total coal consumed, 270 tons, 12 cwt., of which, on the 30th April, we find 30 set down to waste; average per hour, 15 cwt. 97 lbs.; average per hour per horse power, 7½ lbs.; distance run by log 2,594 miles, time employed 341 hours, or 14 days 5 hours; average rate 7·6 per hour, and 182 per day.

VOYAGE OF THE COLONIAL SCHOONER, ISABELLA.—*In search of the Survivors of the Charles Eaton.*

ON the 3d June, 1836, the Isabella, under the command of Mr. C. M. Lewis, left Sydney, in search of the unfortunate survivors of the crew of the Charles Eaton; and at eight o'clock, June 19th, the weather being thick and hazy, the detached reefs on the north side of the entrance were seen from the masthead, bearing W.N.W. eight or ten miles. At nine o'clock Murray's Island, from the masthead, bore W. by S.; and at 9h. 30m. the Isabella entered the Cumberland's passage, which was cleared by ten o'clock, and at eleven was anchored off the north side of Murray's Island, with the following bearings, namely, extremes of the island E. by S., and S.W. by S. ½ S.; its centre, S.S.E.; three quarters of a mile off shore, in nineteen fathoms sand and coral.

As soon as the vessel was secured the attention of the crew was directed to the shore, on the beach of which a group of Indians were collected, showing signals of peace by extending their arms, and displaying gestures similar to the natives of the Main; and among them was plainly distinguished a naked white man. The Indians were preparing to launch their canoes; and as there existed some doubts as to the real disposition of these islanders, every preparation of defence was made on board the schooner; but, that they might not be deterred from visiting the vessel, the loaded guns were run in, and one half of the crew were concealed below, in readiness to repel any attack. To the westward a canoe was observed under sail.

It was not long before four canoes came off, each of which contained sixteen men. On their approach they began to make signs of friendship, by rubbing the hand over the abdomen, and calling out in loud voices, "poud, poud," (peace, peace). Their object was to trade; and for that purpose they had brought tortoise-shell, cocoa-nuts, and other trifles; which, as they approached the ship, they held up, calling out, "tooree" and "toolick,"* meaning iron tools, such as knives and axes. It was, however, pretended, by signs, that they were not understood, in the hope that they would bring off the white man to interpret for them; at the same time some axes were displayed, the sight of which made the Indians so anxious to possess them, that although they might have easily been induced to give up their nearest relations in exchange, yet they showed great reluctance in producing the white man; and it was not until they found that trade would not be allowed, and they began to be impatient to possess the valuable articles which they had seen, that they sent a canoe to the shore which returned in an hour with him; but he was not permitted to come on board until some

* When Captain Flinders visited the island the natives came off in their canoes, and called out, "Tooree, Tooree," and "Mammoosee!" According to Ireland, the word "mammoosee," or probably "inoboasee," means, a mess of yams.

axes were given in exchange. Upon interrogating him Mr. Lewis was very much gratified to find that he was one of the unfortunate crew of the *Charles Eaton*; his name being John Ireland.

Deferring any further inquiries for the present, Mr. Lewis gave the crew permission to trade with the Indians; upon which an active barter commenced, and was carried on with great briskness, and in the most friendly manner. The first present which was given them was some empty glass bottles, which they call "tarpoor," on which a few lines, explaining the particulars and intention of the schooner's visit, had been scratched, in order that should any white people be on the island they might be informed of the means of escape which was now open to them. Ireland informed Mr. Lewis that he had been treated with great kindness by the Indians generally; but pointed out one in particular, whose name was Duppar, to whom he was indebted for his life and protection, and from whom he had received even parental kindness. A favourable opportunity was therefore afforded of rewarding him for his humanity: he was invited on board, clothed in "fine linen," and loaded with presents, which put the old man in high spirits; and, if possessed of a reflective mind, he would doubtless have been amply repaid in the satisfaction of witnessing the delight that must have been visible in the faces of all on board, and of having been the means of restoring his adopted son to his countrymen; but it is to be feared that these sentiments are foreign to the savage, and that he would not have so readily given up his protégé had he not been allured by the desire of possessing the enticing baits that were held out to him. Duppar, however, seemed pleased and satisfied with his reception and treatment.

Ireland now informed Mr. Lewis that the youngest son of Captain D'Oyly was also on shore. Upon applying to the Indians to go for him, they said he was on the other side of the island,* and could not be produced that night, but promised that they would bring him on board in the morning. Fearing, however, that their reluctance to part with the child might induce them to conceal him, all bartering was ordered to be suspended until he was given up; soon after which the canoes left the vessel and returned to the shore.

Mr. Lewis had now an opportunity of obtaining from Ireland the account of the loss of the *Charles Eaton*, but found great difficulty in understanding him; for the boy had forgotten his native tongue, and mixed the Murray Island language so much with his own, that he was, at first, scarcely intelligible. Nor, indeed, was it until several days afterwards that the events which compose the following melancholy tale could be collected:—

The *Charles Eaton* left Sydney on the 29th of July, 1834, bound to Canton, by way of Torres Strait; and experienced a series of fine weather and favourable winds until she approached the Barrier Reef, when the weather became thick and rainy.

The master was provided with Captain Ashmore's chart, guided by which he boldly steered for the reefs. Unfortunately, however, for him the weather was so clouded on approaching the Barriers, that he could obtain no observation for the latitude, and yet it would appear that the ship was in a very favourable position.

* Ireland says that this was strictly true.

About ten o'clock in the morning the reefs were suddenly perceived close to, upon which the ship was hove up in the wind, and both anchors let go, and the cables paid out to the end; but as the depth was probably unfathomable they had no effect, for she drifted on the reef and fell over on her beam ends. The chief mate then cut her masts away, but the bottom was soon bilged, and everything destroyed by the water, which broke over the decks, and the ship became a perfect wreck. Happily the upper part of the vessel kept together, on which the crew and passengers collected. Soon after she struck, a vessel was observed three or four miles to windward, high and dry upon the reefs, with her masts standing, and royal yards across, and sails set, in which position she must have been left by her crew.*

During the confusion that existed one of the quarter-boats was lowered, but immediately swamped; by which one man named Price, was drowned. Soon afterwards three of the crew, namely, G. Pigot, the third mate; L. Constantine, the carpenter; and W. Gumble, one of the seamen, put sails, provisions, and water, and arms, and all the carpenter's tools, into the other quarter-boat, and lowered her down, and kept near the wreck during the day and following night. The next day B. Quin and J. Wright, two seamen, joined them, after which they refused to take any more, although six of the crew made their way over the reef the next morning, and wished to be taken on board. The boat, however, bore away, and was seen no more. The master then, assisted by those who remained, attempted to make a raft, which was not completed before the expiration of seven days. During this interval they had managed to distil the contents of a cask and some bottles of water from the sea, by the aid of the ship's coppers, and a leaden pipe from the quarter gallery cistern, the whole of which they placed on the raft with a basket containing beer, and a cask of pork. Whilst they were on the wreck they were upon a daily allowance of two wine glasses of distilled water, and a few pieces of damaged biscuit.

As soon as the raft was completed they got upon it, but finding that it was not buoyant enough to hold them they threw over the water, the pork, and beer. Still it did not support their weight, so the greater number returned on board; leaving Mr. Moorne, the master; Mr. Grant, the surgeon; Captain and Mrs. D'Oyly, and their two children, their nurse, a native of India, and Mr. Armstrong, passengers; also two seamen, named Lourne and Berry, who determined to remain upon it all night. In the morning, however, it was found that the rope by which the raft had been made fast to the stern of the wreck had been cut, and nothing was seen of their companions. It is probable that the uncomfortable situation in which they found themselves, up to their waists in water, and the sea constantly breaching over them, induced the master to cut the rope, and trust to Providence to guide himself and the passengers to some place of safety.

Those that remained then made another raft of the vessel's topmasts lashed together with coir rope, and made a sail out of some cloth which formed a part of her cargo. It took seven days before it was completed, when they launched off, and bid adieu to the ill-fated vessel, which was probably soon broken up; for at high water the sea breached over her.

* The *Flora*, Sheriff, master.

The vessel that was seen with her masts standing was too far to windward for them to reach ; for even the boat could not make way against the wind and current. Upon casting off they set their sail and steered before the wind, but the raft was so heavy and deep that very little progress was made. She drifted rather than sailed, and probably did not go more than a mile, or one mile and a half, an hour. After some time they came to a reef, upon which they remained for the night, and the next morning proceeded before the wind, but saw no more reefs.

After being two days and nights upon the raft, up to their waists in water, and having partaken of very little food, they passed an island, and then saw several more a-head. Soon afterwards a canoe was perceived paddling towards them, containing ten or twelve Indians, who, as they approached, stood up and extended their arms to show they had no weapons, and were inclined to be friendly. On reaching the raft the Indians got upon it, and conducted themselves very peaceably ; and after a short time proposed that they should leave the raft and go into the canoe, which they at first hesitated to do, until Thomas Ching, a midshipman, said he would go, as he should then have a better chance of getting to England ; upon which they all consented, and embarked in the canoe. Before they left, the Indians searched the raft very narrowly for iron implements, but only found a few hoops, which they collected and took with them. They left the raft about four o'clock in the afternoon, and in less than an hour were landed on an island which they subsequently found was called Bōydān, and is probably that on the admiralty chart, called No. 1, to the eastward of Hannibal Island.*

Upon disembarking the natives accompanied them round the island in search of food and water, but they were so exhausted by fatigue and hunger that they could scarcely crawl. Upon their return to the place where they landed they threw themselves on the ground in despair ; as it was evident from the ferocious bearing and conduct of the savages, who stood around their party grinning and laughing in the most hideous manner, that they were exulting in the anticipation of their murderous intentions. In this dreadful state of suspense Mr. Claer, the first officer, addressing his companions, recommended them to be resigned to their fate, and read to them, in a most impressive manner, several prayers from a book which he had brought with him from the wreck ; after which, commending themselves to the protection of the Almighty, they laid down, and, worn out by severe exhaustion, were soon asleep : but it was to them the sleep of death ; for no sooner had they composed themselves than, as Ireland describes, he was roused by a shout and noise, and upon looking up saw the Indians murdering his companions by dashing their brains out with clubs. The first that was killed was poor Ching, and after him his companion Perry, and then Mr. Mayer, the second officer ; after which the confusion became so great that Ireland could not distinguish what passed. The last, however, that met his fate was Mr. Claer, who, in the attempt

* On their way to it the canoe passed, first, three islands on the right, northward, and one on the left, southward. The main land was also distinguished from Boydan Island, and appeared to be about twelve or fourteen miles off, which agrees very well with the island it is supposed to be.

to make his escape to the canoe, was overtaken by his pursuers, and immediately despatched by a blow on the head.

Ireland and another boy, named Sexton, were now left awaiting their fate: the former, the narrator of this melancholy tale, thus describes his deliverance:—

“ An Indian came to me with a carving knife to cut my throat, but as he was about to do it, having seized hold of me, I grasped the blade of the knife in my right hand, and held it fast, struggling for my life. The Indian then threw me down, and, placing his knee on my breast, tried to wrench the knife out of my hand, but I still retained it, although one of my fingers was cut through to the bone. At last I succeeded in getting uppermost, when I let him go and ran into the sea, and swam out; but being much exhausted, and the only chance for my life was to return to the shore, I landed again fully expecting to be knocked on the head. The same Indian then came up with an infuriated gesture, and shot me in the right breast with an arrow; and then, in a most unaccountable manner, suddenly became quite calm, and led, or dragged, me to a little distance, and offered me some fish and water which I was unable to partake of.

“ Whilst struggling with the Indian I observed Sexton, who was held by another, bite a piece of his arm out; but after that knew nothing of him, until I found his life had been spared in a manner similar to my own.*

“ At a short distance off, making the most hideous yells, the other savages were dancing round a large fire, before which were placed in a row the heads of their victims; whilst their decapitated bodies were washing in the surf on the beach, from which they soon disappeared, having been probably washed away by the tide. Sexton and I were then placed in charge of two natives, who covered us with the sail of the canoe,—a sort of mat,—but paid no attention to my wound, which had been bleeding profusely.”

The next day the Indians collected all the heads; and, embarking, removed to another island where the women lived, which they called Pullan. On landing there Ireland saw two of Captain D'Oyly's children, and the ship's dog, called Portland; the elder (George) D'Oyly, told him that the first raft had landed on the island, and that all the passengers, excepting himself and his brother, had been instantly murdered; that his mother was killed by a blow with a club, and that his little brother was in her arms at the time, but was saved by one of the women, who afterwards took care of him. The child was seen by Ireland, when they landed, in the woman's arms, crying very much. He also saw some pieces of the ship's cabin doors, attached as ornaments to the heads of their canoes, which they appeared to prize very much; and other relics, among which were the skulls of the passengers and crew of the first raft, those of Mrs. D'Oyly and Captain Moore being plainly distinguishable: the former by the hair, the latter by the features. The heads were suspended by a rope to a pole that was stuck up near the huts of the women; round which they

* Upon interrogating Ireland to obtain some explanation of the reason their lives were spared, he says, that he has frequently seen the Indians recover themselves in a moment from a violent paroxysm of fury; and he attributes their safety to a circumstance of this nature.

danced every night and morning, accompanying their infuriated gestures with the most horrid yells.

The number of Indians collected amounted to about sixty; they were merely residing on the island during the fishing season; for their home, as it afterwards turned out, was at a considerable distance off. Their principal subsistence was turtle and small fish, which they caught with hook and line; and shell fish, which abound on the reefs. The island also produces a small fruit "like a plum with a stone in it," probably a species of eugenia. The fish is broiled over the ashes of the fire, or boiled in the basin of a large volute, (*Voluta Ethiopica*), which, being rather a scarce shell, is of great value to them.

The island of Pullan is covered with low trees and underwood, and the soil is sandy. In the centre of it is a spring which supplied the whole party with sufficient water for their consumption; and, as Ireland says they used a great deal, it must at least have yielded fifteen or twenty gallons a day; for the hole was always full. Upon a voyage they carry their water in bamboo joints, and cocoa-nut shells, as do the Malays.

After remaining here two months the Indians separated. One party taking Ireland and the infant D'Oyly with them, embarked in a canoe, and after half a day's sail reached another islet to the northward, where they remained a day and a night on a sandy beach; and the next morning proceeded and reached another island similar to Pullan, low and bushy, where they remained a fortnight. They then proceeded to the northward, calling on their way at different islands, and remaining as long as they supplied food, until they reached one* where they remained a month; and then they went on a visit to Darnley's Island, which they called Aroob, where, for the first time, Ireland says he met with kind treatment.

After a fortnight they again embarked, and returned by the way they came to an island called Sir-reb, † situated near Aureed, where their voyage ended, and they remained until purchased by Duppar, the Murray Islander, who it appears upon hearing that there were two white boys in captivity at Aureed, embarked in a canoe with his wife, Pamoy; and went for the express purpose of obtaining them, taking, for the purpose of barter, some fruit. The price of their ransom was a branch of bananas for each. They returned by way of Darnley's Island, where they stopped a few days, and then reached Murray's Island, where they remained ever since most kindly treated. Duppar gave little D'Oyly to a native named Oby to take care of; a charge of which he faithfully acquitted himself, and both Oby and his adopted child soon became very fond of each other; for as the child was a mere infant he soon forgot his mother, and naturally attached himself to his nurse. When at Aureed the Indians had named Ireland, Wak, and little D'Oyly they called Uass; names which they retained at Murray's Island, and by which they are doubtless now known all over the archipelago.

Ireland lived in the same hut with Duppar and his family: his employment was to cultivate a plantation of yams, and during the sea-

* Probably one of the group to the northward of Halfway Island, near Aureed, named by Mr. Lewis, "Sir Richard Bourke's Groupe."

† Sir-reb, according to Ireland's information, is Marsden Island.

son to assist in taking turtle and shell-fish. On one occasion he accompanied them on an excursion towards New Guinea, where they went for the purpose of barter and trade; which they frequently did to obtain bows and arrows, canoes and feathers, for which they gave in return shells; and which, from their scarcity, the New Guinea people prize very much;* but as Duppar was fearful that the New Guinea people would steal or murder him he was left at Darnley's Island, in charge of Agge, an Indian, until their return. Duppar and his friends, however, were not long away; for having stopped at an island called Jarmuth (Campbell's Island) to pass the night, one of the islanders attempted to take away by force from one of the visitors his *moco moco*, (a sort of bandage worn round the calves of the legs, made of the bark of bamboo,) upon which a quarrel ensued in which the Murray Islanders used their bows and arrows, and wounded several, one being shot through the body. The Jarmuth people then retreated to their huts, and the others embarked; but instead of going to New Guinea returned to Darnley Island, where, in a few days, they received a message from Jarmuth, offering peace; which, however, they would not accept, nor did they afterwards make friends.

Ireland's account of the visit of the Mangles is so different from what Captain Carr describes that the discrepancy must be received with much caution.

He states that Captain Carr's object seemed to be entirely that of trading for tortoise-shell: he was alongside the Mangles, and not "at a considerable distance off:" he was so near as to ask one of the people on the poop to throw him a rope to get fast to the vessel, which was done; but owing to the sea running high he was obliged to let it go; upon which he asked for a boat to be lowered for him to get on board, which was also done, and he would have made his escape had not one stood up in the bow with a naked cutlass, and the others flourished their weapons over their heads, which frightened the Indians so much that they pulled away on shore, followed by the boat for a little distance, and there concealed him. Ireland declares that he did not say that the natives would not give him up.

When under the Mangles' stern one of the crew offered him some tobacco which he declined. Had Captain Carr offered an axe for him he would have been given up immediately, as well as little D'Oyly, who was on the beach in the arms of one of the natives. The natives knew that Ireland was anxious to be taken away, and were averse to his going off to the vessel, saying, "You shall not go there to be killed;" but as he hoped to make his escape he persisted, and the result was a bitter disappointment to him.

The next morning, the 20th, at seven o'clock, five canoes came off to the schooner to trade; but as they had not kept their promise of bringing off the child, no communication was allowed to be held with them. As Mr. Lewis had now the advantage of Ireland's interpreting his wishes, no mistake or misunderstanding could occur in his communication with them. It was evident they were very reluctant to give the child up, and yet they coveted the "toolick" and "tooree" so much that he had great hopes of effecting his object without resorting to force. After waiting,

* Ireland describes the shell to be a cone, and recognised it among the plates in the "Encyclopédie Methodique," as the *Conus-mille-punctatus*.

however, for some time without any appearance of their sending for the child, he began to insist upon their giving him up; and, opening the ports, ran the guns out, and made a demonstration of using force, which had the desired effect; for, though it did not diminish the confidence they had placed in him, they saw he was determined to gain his point, and sent a canoe ashore to bring the child off. It returned in a short time with a message that he was on the other side of the island, but should be given up if he would give "tooree" for him, which was of course immediately assented to; but then they wanted the payment to be made in advance. As it was evident from the confidence they placed in Mr. Lewis, and the example that had been shown by the payment that was made for Ireland, and the rewards that were afterwards given to Duppar, that the Indians had no intention of completing their part of the bargain, but merely wanted to obtain the "toolick," he refused to comply with their proposal, and repeated his orders to stop trade.

Shortly after this, upon looking towards the shore, a group of about one hundred Indians, evidently in deep consultation, were seen seated on a hill; and among them a little white child, perfectly naked, playing with others of the same size. After two or three hours the group began to move down towards the shore, and at four o'clock the child, surrounded by the natives, was brought to the beach in the arms of a young Indian, who seemed by his kissing him to be very sorrowful at the idea of giving him up. He, however, embarked in a canoe, and brought him alongside. The child was frightened, and cried very much at the idea of leaving his sable friend, whose neck he clung round and pointed to the shore. Oby, however, brought his little charge on board, and descended into the cabin, where Mr. Lewis satisfied him with presents, and dressed him in clothes, at which he evinced no small delight. The bargain having now been completed the canoes were permitted alongside, and the people to trade. They had not, however, much to dispose of: a few yams and cocoa-nuts, a small quantity of tortoise-shell, bows, arrows, fozzigs, and shells of little value, were all they possessed.

Towards evening the canoes returned to the shore, but left Oby and Duppar on board; both of whom, particularly the former, who sobbed very much, were disconsolate at the idea of parting with their favourites. Before leaving the vessel's side the Indians pressed Mr. Lewis to visit them on shore the next day, which he promised to do.

According to his promise he landed the following morning, and was immediately surrounded by upwards of one hundred Indians, who expressed great delight at the meeting, by hugging and caressing him, and shaking hands; but in order to prevent surprise two boats were ordered to lie off on their oars, and be prepared with their arms should any hostility be shown. This, movement, however, appeared to frighten the women and children so much that they ran away to their huts; and it was some time before they mustered sufficient courage to approach. At last they were persuaded by the men, who were evidently amused by their timidity; and an old fat lady gradually drew near and took Mr. Lewis's hand, and held it in one of hers, scratching the palm with the fingers of the other. Confidence being thus restored, the women and children were presented with handkerchiefs and toys, which seemed to delight them very much.

After remaining two hours with these friendly Indians Mr. Lewis embarked, with a view of examining the depth of water between Murray's Island, which they call Meër and the smaller ones to the S.W. of it: the northernmost of the two is called Dowar, and the southernmost Wyer. In the channel between Meër and Dowar were found twenty-two fathoms; but the passage is contracted by shoals, the deepest part being near Meër. On Dowar, which is high and rocky, many cocoa-nut trees and several huts were noticed; but as it was not the fruit season they were not inhabited. Near the huts were observed several skulls strung up among the bushes, which Ireland described to be the memorials of departed friends. Upon Dowar, or Golgotha, as Mr. Lewis named it, a golden plover was shot, and a few seeds and specimens of plants were collected.

Wyer was found to be very barren, and from its rugged and precipitous chasms bore a resemblance to a ruined fortress. In the sheltered parts, however, a few huts were seen, and near them some cocoa-nut trees. Beche le mer abounded on the beaches, some of them were procured weighing three pounds.

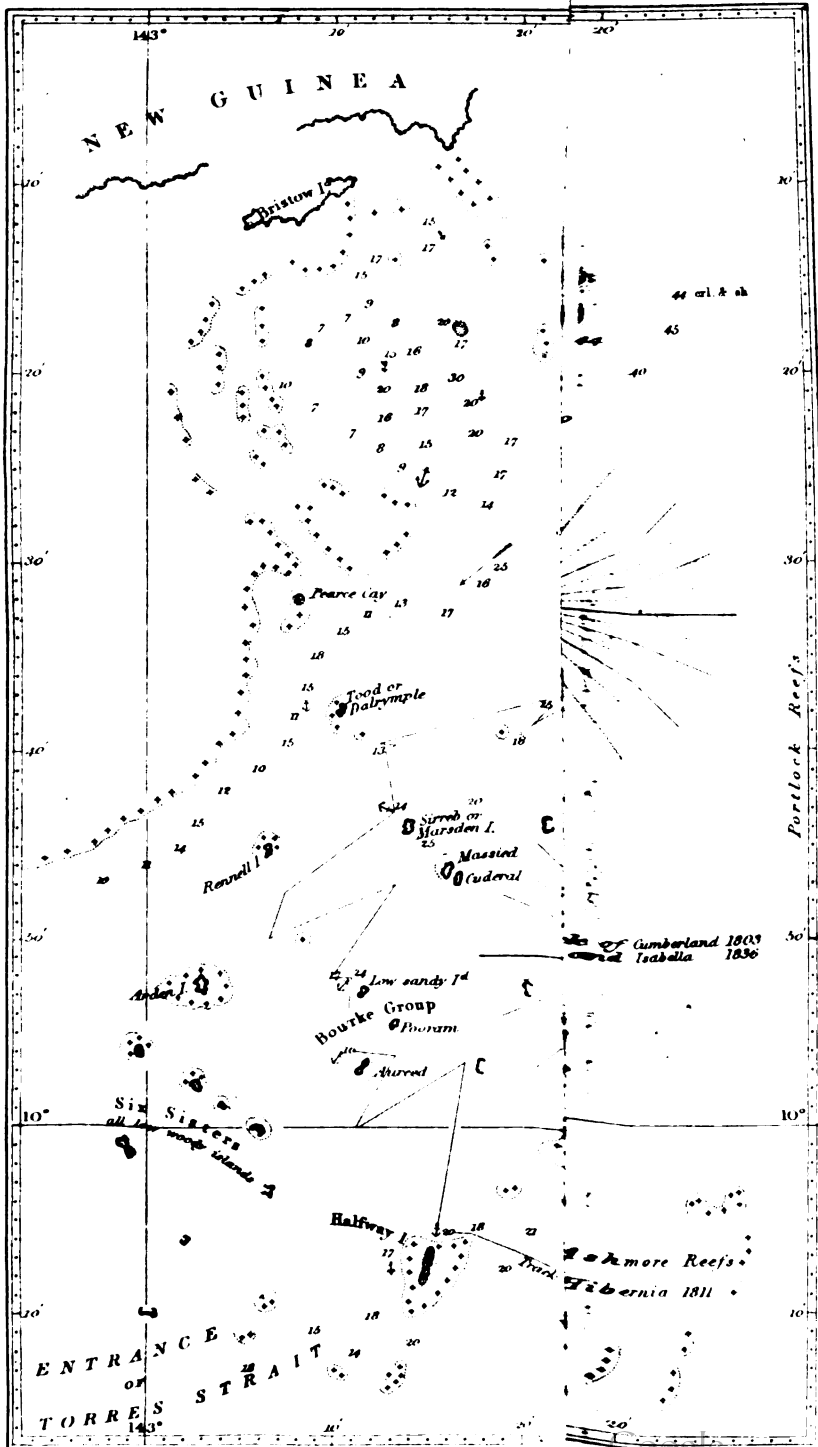
The next morning, June 22, five canoes came off to trade, but they brought little on board of any worth. Understanding that there was a water-hole near the W.S.W. end of the island, eight casks were sent on shore to be filled. The well was about one hundred yards from the beach, but it only contained enough to fill one cask, and that was so muddy as to be unfit for use. It appears that the island is very deficient in water, and what they use is collected in the wet season in holes, and the valves of the "chama gigas"* under the trees. For drink they use principally the milk of the young cocoa-nut. Whilst filling the cask of water, one of the Indians, an ugly fellow, without a nose or mouth, (these necessary appendages having been eaten away by a cancerous complaint which appears to be very prevalent amongst them,) took the opportunity of stealing a cask, and concealing it in the scrub at some distance; it was, however, discovered, upon which the thief and his companions scampered off for fear of punishment, for the party was well armed. The Isabella's people afterwards had several opportunities of witnessing their thievish propensities; particularly for any iron tool.

In the afternoon, a reef which extends for a mile and a half off the E.S.E. end of the island, the edge of which is precipitous, and forms a bold wall-sided reef, was examined by Mr. Lewis. The current was found to set with great strength to the N.W., which prevented his exploring any further. In the evening the great guns and small arms were discharged, which made a great impression upon the Indians. Some rockets also were thrown up, which had the desired effect.

June 23.—This day an attempt was made to examine the south coast of the island; but the tides were too strong, and the wind too fresh, to enable the object to be accomplished.

A boat's crew, with Mr. Lewis, landed the next morning on Wyer,

* The "chama gigas" is an enormous bivalved shell, the fish of which alone has frequently been found to weigh upwards of three hundred weight; so that it would take the united strength of three or four men to move the shell when it contains its inhabitant. The valves may probably contain as much as three or four gallons of water.



and found it connected to Dowar by a shoal of sand and coral, over which, at low water, the natives wade about knee deep. This reef is covered with *beche le mer*,* of which the Indians do not know the use.

On Wyer was observed, suspended between two bamboo trees, but supported by a rock in an inclined position, the skeleton of a man which had apparently been placed there some time, as all the flesh was dried up or decomposed. The figure had been painted over with a dark red ochreous pigment, with which they daub their bodies. In the forehead was a piece of mother-of-pearl, to represent an eye.† The natives explained that he had died from swollen bowels, which was caused by some incantation of one of the Darnley Islanders, and that, after he was dead, a substance like a turtle was taken out of him, which they attributed to the curse. They evidently entertained a religious veneration for the skeleton. Ireland recollects the circumstance of his death, but he did not see the body opened.

REPORT OF PROFESSOR BARLOW TO THE LORDS COMMISSIONERS
OF THE ADMIRALTY ON THE COMPASSES SUPPLIED TO THE
ROYAL NAVY.

Royal Military Academy, Jan. 31st, 1820.

As soon as I received your permission to examine the compasses in store in the royal dock yard, Woolwich, I constructed a very simple

* "*Beche le mer*," or Trepang, is an animal of a most disgusting appearance, and from its figure is frequently called the sea slug. It is of cucumber shape, about ten or twelve inches long, and two inches in diameter. Some are black, and another species is of grey colour. It is an object of considerable value to the Malays, who annually visit the north coast of Australia to procure it to sell to the Chinese, who use it as an article of food, principally on account of the highly stimulating effect it produces. When taken it is parboiled, and dried in the smoke of a fire, and in that state is sold to the Chinese merchant at a great price. The north coast from Van Diemen's Gulf to Cape Wessel, and the shores of the Gulf of Carpentaria, abound with it; and it is also found plentifully on the coral reefs of Torres Strait, and the N.E. coast of Australia.

The different varieties of this animal, which are very numerous among the eastern islands, have not yet been specifically separated by naturalists. Lamarck has described the whole as *Pripulus candatus*. *Lamarck's Hist. Nat. : des anim sans vertebres*, iii. 77.

The two specimens of "*beche le mer*," which are found upon the coast of New Holland; wherefore the Malays call it "*trepan marena*,"—*marena* being their name for the northern coast,—are of inferior quality to what are found in the eastern archipelago. The better quality, the "*batu*," is of a black colour, and is found in deep water; the other is of a grey or sandy hue, and is called "*passir*," (sandy). The best kind is procured among the Arroe islands, which is the principal fishery. The price varies according to the sort, from five to one hundred rupees for the pekul of 133 lbs. The "*trepan marena*" is valued at about fifty rupees, or four pounds sterling for the pekul.

The "*beche le mer*" that are found on the reefs left dry by the tide, or in shoal water, whether of grey or black colour, are of very inferior quality to those that are fished for in five or six fathoms. From sixty to one hundred proas from Celebes annually visit the coast; forty to fifty belong to Macassar; and the others to the Bay of Bonni. They are called *Buggies*.

The proas are about twenty to twenty-five tons burthen, and are so very slightly constructed that it seems extraordinary they trust their lives in such frail machines; many having no timbers, and the sides are only kept apart by cross-beams; the planks are dowelled together with wooden pegs: and yet their crews consist of twenty or thirty individuals; for whom they carry provisions for six months. The water is carried in joints of bamboo. They are armed with muskets, and some have swivels.

† As a piece is placed in each eye it is probable that one must have fallen out.

apparatus proper for the purpose, and commenced my proposed examination. The store house in which the compasses are kept being in the vicinity of great masses of iron, I had them removed to an office appropriated to the use of Mr. Charles Bonnycastle, lately a pupil in the royal naval college, who, from the nature of his education, and from his natural love for scientific inquiries, was very ready to lend me any assistance in his power.

Having determined the true magnetic meridian by means of a compass, manufactured by Messrs. W. and T. Gilbert, of Leadenhall Street, the accuracy of which I had previously ascertained, I began by placing several of the cards in store upon the same pivot, and thus, by the assistance of my apparatus, very readily, and with sufficient accuracy, determined their errors in bearing. I soon found, however, that it would be useless to examine the cards indiscriminately; for out of the whole number (not less I conceive than 150) more than half of them would be considered as mere lumber, and which ought to be destroyed, on the same principle as we clip base coin, being wholly useless while in store, and extremely dangerous if suffered to pass out of it. I determined, therefore, to select thirty only, which appeared to be the most perfect in their construction, some belonging to azimuth boxes, others to binnacle bowls, and others again out of what are called the *spare cards*, deposited in separate small boxes. The following table shows the result of this examination.

Table of the errors in the bearings of the card compasses in store in the royal dock-yard, Woolwich, Jan. 29th, 1820.

No.	Description of compass.	Errors and Remarks.
1	Binnacle.	Deviation $1\frac{1}{4}^{\circ}$ west.
2	Ditto.	Ditto $0\frac{1}{4}^{\circ}$ west.
3	Ditto.	Ditto $1\frac{1}{4}^{\circ}$ west.
4	Ditto.	Ditto 1° west.
5	Ditto.	Ditto 1° east.
6	Azimuth.	Correct, having no deviation.
7	Ditto.	This card stood any where within 5° east or west of north, for want of power.
8	Binnacle.	Deviation $0\frac{1}{4}^{\circ}$ west.
9	Ditto.	Ditto $0\frac{3}{4}^{\circ}$ east.
10	Azimuth.	This needle wanted power, like 7.
11	Ditto.	Correct, having no deviation.
12	Binnacle.	Deviation $2\frac{1}{4}^{\circ}$ west.
13	Spare card.	Correct.
14	Ditto.	This card would stand any where within 4° east or west of N.
15	Ditto.	Ditto ditto.
16	Ditto.	Deviation 4° west. } See remarks, next page.
17	Ditto.	Correct.
18	Binnacle.	Scarcely any power, same as 14.
19	Spare card.	Deviation 1° west.
20	Ditto.	Ditto $1\frac{1}{4}^{\circ}$ east.
21	Ditto.	Ditto $1\frac{1}{4}^{\circ}$ east.
22	Ditto.	Ditto 1° west.
23	Ditto.	Ditto $1\frac{1}{4}^{\circ}$ east.
24	Ditto.	Correct.
25	Ditto.	Ditto.

The other five cards were found in the same state as No. 14.

In reporting the errors contained in the above table I beg to call the recollection of my Lords commissioners that they are not those due to compasses taken at random, but to thirty of the most perfect I could select out of all those in store; and the errors shown are therefore probably less than what appertain to the compasses commonly in use in her Majesty's navy; and as such deviations from the truth cannot but be considered of great importance in the navigation of vessels, I beg to be permitted to enter a little further upon the subject, in order to point out what I conceive to be the source of these errors, and the method of prevention. The causes of errors may, I imagine, be reduced to the three following:—

1. The errors which naturally appertain to the form of the needles usually employed in those instruments.
2. To imperfect workmanship; and,
3. To the manner in which the compasses are kept in store.

With respect to the first of the above sources of error it is to be observed, that the needles are commonly of a form approaching very nearly to a parallelogram, as shown in the annexed figures, and consequently the accuracy of the bearing of the card will depend upon the north and south point of the needle coinciding with the geometrical axis of the figure as in figure 1. In this case, if the card be placed with its north and south points corresponding with the axis of the needle, there will be no deviation; but if in communicating the magnetic fluid to the needle the greatest accumulation should be oblique with respect to the axis, as in figure 2 and 3, then, the card being placed as before, its north point will bear to the east or west of the true magnetic north by a quantity equal to that obliquity. In order to prove that this is the natural cause of the deviation in certain cases, I proceeded as follows with the needle marked No. 16 in the preceding table; namely, I unscrewed the cap, and screwed it in again on the other side, thereby turning the face of the card downwards, and then suspending it again, I found the error in deviation to be 4° east, instead of 4° west; a circumstance which I conceive can only be accounted for by supposing the needle to have received its magnetism in a diagonal direction, instead of its being communicated in a line coincident with its geometrical axis.



This source of error may, it is obvious, be avoided by suspending the needle edge-wise, instead of flat-wise, or by means of a method of adjustment similar to that employed in Willis's steering compass card.

With respect to the imperfections in workmanship it is needless to enter into detail. The cards are many of them elliptical, rather than circular; true centering seems to be entirely disregarded, and what ought to be agate seems in many instances to be only common glass. The balance also in various cards is only preserved by a very liberal distribution of sealing wax, which increases the weight of the card, and prevents its traversing, particularly where the needle has but a slight directive power.

The third source of error I have attributed to the way in which the compasses are kept in store. On this head I beg to observe, that it is

a well known fact if two magnets be brought near and parallel to each other with their poles inverted, or if they be laid across each other, or be in any other irregular manner brought into contact, or within each other's influence, the power of each will be impaired, and perhaps ultimately destroyed.

Now, in the store, the boxes containing the cards, &c., are all placed and piled upon each other indiscriminately, without any regard being paid to the directions of the needles within them; consequently there is a perpetual decomposition of the magnetic influence going on, which would ultimately derange and destroy the action of the most perfect instruments; and to this cause is doubtless to be attributed the very weak directive force of many of the needles which I examined, as I cannot imagine that any instrument-maker would deliver them in the state in which they now are. Having said thus much with reference to the cause and existence of the errors in bearing, I beg to be permitted to offer a few remarks on the method of preventing them in future.

In the first place, I consider that it is actually necessary that every compass should be examined before it is received into store, to see that its bearing is correct, by comparing it with a certain standard compass. Its intensity of direction ought also to be ascertained by observing the number of oscillations it will make in a given time, and all those which did not give a certain number should be rejected, as should also all those which did not preserve the balance without sealing-wax. It would likewise be necessary to examine the cards and bowls, to see that they were correctly centred. The accuracy and power of the instruments being thus ascertained, they should be kept in store in boxes which would contain *two cards* instead of one only, as at present; the two cards should be laid with their faces downwards, the needles parallel to each other, and with their opposite poles corresponding, which should then be connected with short bars of soft iron. By this means the circulation of the magnetic fluid would be ensured, and the intensity of each pair of needles preserved whatever might be the irregularity of the stowage.

How far the above remarks may be thought deserving the attention of my Lords commissioners I am unable to say; I shall only observe, that I have endeavoured to avoid noticing anything which could carry the appearance of peculiarity or whim, confining myself only to the most obvious and striking defects of the instruments in question; and which I will venture to say can never be rendered completely serviceable without adopting some such means as I have proposed.

I am aware that many nautical men set a very little value upon the compass, but this I conceive arises from the constant defects it is found to exhibit, and not that from its nature it is incapable of rendering them essential service. If, indeed, a lunar or other astronomical observation could be made at all times, this instrument might perhaps be nearly dispensed with, but as it frequently happens that several days pass without such an opportunity presenting itself, the perfection of the compass cannot be an object of indifference; and I cannot help thinking if this perfection was attained that a great degree of accuracy might be introduced into the dead reckoning, and many severe and afflicting losses prevented.

I have the honour to be, &c.,

PETER BARLOW.

[Our readers will no doubt agree that this is one of the most important documents which has yet appeared in these pages. It is really fearful to contemplate the extent of the danger which might arise from an evil so clearly pointed out, and, much as we have heard of "making the land to a mile," the frequent boast of a good *reckoning*, when we set against it, the inattention to local attraction, and the nature of the compasses which it appears were but a few years ago supplied to her Majesty's navy, together with bad, or even the best, steerage, we should be much inclined to set down all *landfalls* to mere chance. No wonder our tars of the old school thought so much of their three *Ls*, the *lead*, the *log*, and *look-out*; perhaps the last was as much required as the first. We have not yet been able to ascertain whether the good office which Professor Barlow (we believe voluntarily) performed was ever followed up by his recommendations being adopted; however, we have the satisfaction of stating that this too-long-neglected subject is likely to be dealt with to advantage by the recent appointment of a committee by the Lords commissioners of the admiralty to examine into all its details. This magnetic committee consists of the hydrographer to their lordships' captain, F. Beaufort; Professor Christie, of Woolwich; Commander J. Johnson; Captain J. C. Ross; and Major Sabine, R. E., names which combine science with long experience, and which will ensure to the navy, not only a total abolition of such grievances as are pointed out by Professor Barlow, but a supply of compasses on the best possible principle of construction.—Ed. N. M.]

HARBOURS OF THE UNITED STATES, SOUTH OF THE CHESAPEAKE.

THE following letter from the Secretary of the Navy transmitting a copy of the report of commissioners charged with the examination of harbours south of Chesapeake bay, with a view to the establishment of a navy-yard, will be acceptable to our nautical readers.

" February 2, 1837. Read, and laid upon the table.

" Navy Department, February 1, 1837.

" Sir, in compliance with a resolution of the House of Representatives of the 28th ultimo, I have the honour to transmit, herewith, a copy of the report of the commissioners charged with the examination of ports and harbours south of the Chesapeake bay, with a view to their comparative advantages for the establishment of a navy-yard.

" I am, with great respect, your obedient servant,

" M. DICKERSON,

" Secretary of the Navy."

" The honourable the SPEAKER
of the House of Representatives."

The undersigned, commissioners under a resolution of the Senate of the United States, " to survey and examine ports south of the Chesapeake, with a view to their comparative facilities and advantages for the establishment of a navy-yard," have the honour to report :—

That they have given to the subject all the reflection which its national importance demands; have personally inspected the several ports whose draught of water gave claim to public attention; and have maturely weighed their relative pretensions to the favourable consideration of the government.

The undersigned, in arriving at a preference for a particular port, have discarded all prejudice of a local or sectional nature, and have solely been influenced by a strict regard to the public good. As a basis for their decision, they have looked to fundamental principles, and have been guided by the great desiderata in a naval establishment on shore. They may be classed under the following heads, and obtain value in the order in which they stand, viz :—

1. Sufficient depth of water to permit free access, at any state of tide, for the heaviest class of ships of war.
2. Defence by land and by water.
3. Resources and supplies of every kind for the speedy equipment of fleets.
4. Salubrity at every season of the year.
5. Ample supply of fresh water.
6. Facility for wharfing and docks.

As no port south of the Chesapeake possesses all these advantages, (and, indeed, there is but one in the whole Union which does possess them,) it has become the duty of the undersigned, by the resolution of the senate, to designate that one which seemed to them to have the greater number of approximating qualifications.

Charleston, S. C.

The port of Charleston, being the first in magnitude, and also first in the order of inspection, claimed their primary attention. This harbour has been repeatedly surveyed, and recently by competent officers of the United States army. The chart projected by them has been tested by the undersigned, and the result proved its essential accuracy: from which, together with a naval survey in 1825, and valuable information obtained from experienced pilots and other sources, it would seem to be established, that the bar at the mouth of the harbour is the main obstacle to its present usefulness as a naval station; for, being deficient in depth of water, no vessels larger than sloops of war can pass, and they only at high tides, and with a smooth sea.

This bar, which is of sand, forms an almost continuous chain of breakers, running nearly parallel with the coast, for nine or ten miles. The tides and freshes of the river have broken through this barrier, and four channels have been formed for the discharge of the waters. Three of them are now incapable of being navigated by large vessels, and the fourth, the main channel, is liable to great changes from heavy gales. Within twenty years it has been entirely removed from its former site. It is displaced by more than half a mile; and where formerly passed in security ships of seventeen and eighteen feet draught of water, now rolls a dangerous breaker. The undersigned, in contemplating the possible obliteration of the present ship-channel by the deposit of some future gale, do not regard it as a lasting injury to the port; for they believe that a new, more convenient, and, perhaps, deeper channel may be effected, by obstructions in the tide-way, which

shall guide to a given point on the bar the vast and swift column of water composing its freshes and ebb. Such is observed to be the action presented by the fortification now being erected in the river, which has already, though incomplete and not very extensive, caused, in the opinion of pilots, the overfall-channel to be considerably deepened. The effect of so much power, directed on such an easily-moved substance as this bar, when aided by dredging machines, cannot be questioned. The noble harbour within, sufficient in every respect to accommodate a large fleet and of the heaviest draught, the great seat of southern wealth and southern commerce, all seem to bespeak for it a generous expenditure of the national treasure. But these speculations, whether true or otherwise, belong to the engineer, whose knowledge of currents and their effects will have due weight in such a contingency. Charleston is now considered accessible with a draught of $17\frac{1}{2}$ feet, but with the aid of steam, a good tide, and smooth water, a ship drawing $18\frac{1}{2}$ feet may be safely conducted. The average rise of the tide is 6 feet, which is increased or diminished by the violence and duration of the seaward or landward winds; and this rise and exterior influence is applicable to all the harbours of the Carolinas and Georgia. There can be no difficulty in obtaining eligible sites for a navy-yard, whenever it may be resolved to establish one in Charleston.

Beaufort, S. C.

This harbour was surveyed by Lieutenant Stockton, in 1828. His report has been tested by soundings and observation, and its general correctness ascertained. The arm of the sea which enters between Hunting and Hilton's islands is known as Port Royal sound. It is sufficiently deep and capacious to accommodate the largest fleets, but like all the ports south of the Chesapeake, labours under the disadvantage of having a bar placed at its entrance. From the bar to Beaufort the distance is about eighteen miles. A better position for a navy-yard can be found in the vicinity of Beaufort than at the town. The bar has an average depth of 17 feet, which permits, with a full tide, the passage of a frigate. Beaufort is placed in the line of internal navigation between Charleston and Savannah, and hence, if blockaded by an enemy by sea, has a safe and speedy transport of supplies. The absence of a fresh-water river and marshes seems to assure as great a degree of health as in any of the southern harbours.

Savannah, Georgia.

The bar at the mouth of the Savannah river is the deepest and most accessible of any on the southern coast. The average depth is nineteen feet at low water; and hence, with a full tide, a frigate may pass in safety. But although thus favoured at the entrance, these advantages are soon lost in ascending the river. The first point of effectual defence, salubrity, and locality, for a navy-yard, is Cockspur island, situated five miles within the bar, and two miles within the river; but a frigate cannot reach this point, by reason of an extensive sand-bank half a mile below it, on which, but fourteen feet, at low water, can be obtained. In ascending still farther up, the shoals are frequent, and of less draught of water; and the river, at first brackish, becomes fresh; and hence, in so low a latitude, and surrounded by marshes, is unhealthy in summer.

Darien, Georgia.

Merchant ships of heavy burden can enter the port of Darien; but it is unsuitable to naval purposes by reason of its unfavourable locality, being surrounded by swamps and morasses, and on account of its being placed on a fresh-water river, which, in so low a latitude, must cause unhealthiness. The port of Darien can have no greater pretensions than the ingress of a sloop of war; and, hence, cannot compete with the deeper harbours in the same State.

Brunswick, Georgia.

The waters forming the port of Brunswick are generally designated as Turtle river; but, properly speaking, it is an arm of the sea, which, entering between the islands of Jekyl and St. Simon's, flows into the interior for upwards of twenty miles, forming a wide, deep, and swift column. As no fresh-water river empties into this basin, it is always salt, free from freshes and alluvial deposits; and hence, from an early period of time, no change whatever has been perceptible in the soundings or general character of the port. From the large islands of St. Simon's and Jekyl, (which are distant from each other about one mile,) and running seaward for six miles, are found jutting two extensive sand-pits. At low water portions of them are laid bare; and unless the sea is unusually smooth, they form, in nearly their whole extent, lines of continuous breakers. Between these lines of surf lies the channel, which is three quarters of a mile wide between the spit-heads, and which enlarges to a mile soon after entering. Between the spit-heads we found twenty-two feet at low water. Proceeding towards the land by traversing the whole breadth of the channel, the soundings gradually shoaled to eighteen feet, which is the least draught of water found in the channel-way. About one mile within the spit-heads is the "middle ground," which is a bank of sand resting on the southern or Jekyl spit, and jutting into the channel-way some 200 fathoms; but leaving a sufficiently wide 18 feet passage towards the St. Simon or northern spit, for a large ship even with an adverse wind: the middle ground has but fourteen feet at low water. Entering still further up, the soundings gradually grow deeper, so that when between the islands it has obtained a depth of twelve fathoms. The vessel is now in safety. On the right is St. Simon's sound, which, together with similar watercourses still further north, affords a safe internal navigation to steam boats and craft to Savannah and Charleston. To the left is the arm of the sea, (called the Turtle river,) from which, by Jekyl and Cumberland sounds, is a southern internal navigation as far as St. Mary's. The course from sea to the mouth of the harbour is nearly west-north-west, keeping the northern breakers on board; the channel then runs south and south-westerly, and, making a short turn to the north-west, we arrive at the town of Brunswick—insignificant at present, but destined, we believe, through her rail-road and canal to future importance. A shoal of soft mud, close to and below the town, on which but twelve feet can be found at low water, seems to indicate some other point in the harbour as a more suitable position for a navy-yard. We believe Bithe's island, on the opposite shore, to be the most eligible. It contains some hundred acres, covered with timber, and every way convenient for wharfs, docks, &c., and for a nursery of

the live oak; it is distant from Brunswick two miles, and has bold water to within a few fathoms of the shore. There is no doubt that the port may be strongly fortified. The islands of St. Simon and Jekyl present suitable positions for extensive works; and a sand shoal two miles within and in the centre of the river (dry at low water) affords a third basis for powerful defence, and steam batteries will complete the whole. The average rise of the tide is six feet, which gives, at high water, on the bar, twenty-four feet; sufficient for a frigate. It is deemed healthy, and the absence of a fresh-water river, or fresh-water swamps, seems to justify the opinion.

St. Mary's, Georgia.

The harbour of St. Mary's, on the south frontier of Georgia, has a bar very similar to that of Charleston in its general features and depth of water; it is subject to the same vicissitudes from great gales. In twenty years the ship channel has been forced to the southward; and the site of the passage, where formerly passed the largest sloop of war in the navy, is now filled up to eight feet. Under the most favourable circumstances of wind and tide, the present ship channel may be stated at thirteen feet at low water; the average rise of the tide is six feet. The localities are unfavourable for the establishment of a navy-yard; and, regarding the harbour in every light, we feel compelled to express an opinion adversely of St. Mary's as a port suitable for naval purposes.

Key West and the Tortugas.

Circumstances beyond our control, and known to the department, have prevented an extension of our survey to Key West and the Tortugas; but our knowledge of those places, obtained in the course of service, justifies us in pronouncing an opinion adverse to them for the establishment of a navy-yard.

Key West is but a small island, distant from the main; and the Tortugas a cluster of islands still smaller. The one can have but limited resources; the other none whatever, not even fresh water. Being *islands*, and incapable of succour in the presence of a superior force, they must eventually fall, when cut off from supplies. The more valuable either might become by the establishment of a navy-yard, the more it would invite attack from a powerful enemy. Their position is no doubt commanding, but we deem them not worthy of greater value, when *fortified*, than to afford a rendezvous to our cruisers, and to give shelter and protection to them when pressed by a pursuing enemy.

The Comparison.

The undersigned, in obedience to a resolution of the senate, have arrived at the point where they are directed to report on "the comparative advantages and facilities of ports south of the Chesapeake, for the establishment of a navy-yard." Depth of water and easy access being objects of the first consideration, they are of opinion that the ports of Charleston, Darien, and St. Mary's, being deficient in depth of water to permit the entrance of a larger ship than a sloop of war, are unfit to compete with the frigate harbours of Beaufort, Savannah, and Brunswick.

The preference is narrowed down to one of these; and having duly weighed their relative pretensions, we have no hesitation in preferring Brunswick. Beaufort must yield to her in the essential points of depth of water, easy access, and capability of defence. Savannah must give way, for her easier access and greater depth of water on the bar cannot be carried up the river to a site safe from the sea and an enemy, and applicable to the establishment of a navy-yard.

If a frigate could but reach Cockspur island, the opinion expressed in favour of Brunswick might be recalled. Brunswick is the most southern frigate harbour on the Atlantic seaboard. Placed near the *great outlet* of the commerce of the West Indies and Gulf of Mexico, her position in a state of maritime warfare would be invaluable, since the navigating interests of an enemy must pass by her door. All which is respectfully submitted.

M. T. WOOLSEY,
ALEXR. CLAXTON,
E. R. SHUBRICK.

December 20, 1836.

A FEW WORDS ON ASTRONOMY.

Concluded from page 594.

3. If England may be permitted to cast a proud eye upon the period we have been considering, she cannot but contemplate with the bitterest dejection that which succeeded it. As if Providence had decreed that there should be a balance in the glory as well as in the power of nations, no British name has been allowed to share in the intellectual triumphs which illustrated the middle and the close of the eighteenth century. Truth and justice demand from us this afflicting acknowledgment, while they award to Clairaut, Euler, D'Alembert, Lagrange, and Laplace, the high honour of having completed the theory of the system of the world.

The problem of two bodies, or the determination of the motions of one planet revolving round another, had received from Newton the most perfect solution. He had even shown that the problem of three bodies, in which the action of a disturbing planet is introduced, could be resolved by the principles which he had established; and in the case of the lunar irregularities he had succeeded in explaining no fewer than *five* of the most important. At this point, however, the power of analysis failed, and it was left to a succeeding age to complete the noble edifice which he had founded. The results of the labours to which we allude are developed in the *Mécanique Céleste* of Laplace, a work which ranks next to the *Principia*; but it would exceed our limits were we to assign to each of the astronomers we have named their respective claims to immortality. By the improvements they have made in the analytical art, they have solved the problem of three bodies, and have computed, with an accuracy almost miraculous, the various disturbances which affect the motions of the principal planets. But though all the bodies of the system thus exercise over each other a reciprocal influence, yet it has been proved by Lagrange, that the resulting irregularities are all periodical, and that while the form and position of their orbits are ever changing, their

mean motions and mean distances from the sun are subject to no variation. Amid the actions and re-actions of our system, therefore, the general harmony is never broken, and from the arrangements of this celestial mechanism, disorder and decay have been for ever excluded. What a sublime and instructive picture is thus presented to man!—while he and everything around him bears the impress of his fleeting nature,—while even the solid globe on which he treads is rent by convulsions, and agitated in the conflict of its elements; yet does the general system stand unshaken amid the oscillations of its parts, and thus testify to each generation, as it comes, the wisdom and the power with which its great Architect has provided for the stability of his material throne.

4. But though the spirit of English science had thus been slumbering amid the intrigues of faction, and the apathy of short-lived and unenlightened administrations, the exertions of individual genius were preparing in secret for new achievements. The invention of the achromatic telescope by Dollond, and the improvement of the reflectors by Short and Mudge, had armed the observer for the great subject of sidereal astronomy—for examining the phenomena and condition of the stars, and the structure of the groups and systems which the telescope descried in the immensity of space. In this period, doubtless the most brilliant in the annals of discovery, the name of Herschel stands in proud pre-eminence, as the founder and the most successful cultivator of sidereal astronomy; and when we add the name of his accomplished son, Dr. Brinkley, (bishop of Cloyne,) of Sir James South, and of Mr. Struve, we complete the list of the great men who have immortalized themselves in this difficult and boundless field of inquiry.

Before we proceed to give an account of their labours, it is necessary that the reader should have some idea of the distance and magnitudes of the bodies which are to come under his consideration. That the nearest of the fixed stars are not placed at immeasurable distances has been fully established by the numerous and ably-conducted observations of the Bishop of Cloyne. This distinguished astronomer has found that the star *α Lyræ* has a parallax of $1''$. 1, or, what is the same thing, that the radius of the earth's annual orbit, would, if seen from that star, subtend an angle of $1' . 1$: hence it follows, that its distance is 20,159,665,000,000 miles, or twenty billions of miles. Sir William Herschel, from repeated measurements, considers the diameter of *α Lyræ* as three-tenths of a second, and, consequently, its diameter must be *three thousand times* greater than that of our sun, or 2,659,000,000 miles, or *three-fourths* of the size of the whole solar system, as circumscribed by the orbit of the Georgium Sidus. This extraordinary result does not entirely accord with a curious calculation of the Marquis Laplace, that a luminous star, of the same density as the earth, and whose diameter is two hundred and fifty times that of the sun, would exercise such an attraction over the rays which issued from it, that they could not arrive at the earth; the consequence of which would be, that the largest luminous bodies in the universe would, on this account, be invisible. But, however this may be, it cannot be doubted that the scale of distance and magnitude for the fixed stars cannot be greatly different from that which we have stated.

It was to regions so remote, and to bodies so vast, that Sir William

Herschel directed his powerful telescopes, after he had extended the limits of our own system, by the discovery of *one* primary and *eight* secondary planets. Professor Kant and the celebrated Lambert had suggested the hypothesis, that all the bodies in the universe were collected into nebulæ, and that all the insulated and scattered stars formed part of the nebula to which our own system belonged. Pursuing this happy thought, Sir William Herschel examined no fewer than 2,500 nebulæ, and he was led to the opinion, that the galaxy or milky way was the projection of our own nebula in the sky, and by *gauging* the heavens, or counting the number of stars which occur in the same space in different directions, he was enabled to determine the probable form of the nebula itself, and the probable position of the solar system within it. But while this idea impresses us with its grandeur, it at the same time furnishes us with a scale for estimating the immensity of nature. If all the separate stars which the most powerful telescope can descry, are only part of our own nebula, what must we think of the millions of nebulæ, some of which exhibit, by their proximity, the individual stars of which they are composed; while others, as they recede from our failing sight, display only in the best instruments a continuous and unbroken light, in which the spaces between the stars can no longer be seen? From the systems which roll within these groups of worlds, a new firmament of stars will be seen, and each system will have its milky way, exhibiting the projection of its nebula, varying in form and in lustre with its locality within the group. It is in vain to pursue ideas so vast and overwhelming: it is enough that the mind tries its strength, and stands self-convicted of its weakness.

Let us, therefore, turn our attention to nearer objects—to our own nebula, and the stars which compose it. Not content with determining the probable position of the solar system within the nebula of the milky way, Sir William Herschel conceived the idea of ascertaining whether that system was stationary or moveable. By a comparison of the proper motions of the fixed stars, he determined that the solar system was advancing towards the constellation Hercules, and that, if it were viewed from one of the nearest of the fixed stars, the sun would appear to describe an arch of about *one second*. In reasoning respecting the insulated stars, which belong to what we may now call the *solar nebula*, he justly conceived that those which were double must form a *binary system* or systems, in which the two stars revolve round their common centre of gravity. We have said in many cases, because there can be no doubt that two stars may often form a double star, when they have no connexion with each other, but that of similarity of direction. The same conception is applicable to more complicated systems, and he has shown how three or more stars may be permanently connected, by revolving in proper orbits round a common centre.

These views, at first entirely speculative, received from subsequent and long-continued observation a very remarkable confirmation. If we suppose a line to join the centres of the two stars which compose a double-star, then if the two stars have no relative motion, this line must form an invariable angle with the line or direction of their daily motion. By means of an ingenious position-micrometer, Sir William Herschel determined this angle, (called the *angle of position*,) for seven hundred and two stars, between 1778 and 1784. After a lapse

of twenty years, he repeated his observations on the same stars, between 1800 and 1805, and he had the satisfaction of finding, that, in more than fifty double stars, there had been a decided change either in their distance, or in the angle of position. In this way he discovered that one of the stars of *Castor* revolved round the other in three hundred and forty-two years; that the small star of γ *Leonis* performed its circuit in 1200 years, that of ϵ *Bootis* in 1681 years, that of δ *Serpentis* in 375, and that of γ *Virginis* in 708 years.

By this great discovery, the greatest, unquestionably, in the history of astronomy, the existence of systems among the fixed stars was completely established; but so far did Sir William Herschel's labours transcend those of the age in which he lived, that no attempt was made to repeat and to extend them. They were scarcely admitted into any astronomical work; they were ridiculed by men whose reputation had been eclipsed by his own; and they were received with a sort of incredulous wonder, even by the most ardent lovers of astronomy. The progress of knowledge and of discovery had paved the way not only for the highest achievements of Newton and Laplace, but also for their immediate reception among philosophers; and had these great men never lived, science would, in a very few years, have received from other minds the same splendid accessions. The discoveries of Herschel, on the contrary, exhibited no continuity with those of his predecessors. Before his day sidereal astronomy had no existence; nor had the wildness of speculation ventured even to foreshadow its wonders. Entrenched in the remoteness of space, and among spheres which no telescope but his could descry, her walls were unscaled, and her outworks even unapproached. His genius, however, enabled him to surmount barriers hitherto impregnable, and conducted him in triumph into the very stronghold of her mysteries. The cessation of such gigantic labours would have been afflicting to science, had not that same wisdom which provided for the continuity of his name, provided also for the continuity of his labours.

In the year 1816, four years before the death of his venerable father, Sir John Herschel had begun a re-examination of the double and triple stars, and had made some progress in it. The same idea had occurred to Sir James South, one of the most able and enterprising astronomers of the present day, and it was agreed that they should undertake the work in concert. They accordingly began in March 1821, and continuing their observations in 1822 and 1823, they were able to communicate to the Royal Society in January, 1824, the position and apparent distances of 380 double and triple stars, the result of above 10,000 individual measurements.* The instruments which they employed were two achromatic telescopes mounted equatorially: the object-glass of the smallest had an aperture of three inches and three quarters, and a focal length of five feet, and was made by the late P. and J. Dollond. The power usually employed was 133, but powers of 68, 116, 240, 303, and 381 were sometimes used. The largest telescope was seven feet in focal length, with an aperture of five inches, and is supposed to be the best Mr. Tully ever executed. The power commonly employed was 179, though 105, 273, and sometimes 600 were used.

No sooner had Sir James South completed his share in this great

* This Memoir was honoured with the astronomical prize of the French Academy of Sciences.

work, than he began another series of observations of equal difficulty and importance. They were made principally at Passey, near Paris, with the instruments above mentioned; and in November, 1825, he communicated to the Royal Society the apparent distances and positions of four hundred and fifty-eight double stars, of which one hundred and sixty had never before been observed.

While these observations were going on in England, an able continental astronomer, M. Struve, director of the Imperial Observatory of Dorpat, in Livonia, had occupied himself with the same subject; for such was his assiduity and zeal, that in four years he completed his *Catalogus Novus Stellarum Duplicium et Multiplicium*, containing no fewer than three thousand and sixty-three stars.* These observations were chiefly made with a telescope by Fraunhofer, which the Emperor of Russia had presented to the observatory of Dorpat. This magnificent instrument has a focal length of thirteen feet, and an aperture of nine inches, and cost thirteen hundred pounds. The king of Bavaria followed this noble example by ordering a still finer instrument for the same purpose; and the king of France, with a liberality still more patriotic, has had executed in his own capital an achromatic telescope, surpassing them all in magnitude and power. What a mist is it to English science, that the name of the most accomplished prince who has as yet occupied the throne of Charles I. does not appear in the list of sovereigns who have thus been rivalling each other in the patronage of astronomy! What a mortification to English feeling, that the subject of sidereal astronomy created by the munificence of George III. should thus be transferred to the patronage of foreign monarchs!

In taking a general view of the labours of Sir John Herschel, and Sir James South, it appears that there are *sixteen* binary systems of stars perfectly established, and at least *fourteen* of which the annual motion is not exactly determined.

The established binary systems, with their periods and annual motions, are given in the following table. The signs \div and $-$ indicate the different directions of the motion.

Names of Stars.	Periods. Years.	Annual Motion. °
ξ Ursæ Majoris	51	-7.02
70 p Ophiuchi	53	-6.81
σ Coronæ Borealis	169	-2.13
Castor	370	-0.971
6 i Cygni	493	÷ 0.73
δ Serpentis	496	-0.726
γ Virginis	540	-0.667
s f μ Bootis	623	-0.58
μ Draconis	623	-0.58
12 Lyncis	646	- 0.56
η Cassiopeiæ	700	-0.513
49 Serpentis	706	+ 10.5
ξ Aquarii	804	-0.448
ε Bootis	822	+ 0.438
5 Lyræ	1108	-0.325
γ Leonis	1200	+ 0.30

* The labours of this indefatigable astronomer have been rewarded by the Royal Society of London with one of their gold medals.

Of these stars, ξ Ursæ Majoris possesses a very peculiar character, as the two stars revolve round their common centre of gravity with a motion so rapid as to admit of being traced and measured from month to month.

Another object of very peculiar interest to astronomers is ζ *Herculis* which both Sir John Herschel and Sir James South have found to be *single*, with the best telescopes. In July, 1782, however, it was a distinct double star, the greater being of a beautiful bluish white, and the lesser of a fine ash colour. In 1782, Sir William Herschel found the interval between the two stars to be one half the diameter of the smaller one. In 1795, he could with difficulty perceive the small star. In 1802, he could no longer perceive it; but in a very clear night, the apparent disc of ζ *Herculis* seemed to be lengthened in one direction. In 1803, with a power of 2140, he found the disc a little distorted, but he was convinced that about three-eighths of the apparent diameter of the small star was wanting to make the occultation of it complete. The Dorpat telescope has since separated these two stars.

It is scarcely possible, we think, to peruse the preceding details concerning the history and present advanced state of astronomy, brief and imperfect as they are, without looking forward with the most intense interest to the future progress of the science. Even within our own system much remains to be investigated. The nature of the sun, and the constitution of its surface in relation to the more or less copious discharge of light and heat; the physical condition of the moon, which may yet exhibit among her mountains the works of living agents; the theory of the four new planetary fragments, which hold out to physical astronomy some of its most perplexing problems; the forms, the rotations, and the densities of most of the secondary planets, are all subjects fraught with the deepest interest to astronomers. The comets, too, those illusory bodies of which we scarcely know whence they come, or whither they go, have now been brought within the grasp of regular observation. The discovery of two comets with short periods, one of three and one-third years, revolving within the orbit of Jupiter, and the other with a period of five years, revolving within the orbit of Saturn, enables us to observe them period after period, and to study their motions as well as their physical constitution. But how shall we describe the future prospects of sidereal astronomy? In our own nebula we may trace the motion of the solar system round some distant centre; we may discover the causes which produce the phenomena of variable stars; and we may witness the extension of the law of gravity to the movements of binary, and even of more complicated, systems. Among the nebulae beyond our own, discoveries still more extraordinary await us. May we not see even the operations of those powerful agents by which whole systems are formed, and of those still more tremendous forces by which other systems are destroyed? In the changes of particular nebulae, and in the condensation of nebulous matter into lucid centres, and even into central stars, we recognize the first of these agents; and in the sudden disappearance of the most brilliant stars, we have some indication of the second. Thus may we study, in these distant regions, the active operations of creative power; and thus, in relation to the past and the future in our own globe, may we be permitted to witness the types of those great events which are necessarily excluded from the short span of our existence.

BRITANNIA, OR THE MORAL CLAIMS OF SEAMEN.*

London, August, 1837.

MR. EDITOR.—The above very able work is to be hailed by all who have any feeling for that most neglected of all human beings, “the sailor” as a prelude (it is to be hoped) to some measures, which may exonerate our country, from the charge that the reverend author so forcibly, and so truly, makes of the unaccountable apathy existing, in respect to his (the sailor’s) condition. This condition, he has so exactly described, that, to a man who is aware of the general ignorance of the public, on the subject of the abandoned life led by the British sailor, it is somewhat extraordinary how he has collected the materials for his essay—an essay which lays open all the evils so fully and clearly as to leave no room for addition; and these evils are so truly dreadful, that the imagination cannot well conceive anything worse. Well, may Mr. Harris be induced to say, that their neglected state is such as would almost lead one to believe that they are suffering for sins committed in a former state of being, and that for a parent to send a son amongst them is almost abandoning him to certain destruction. Hear this, ye British people! ye who have been in the habit of lauding “honest Jack,” as an emblem of all that is good, brave, and generous! You who have placed your firm reliance upon his *steadiness and principle*, for your protection in the hour of danger, look upon his dreadful condition, so truly described by a British clergyman, and say how you will answer for the state of moral degradation in which he is so heedlessly suffered to exist without almost an effort being made to better it.

Let any one read, Mr. Editor, in the very last number of your excellent work, the account therein given of a meeting of the friends of “the distressed and shipwrecked sailor’s asylum,” and thus he will see how the speakers had to deplore the indifference of the public to all connected with the British sailor. Truly, England has much to answer for, and has a long arrear of debt due to her tars. Every man in England who can do so should not fail to read “*Britannia*,” and not only to read it, but to set about doing all in his power to mitigate the evils therein described.

The readers of the *Nautical* will therein see that the picture I have from time to time drawn of the British sailor has been in no means over-coloured; indeed, in comparison with the description which the worthy clergyman gives, all I have said almost falls into insignificance. “*Britannia*,” however is not to be contradicted, not any one word of it, and I am content to see my statements so ably corroborated, and to add my humble testimony to the correctness of all that Mr. Harris has said.

It must however be still regretted, that, in such an able exposure, no allusion is even made, to amending the condition of the seamen, by some more strict rules for controlling him, but that like most of the very excellently disposed contributors to the *Nautical*, on this subject, he is for accomplishing their reformation with the assistance of so-

* A work recently published by Ward, Paternoster Row, from the pen of the Rev G. HARRIS, see p. 277.

cieties and the formation of plans, which are to work upon the sailors' better feelings.

Now, Sir, with submission, I must say, these measures are more adapted for rearing and orderly conducting a *new set* of seamen than for amending those already existing.

But still, there is such an excellent spirit at the bottom of such a truly laudable and Christian-like intention, that it is difficult to find fault with it. The truth however must be spoken; existing habits—habits, which it is to be feared will not easily be eradicated; habits, which for ages perhaps to come, will be more or less those of the sailor; require something more than mere advice to alter or eradicate.

It is astonishing that people cannot see the wide distinction to be drawn between regulating seamen and controlling subordinates on shore. There may be no law necessary for punishing a domestic servant, should he refuse the orders given him by his master; and even should he accompany breach of duty with insolence, he can be turned out of the house "*instanter*;" and perhaps no inconvenience ensues, as he can be replaced by another. But our wise legislators will not see that such an occurrence at sea is altogether another affair; nay, so far do they seem to consider an absolute refusal of duty, on the part of a sailor, to be a matter of any importance, though it may, and often does endanger, and even cause the loss of, the ship, that they have only subjected him in consequence to a mulct of a sum of money equal to double his pay, for the time he refuses such duty.

Thus a man, or we will suppose the whole crew of a ship, may take it into their heads to "*have a blow out*." We will suppose them to have got some spirits on board, perhaps robbed the cargo, and they are determined to have a good "*soaking set to*." Down they all go below, and leave the ship to the officers! They get "*gloriously drunk*," and after awhile come upon deck to resume their duty. They accompany all this with the most outrageous threats, and every kind of abusive language. They are below for twelve hours; and what punishment does the law inflict, for having thus endangered the lives and property on board? why, Sir, *the mulct of twenty-four hours pay!* which may amount to about one shilling or one and sixpence; really those who do not know what a precious code of laws Sir J. Graham has provided for us, can hardly be brought to believe a statement such as this, to be (as it certainly is) not merely true, but that it is a real description of a scene which is, in a greater or less degree, occurring on board British merchant ships every day.

I state this as a fact not to be contradicted, monstrous as it will doubtless be considered by the uninitiated; and to mend the matter, Sir James, in the plenitude of his wisdom, has further decreed, that the men who do this *are not to be discharged!* they must be kept on board, let the voyage be ever so long, and brought back to England, under penalty of fine and imprisonment of the master, who must return them to the "Register office of Seamen;" which *very important office*, is not framed for the publishing of such men's deeds, much less for punishing them, but merely "*to register their names as having made a certain voyage in a certain ship*." What earthly use

there is in this I cannot discover ; it causes a most useless trouble on the part of the master, in returning muster-rolls (and copies) of his crew, and he is subjected to heavy fines, if this is not done correctly.

The *wisdom* of Sir J. Graham's law, may be put in a stronger light ; it is possible to suppose, and may certainly happen, upon long voyages which a ship makes, that a man's breach of duty, even for so short a time, that the mulct of his wages for double that period, may not amount to the *fraction of a farthing*, may not only endanger but lose a ship. The very refusal of letting go a rope when ordered—a momentary absence of duty—may cause a ship's loss ; and for this, no authority of the present day *can* inflict a punishment beyond double the amount of the pay due for the time he refuses his duty ! You may bring *an action at law for damages*, but there is nothing criminal.*

Surely something should be done to cure all this : I will even suppose that "Britannia," and your worthy correspondents, could so far reform sailors as to make them the reasonable creatures that others are in subordinate situations on shore ; yet, even then, something should be done, to ensure, as far as possible, "obedience" to the commander's orders on board ship. Surely, for such evils as I have stated seamen may commit, with almost perfect impunity, some punishment should await them. Is it to be borne that a master, to whom is committed the charge of a valuable ship and cargo, and the more important one, the lives of the crew and passengers, should be in a situation of being obliged to submit to the continued insolence of a drunken, worthless fellow ? have his orders continually disobeyed ? see his ship put in jeopardy by such a being ? and yet, absolutely be obliged perhaps to sail round the world with him, or even a whole crew of such men ? and to be forbidden even to discharge such characters ? It is too monstrous to be endured much longer, and I repeat, will be working its own cure some day, ere long, by some such acts as will open the eyes of our legislators in a manner not to be mistaken.

It is undoubtedly to be admitted that power is liable to abuse, and that those who command vessels may not be exactly such as should be entrusted with too much of it ; but where is the evil of enforcing mere "obedience" to orders, of the propriety of which no one but the master can possibly, in the very nature of things, be the judge ? All that is necessary is to insist upon that "obedience," acknowledged by all to be due from inferiors to those above them : this principle is acknowledged by all laws, human and divine, to be indispensable in the state in which society is held together, and in *every situation on shore* is acted upon to the very letter. But in a ship where, of all other places, the safety of everything actually depends upon implicit and ready obedience, there alone is this acknowledged obligation to be suspended ! And what is the consequence ? as I have before stated, a degree of tyranny which brutalizes even the superiors in the necessary exercise of their

* The Note "Britannia" gives, referring to this precious office, as extracted from the report of the "Shipwreck Committee," evinces some carelessness on the part of the said committee, as the *valuable office in question*, for registration of seamen, *does not require, nor even suggest*, any notice being taken of "*character or conduct*," in recording seamen's voyages, and the names of the ships sailed in.

authority. It is unquestionable that the tendency of a sea life on commanders and officers is to brutalize them; and it is a common observation, that a chief mate should be able to *knock down every man in the ship*. And why is all this exercise of tyranny necessary? Because *there is no law* to punish a man for not doing his duty. Surely the refusal of obedience might be fairly punished with forfeiture of wages and imprisonment. There is no very great concession of power here that can be liable to abuse: it would be no very unreasonable demand, that if a servant will not do the duty he has engaged to do, he may be discharged. It is the most outrageous enactment on the part of our lawgivers to insist upon the contrary; it is against reason and common sense; the forfeiture of wages is also due to such breach of contract, and imprisonment as a means of preventing its repetition.

This mode of construing what is due from a sailor would go further, in my humble opinion, in reforming his character, than all the plans of the well-meaning philanthropists of the present day. Add to this, every possible means of ensuring him justice, especially in the regularity and quality of his provisions, and every practicable means of ameliorating his condition and amending his habits, *and the respectability of those over him would be decidedly improved at the same time*; and, as a natural consequence, the abuse of authority lessened, in taking away the necessity of tyrannical measures, from the knowledge that misconduct in seamen will be punished *by law*, and that, at the earliest opportunity, incorrigible characters may be got rid of.

I wish, Mr. Editor, it were possible to describe a scene which is of daily occurrence on board the British merchant-ship, and without some such, and indeed many such, hardly a British merchant-ship completes a voyage; I mean the disgusting and intolerable language, gestures, and threats, to which a commander and his officers are obliged to submit when "honest Jack" thinks proper to have his own way. Your pages could not be sullied with anything bordering upon such description, if it were possible; it would indeed surprise the good people who are unused to the "refinements" of the British sailor; and if they would but imagine such a scene occurring in these our peaceable establishments, they would then be able duly to appreciate the very enviable situation of such as are, like me,

A MASTER OF A BRITISH MERCHANT-SHIP.

P. S. I intend to offer some remarks upon "Britannia's" proposed methods of improving the condition of seamen, being willing to co-operate to the utmost in such as I think are calculated to effect good. My first object in taking up this subject being, as I have over and over again said, to show the absolute necessity of laws to control seamen in merchant-ships, and which, if any real amelioration in their state is to be effected, must precede all attempts at altering their condition for the better.

London, 12th August, 1837.

MR. EDITOR,—I am a constant subscriber to your valuable Magazine, and find frequent allusions made to an excellent work entitled "Britannia; or, the Moral Claims of Seamen Stated and Enforced," by the Rev. John Harris, and dedicated with permission to his late

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Majesty ; for which the author received a reward of fifty pounds from the British and Foreign Sailors' Society. No man more sensibly feels the claims of British seamen, and the abject condition of the worn out merchant seamen, than I do. I have read all that I could meet with that has been written on the subject, and attended all meetings that have been got up for the purpose of advocating their cause, and I am induced to notice this subject, not with a view to detract from the merits of the work to which I alluded ; but to do justice, if you will permit me through the means of your Magazine to allude to the merits of that indefatigable friend of merchant seamen, Captain H. M. Marshall, R.N., who is the author of a pamphlet entitled "An Appeal to the British Nation on behalf of the Mercantile Marine," published by Ridgway in 1835, of which "Britannia" is nothing more than an enlarged edition ; for every suggestion that is pointed out in Captain Marshall's text is enlarged on in the Rev. Mr. Harris's sermon.

Of either party, personally, I know nothing ; but as those suggestions originally appeared in Captain Marshall's work in 1835, were enlarged on by Mr. Harris in his prize essay in 1837, it is but fair that Captain M. should have some share of the credit ; and it would have been but open, candid, and manly, for the author of *Britannia* to have stated that he was indebted to Captain M. for his valuable suggestions in his "Appeal to the British Nation on behalf of the Mercantile Marine ;" that is, if he has ever seen it.

The effort that was made at the latter end of 1835, for the purpose of erecting an asylum for worn out masters, mates and seamen, in the merchant service, originated with Captain Marshall. I found by attending the annual meeting at Exeter Hall, held on the 8th June last, for the benefit of the Shipwrecked and Distressed Sailors' Asylum, that Captain Marshall undertook the office of honorary secretary to that excellent institution when it was on the eve of closing its doors ; and that he has not only restored the asylum to the confidence of the public, but is carrying on his plans for bettering the condition of the merchant seamen ; and it is but fair that a man like him, devoting his time and best energies to so laudable a pursuit, should have at least ample justice done to his meritorious exertions.

AN OLD SHIPMASTER.

[We have always been anxious to do justice to all parties, and therefore readily print our correspondent's letter. We need scarcely add our testimony to the meritorious but ill-appreciated exertions of Captain Marshall ; they are too well known already : and we have no doubt that the reverend author of "Britannia" will satisfy our correspondent (perhaps through our pages) that although rowing in the same boat as Captain Marshall he neither wishes to pluck his laurels nor to supersede him in his designs.

We understand that her Majesty has been graciously pleased to patronize the Shipwrecked and Distressed Sailors' Asylum, Cannon Street Road. Most heartily do we wish success to the managers of that valuable institution, whose object is not only to relieve seamen in distress, of every nation, without regard to religion or creed ; but also to protect others from falling into the hands of those who make a livelihood by plundering them of their hard earnings immediately on their arrival in port.

In accordance with the latter object, lodging is afforded to such seamen as choose to bring their chest and bedding to the asylum, free of expense.

An institution combining two such important objects, as succour for the distressed, and protection to the unwary from the harpies that abound in all maritime districts, and that exist only by the plunder they obtain from seamen, is well worthy of royal patronage ; and it is sincerely hoped that the example so graciously set by her Majesty will speedily be followed by those whose immediate interest is identified with that long-neglected class of our fellow-subjects, the merchant seamen.]

Nabal Chronicle.

RETURN OF HER MAJESTY'S SHIP TERROR, CAPTAIN BACK.*—We have the gratification of announcing to our readers the safe return of Captain Back, after a most perilous detention in the ice in Hudson's Strait for nearly twelve months. It will be remembered that the Terror sailed from England in June, 1836, (fortunately for her crew,) strengthened and fortified in every possible way to encounter the ice in order to make the best of her way to Wager River or Repulse Bay. The object, as we have already stated, to trace the southern shores of the Gulf of Boothia; and thence, by determining the N.E. extreme of America, to complete the whole northern coast line of that continent. Unhappily, for the present, this object has been defeated by circumstances which no human power could control, and which are best described in the following letter of Captain Back to the secretary of the Geographical Society.

"To the Secretary of the Royal Geographical Society.

"September 11th, 1837.

"Sir,—As the expedition from which I have just returned originated with the Geographical Society, and, at its recommendation, was most liberally carried into effect by his Majesty's government, I feel it incumbent on me to offer to the society an outline of the principal events which occurred from the time of my quitting England in June, 1836, till my return to Lough Swilly on the night of Sunday, the 3rd instant.

"In a statement of this description it would be impossible to enter into the detail of all the extraordinary, and, I may say, unparalleled circumstances which have marked the course of the whole of our proceedings: such details I trust I may shortly be enabled to offer to the society and to the public in a more complete form; but, in the mean time, it is due to those who took so warm an interest in the expedition to furnish them with an authentic narrative of the voyage, which must, however, necessarily be very brief, and will consist of extracts selected from my daily journal, as better calculated to convey a correct impression of the singular occurrences to which we were witnesses.

"We took our departure from Papa Westra, and steered across the Atlantic: the weather stormy. July 29.—We fell in with the ice, and on the following day we first saw the coast of Labrador, near Cape Chudleigh. Aug. 1.—Passed through Hudson's Straits, and on the 5th saw some of the Company's ships, apparently beset with ice, off the North Bluff. By keeping close in with the land we got ahead, and lost sight of them; and on the following day we were ourselves hampered. The ice was compact, and covered the horizon towards Hudson's Bay, as far as could be seen from the mast head, while to the north-west it presented a favourable appearance; I had, therefore, no hesitation in proceeding in that direction. Aug. 16.—We got a run of forty miles from Trinity Isles, yet did not get sight of Baffin Island

* See page 435 of our vol. for 1836, (vol. V. of former series,) in which appears a full account of the objects of this voyage.

till the 23rd, when we also saw Southampton Island to the south-west.

“Two days of westerly wind at this crisis would have enabled us to reach Repulse Bay; but easterly winds prevailed, and packed the whole body of ice in such a manner that all hope of retracing our steps to pass to the southward of Southampton Island, and up Sir Thomas Roe’s Welcome, was out of the question.

“On the 29th we were drifted by the ice to lat. $65^{\circ} 50'$ N., long. $82^{\circ} 7'$ W. This was our extreme north point, and here we were within forty miles of Winter Island, where the Hecla and Fury passed the winter of 1821-2. By dint of boring, the ship was worked to the southward towards Southampton Island, whither we were attracted by the flattering appearance of lanes of open water. Sept. 4.—We were only 136 miles from Repulse Bay, and two days of strong breeze would have led through Frozen Strait to our destination. During the next fortnight we continued drifting slowly to the westward, passing within three miles of Cape Comfort, a bluff headland, rising about a thousand feet above the sea. Sept. 20.—We were seriously nipped by the ice; so much so as to start some of the ship’s fastenings. On the 22nd, being within twenty-five miles of the Duke of York’s Bay, we tried to cut through the ice, but found it impracticable, as it closed immediately. From this date, the ship was no longer under our own guidance; but, being closely beset, was carried to and fro according to the wind and tide. Sept. 26.—We were drifted into lat. $65^{\circ} 48'$, long. $83^{\circ} 40'$, our extreme western point, and ninety miles from Repulse Bay. Sept. 27.—A rush of ice from the eastward lifted the ship’s stern seven feet and a half out of the water: constant easterly winds. Oct. 9.—A clear channel in shore as far as Cape Bylot for the space of twelve hours, and again on the 27th; but we were so completely frozen up we could not take advantage of it, although to effect so important an object the ice-saws, axes, and every other implement, so liberally supplied by government, were put in requisition, and all the energies of both officers and crew were strained to the utmost, but in vain.

“Oct. 17.—The thermometer fell to 9° below Fahrenheit. In the beginning of November the ship was housed in, and every arrangement made for meeting the rigour of winter: snow walls were raised round the ship, and in this manner we drifted to and fro off the high land of Cape Comfort; at times carried so close to the rocks as to excite alarm for the safety of the ship.

“Dec. 21.—A furious gale from the westward drove us off shore fourteen miles to the eastward of Cape Comfort, from which point the coast not before laid down in our charts was surveyed, as we drifted to the south-eastward for the distance of about 120 miles, as far as Seahorse Point, the eastern extremity of Southampton Island. The general character of the coast, barren hills and cliffs, varying from 750 to 1,000 feet above the sea.

“On Christmas-day the first symptoms of scurvy showed themselves, which gradually extended to all hands. At one time twenty-five men were suffering severely from it, but eventually only three persons fell victims to this dreadful disease, namely, the gunner and two seamen. In the beginning of January, during a calm, our floe of ice split with a fearful crash; and this was the commencement of a series of

shocks that nothing but the great strength of the mass of timber and iron employed in fortifying the ship could have withstood ; as it was, the vessel strained in every direction. Feb. 18.—Early in the morning (thermometer at 33° below zero) a disruption of the ice took place, and waves of ice thirty feet high were rolled towards the ship, which complained much ; the decks were separated, the beams raised off the shelf-pieces, lashings and stores used for supporters gave way, iron bolts partially drawn, and the whole frame of the ship trembled so violently as to throw some of the men down. Yet this was not our worst disaster. On the 15th of March, while drifting to the south-eastward off a low point, since appropriately named Terror Point, a tremendous rush of ice from the north-west took the ship astern, and, although buried to the flukes of the anchor in a dock of ice, such was the pressure that she was forced upon it, and at the same time thrown over to starboard : the stern-post was carried away, and the stern lifted seven feet out of the water. The same night a second rush of ice tore up the remnants of our floe, and forced the ship on the ice, so that her forefoot was quite out of water ; her sunken stern was threatened by an overhanging wave of ice, full thirty feet high, but which, providentially, stopped as it touched the quarter of the ship ; the water poured in through the stern-frame, and the ship creaked and strained in every direction ; provisions were got on deck, the boats lowered, and every preparation made for the worst extremity ; and, in the darkness and silence of night, we calmly awaited the anticipated coming of another shock, which, to all human appearances, must have been the last.

“ Heaven ordained it otherwise ; and in this novel cradle of ice we were drifted without further injury to Sea-horse Point. The ice that bore us was ascertained to be seventy feet thick, and it was not until we had sawed through long lines of twenty-five feet thick, at a future day, that the ship was freed from this situation. The position of Sea-horse Point was determined to be $63^{\circ} 43'$ long. $80^{\circ} 10'$ west, variation 49° westerly ; the lowest temperature was 53° below zero, when both mercury and brandy were frozen.

“ On the 1st of May the ship, still on the ice, was drifted near Mill Island, thence to the Southward of Nottingham Island, between it and Cape Wolstenholme, a perpendicular cliff of 1,000 feet high, thence to the northward of Charles Island, which we reached on the 21st of June. The ice now showed symptoms of disruption, and we set all hands to work with a thirty-five foot ice-saw worked by shears ; and on the 11th of July, having sawed to within three feet, the floe split in a fore and aft direction and liberated the larboard side ; we immediately made sail on the ship, but found we could not extricate her from an iceberg between the fore and main chains, we again had recourse to saws and purchases, when the lump of ice still fast to the ship rose to the surface of the water, and threw the vessel on her beam ends, the water rushing in with frightful rapidity. All hands were instantly set to work again, and laboured day and night unremittingly at the fatiguing but indispensable operation of sawing, till, exhausted by their exertions, I was obliged to call them in from the ice for rest and refreshment. Not a quarter of an hour had elapsed from quitting the work when a sudden disruption of the ice took place, and

the mass crashed with terrific violence against the ship's side, snapping, apparently without effort, the lashings and spars that had been placed, fearing this occurrence; and but for the merciful interposition of Providence all would inevitably have been crushed by the mass of ice on which they had just been labouring.

"As the ice separated, the ship righted and drifted along. Finding it impossible to hang the old rudder, a spare one was fitted and sail made on the ship. It was an anxious moment as we waited to see if she would answer her helm; and as she bore up before the wind, with her head towards England, a cheer of gratitude burst from all on board.

"I had cherished, to the last moment, the hope that the damages sustained might not be so great as to prevent my pushing for Wager Inlet by Sir Thomas Roe's Welcome, and there to beach the ship and repair damages, while some in boats carried into effect the object of our expedition; but when I found that she required two pumps constantly going to keep her free, that both outer and inner stern-posts were gone, the keel seriously damaged, besides various other casualties, I felt it became my duty, however reluctantly, to make the best of our way homewards. Fortunately, the early part of our passage across the Atlantic was favourable, but subsequently the weather became boisterous, and the ship's leaks increased very much, so that we could barely keep her free with incessant pumping; to secure the ship also we were obliged to strap her together with the stream-chain cable.

"On the 6th of August we again passed through Hudson's Straits, and on the 3rd of September arrived in Lough Swilly, not having let go our anchor since June, 1836.

"To speculate on what might have been the result of this expedition, had I reached either Repulse Bay or Wager river, would now be idle; but I cannot resist the opportunity of recording my unaltered opinion as to the practicability of the service when once a party should have reached either of the before-mentioned starting-places.

"The north-eastern shore of Southampton Island has been now surveyed for the first time by Lieut. Owen Stanley, who has also made various views of the coast, and a chart showing the track of the ship, the remarkable position in which the ship was placed among the ice, is admirably illustrated by Lieut. Smyth, in a series of spirited and characteristic drawings.

"I cannot conclude this brief account without bearing testimony to the great assistance I have invariably received from Lieut. Smyth, and all the officers and crew employed under my command in this expedition, to the cheerful obedience with which all orders were obeyed, and to the steadiness of behaviour evinced in circumstances of no common trial.

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

"GEORGE BACK."

"To Captain Washington, R.N., Secretary R.G.S."

THE GREAT WESTERN.—*Steam Ship*.—A correspondent has favoured us with the following authentic particulars of the dimensions of this vessel, the launch of which, at Bristol, we gave an account of

in our last number. She is now receiving her engines in the East India Docks at Blackwall.

	Feet.	Inches.
Length of keel	205	0
Length between the perpendiculars	216	0
Length over all from fore-part of stem (at figure) } to after-part of taffrail	234	0
Beam outside all . . . . .			35	4
Depth of hold under deck	23	3
Tonnage, (including poop, about 33)	1,340	tons.

She has two breaks in her flush deck, one at each end, and a dip of fourteen inches, to allow room for a fore-castle for the men and a smoking room abaft, without adding to her top weight or height more than could be avoided. Her saloon is nine feet high, and scarcely the encroachment of a foot from the height at the extreme after part is perceptible: she is nearly flat for about three-fourths of her length, her rise being only one foot in twelve; she has only two inches of keel perceptible below the flat of her bottom. The scantling of her floor timbers (of oak) is sixteen inches, and wherever pine could be used aloft, it has been used, *but not with a view to economy*. Her timbers, futtocks, waterways, &c., are dowelled together, then bolted in pairs, and the whole of her floors are bolted fore and aft, with one and a half inch bolts twenty-two feet long, overlapping four feet, and in four rows; she is diagonally fastened, on Sepping's plan, and the whole of her upper works from the light water mark are set up with nuts and screws. Her paddle-beams are made of four pieces of pine, each sixty feet long, on an entirely new construction, the centre being open, wherever pine and oak come in contact. She is carefully felted, and indeed there is felt between all her timbers and wooden diagonals. She is under masted, pains having been taken not to over mast her.*

On our passage round, with about 600 tons on board of coal and other matters, I felt that we could carry the canvass of a first rate. She only drew eleven feet on an even keel; stayed like a top, and at times with the wind in the quarter, went ten knots, and even then, and with the wind abeam going nine, appeared to want canvass to give her a slight list. We passed perhaps more than one hundred vessels of all sizes, from the *Inglis* of 1200 tons to the smallest, and if we except a man of war brig, which was alongside of us for four hours, (a long tom brig of Sir W. Symond's build,) *when dead before the wind*, we met nothing from the Land's End to Margate that we could not pass. We left Bristol on Friday morning, the 18th August, at 9 A.M., and anchored at Margate, 6 P.M., on Monday the 21st, where we lay thirteen hours, and were from thence towed to Gravesend on Tuesday, by our own steamer, the *Benledi*, of 100 H.P., which vessel we over-ran three times in the Bristol channel, *on a wind*, (south,) and finally left off Padstow. We passed the long ships at 8, Saturday P.M., broke off at 10, tacked and weathered the *Lizard*; lost sight of our steamer at midnight; going eight knots, close hauled on the star-board tack; after which, the wind backed to the westward of S.S.W.,

* We are informed that Captain Grant in the *Atalanta*, has regretted not having left his masts behind him.

and we had it fair all the way to Margate roads; our steamer joined us about two hours after we anchored.

As a proof of the ease with which I expect she will go through the water, I may mention that the Lion Steam Tug unassisted by wind, towed her faster down the Avon, than a four-oared yawl could pull. We wanted a rope taken on shore, and she could not get ahead with it, I should say, going at least four knots; afterwards, as we got round the points we were assisted by two other steamers, the length of the grounds, and occasionally only by the Benledi to about Padstow.

Dr. Lardner lectured here last August twelve months, just as our Company was formed. If he had lectured a little sooner the vessel would not have been built, and if ours had not, you may depend that the London Company would not have laid down the Victoria, and probably the contemplated attempt of steaming across the Atlantic regularly might never have been made, through a person who called the effort from Bristol "quixotic," in the same breath that he advocated the passage from the west coast of Ireland; as if we could not call at Cork for twenty hours' fuel, if necessary. But it will not be necessary, as you will see that we shall stow enough to take us out and home without a relay. I may now mention that we have increased our tonnage and our power. Our cylinders are now seventy-three and a half, and seven feet stroke, which is equal to 400 H.P.

INNISHOWEN LIGHT-HOUSES.—The corporation for preserving and improving the port of Dublin, &c., give notice, that two light-houses have been built on Donagree Point, from which lights will be exhibited on the evening of the 1st of December, 1837, and which will thenceforth be lighted from sun-set to sun-rise.

Specifications given of the position and appearance of the towers, by Mr. Halpin, inspector of the light-houses of Ireland.

The two light-house towers, erected on the northern side of the entrance to Lough Foyle, bear from each other east and west, distant 460 feet, kept in line they lead clear of the "Tuns Bank." The lights will be fixed bright lights, open seaward, from N.E. $\frac{1}{2}$ N. to W. by S. The eastern tower, in lat. $55^{\circ} 13' 46''$ N. and long. $6^{\circ} 56'$ W. bears by compass,

From Bengore head	E. by S.	distant 27	sea miles,
— North buoy of Tuns bank	E.S.E. ..	$1\frac{1}{4}$	..
— South west end of Tuns Bank	S.W. $\frac{3}{4}$ W. ..	2	..
— Tower on Magilligan Point	S.W. by W. ..	$2\frac{1}{4}$	..
— North pt. of M'Kenny's Bank	W.S.W. ..	$2\frac{1}{2}$	..

The towers are circular, coloured white; the lanterns elevated seventy-three feet over mean level of the sea, and in clear weather may be seen at the distance of thirteen miles.

By order,

H. VEREKER, Sec.

Ballast Office, Dublin,
24th August. 1837.

EXAMINATION OF THE COMMANDERS OF MERCHANT SHIPPING.—
MR. EDITOR,—I forward you a notice published at the port of Sunderland; one which may be looked on as a gem, perhaps worthy of

preservation in the pages of the *Nautical Magazine*. In your next, I trust, with your permission, to be enabled to make a few observations on this most important measure, which, although it may be beneath the attention of parliament, appears at length to have attracted that of some portion of the British public.

Your obedient Servant
JOHN BULL.

Sunderland, August 16, 1837.

Notice.—To Shipowners, Masters, and Mariners.—Whereas the mutual policies of insurance of the port of Sunderland, known by the names of the Star, Marine, Wear, Britannia, and Neptune, have severally inserted a clause in their policies to the following effect:—

“That a board for the examination of masters, be established at Sunderland, to be called the *Marine Board*, which shall consist of five members, to be chosen annually by the committees; and every person not having been previously master of a vessel, to produce a certificate of qualification from the said board, before taking command of any vessel insured therein; and subscribers not to employ such persons as masters of their respective ships without a certificate.”

This is to give notice, that the said board will sit every Friday, from ten till three o'clock, at their office, No. 1, High-street, Sunderland, and all persons who intend to take the command, or to offer themselves as masters of ships insured in the said policies, either in the coasting or foreign trade, are requested to make application to Mr. Thomas Thew, jun., at the office of the board, where every information, as to the nature of the examination, &c., will be given; and it is expected that all young men of respectability and character will avail themselves of the earliest opportunity of passing their examination, and obtaining their certificate. This is particularly applicable to those who are at present mates of vessels.

GEORGE BOOTH, Chairman.

STEAM BOAT EXPLOSIONS.—Mr. Editor,—In your publication of this month (No. 9, Vol. I., page 574) I have read the observations of “Mercator” on Atlantic steam navigation, and, without entering the lists of controversy, I will only, with your permission, say a word or two in reference to a remark of his to be found in page 578. He says, “We come next to the very important question of the consumption of fuel. No doubt the most serious difficulty; and the extent to which it can be diminished is in reality the only limit to steam navigation.” Here I would ask, Has Mercator ever heard of Collier’s Improved Patent Steam Boilers; if not, I most respectfully entreat his reference to the advertising sheet in your Magazine, where an invitation has been given to all persons interested in steam navigation to inspect the above-named boilers, when it will be made manifest to the most sceptical that the difficulties attendant upon Atlantic steam navigation are provided against in this invention, and particularly so in the saving of fuel.

It may not be generally known, that since these boilers were first introduced I have made several important improvements to remove the only doubt entertained, even by the most prejudicial, the most material

of which is the mode of feeding the bottom-front end of each chamber, under a pressure equal to double that which is requisite to work the engine; consequently, to whatever excess the fires may be driven, it will be impossible to displace the water in the chambers; added to which, for a further security in this particular, I have introduced a vent-pipe at the top-front end of each chamber, which passes through the crown of the furnace, to allow any surplus steam to escape, which may be generated by over-firing.

With reference to Mercator's remarks on explosions, I will just observe that as my boiler is worked under an open column of atmosphere, there is no more possibility of its bursting than there would be in a common tea-kettle.

Allow me, Mr. Editor, to tender you my best acknowledgments for the very liberal manner in which you have directed public attention to this invention. I allude to an article in your number for February, page 114, under the head of "Steam," an extract from which, I hope I may be allowed to introduce here: You observe, "We also see mechanical improvements offered to the public, tending to give stability and success to the great enterprise, and amongst them we find Collier's Improved Steam Boilers, particularly recommended. If Mr. Collier has realized all he professes to have done, he will have made by his ingenuity one of the greatest steps towards perfection since the days of the great Watt; and at all events we would recommend capitalists and commercial men, to look into the statements which Mr. Collier has advanced." This, Sir, is as it should be, all I ask from the public is to come and witness facts; and if not taking up too much of your valuable room, allow me to announce, that I would put one of my boilers on board any vessel free of expense, give six months' trial, and if not found to verify all the advantages proposed, engage to remove them and pay all incidental charges.

I am, Sir, your very obliged servant,

*Globe Dock, Rotherhithe,
9th Sept., 1837.*

E. H. COLLIER.

STEAM BOAT COLLISIONS.—About four o'clock on the morning of 5th Sept., the steam ship *Monarch*, Bain, for Leith, and the Commercial Steam Navigation Company's packet *Apollo*, Minter, from Yarmouth for London, came in contact off Gray's, (Essex;) the *Apollo* went down in ten minutes afterwards, and the stewardess and two children were drowned. There were about twenty passengers on board the *Apollo*, all of whom, with the exception of the three unfortunate individuals who were below at the time of the accident, were saved by means of the boats belonging to the *Monarch* and *Apollo*. The *Monarch* did not sustain any damage; and, after the passengers saved from the *Apollo* were landed, proceeded on her voyage to Leith.—*Shipping Gazette*.

Mr. Editor.—How long are the lives of her Majesty's subjects to be endangered and sacrificed for want of a few simple regulations for the guidance of steam vessels navigating the rivers of this country; which, although now almost covered with these admirable conveyances, are scenes of constant dread and actual danger to every one who adopts them?

Those unacquainted with the subject, will hardly believe that, at the present moment, two steamers meeting on a river, (the Clyde excepted,) have no rule whatever, as to how, or on which side, they are to pass each other. No pilot, or other person in charge of these vessels, can say that there is any understood practice on this subject; consequently, when they meet, should those in charge happen to think differently on the subject, (and what it is just an even chance they may do,) the consequence is collision, and there is I think very little doubt that the fatal occurrence of the running down of the Apollo, may be attributed to this want of regulation.

In your August number of last year, I attempted to draw attention to this subject; nothing has yet been done, and I will merely allude again to the regulation suggested by the Pilotage Committee, and which was the cause of my addressing you on that occasion, to show how mischievous such half sort of enterprises as that adopted by the said Committee are. When a subject of this kind is meddled with, it should not be suffered to remain in the state this has been left in, but vigorously prosecuted.

In the Clyde, it has long been considered an established rule for steamers both to put their helms "a starboard" on meeting. For what good purpose I cannot tell; but I think this practice of the Clyde has been sufficiently long known to make it desirable to be adopted generally. The Pilotage Committee thought proper to suggest that the contrary plan should be adopted, with some other regulations, which I think I sufficiently exposed the fallacy of in my communication of August last. The consequence of all this has been to derange and unsettle what would no doubt otherwise have become ere this an established and well-known custom; as much so as that of two carriages passing on a road. On the important subject, also, of lighting steamers, no law whatever exists; and I would again call attention to the advantages of the mode recommended in my letter of last year on this point. The triangular arrangement of the lights gives a steamer approaching another a better means of knowing her motions than any other. If, for instance, supposing the Monarch had been going down the river with the ebb, and the Apollo coming up in a slack, or in shore, it might be desirable for the latter to cross to avail herself of a better eddy or slack. The ship coming down would see by the arrangements of the other's lights when such crossing was taking place, and avoid her. Trusting that these important subjects will no longer be allowed to lie unheeded, to the great danger and detriment of steam navigation, I am, &c.,

A SKIPPER.

[The system of lights proposed by the Pilotage Committee will be found at page 308 of our last volume. We have not heard of their being adopted by parliament.—Ed. N. M.]

STEAM NAVIGATION AT THE LATE MEETING OF THE BRITISH ASSOCIATION.—The following account of the proceedings on steam navigation, at the late meeting of the British Association, contains so much of interest on that important subject that we are induced to give it entire as it appeared in the *Liverpool Standard*. We are the more inclined to adopt this course as we find that the logs of the Atalanta and Berenice, as given in our pages, were alluded to at the meeting; and we take this opportunity of returning our acknowledgments to the talented and

worthy chairman, who presided at the section, for the part he adopted on that occasion. We shall here briefly state, that as soon as we have concluded the voyages of these vessels to Bombay, we propose to insert a table, in which the whole particulars of each voyage shall appear, with regard to time, consumption of fuel, &c. ; the navigable distance, and the distance actually run over by each vessel. With the assistance of this, our readers will be better able to form their conclusions. We may also add, that in the *Berenice's* log, from Bonavista to Fernando Po, the vacuum column was not completed in the original MS., placed at our disposal by the Hon. Court of Directors; and that the expenditure of coals on the same voyage appears to be half what it really is, excepting on the 25th March. This, however, will be immediately seen by the consumption of coal stated at noon of each day; which consumption includes those used in raising steam at starting, and those used by the purser, the latter amounting to about 4 cwt. daily. In the results given respecting the consumption of coals, the whole of this consumption is included; but with regard to the proportion per horse power, we shall yet be glad to learn the actual power of each vessel, having used that which we have given at page 193. The results concerning distance also are obtained from the distance actually run over by each vessel.

“ Dr. Lardner resumed this subject, and we connect the proceedings of the two evenings. We shall necessarily give a very brief abstract of the learned doctor's speech, partly because it was very diffuse, partly because much of it consisted in explanations of what every person in the section ought to know before he went there, but principally, because it was little beyond a repetition of his discourse last year at Bristol, republished by himself in the *Edinburgh Review*, and of which the most important parts were copied by us a few weeks ago. The voyage to America by steam, he treated as practicable, but so uncertain as to render a profitable result hopeless. Short voyages were different from long voyages, and it did not follow that what answered in one would answer in the other. First, the salt precipitated, and spoiled the boilers; or, if fresh water was frequently used, heat, and consequently fuel, was wasted. The only remedy was perpetually to work with fresh water; and there was a condenser invented to return all the distilled water to the boiler. This he distrusted, because the inventor required a large air-pump, as big a one as he could get, instead of merely a little force-pump to return the water condensed. But there was no air in distilled water, and so if it required this great pump to effect a vacuum, of the competency of which he did not doubt, it must produce it by pumping out uncondensed steam, which was a mere waste. He assumed at Bristol, that the maximum of duty for a ton of coals to each horse power was to propel a vessel 1,700 to 1,800 miles. Messrs. Maudsley and Field had objected that vessels were improved since 1832, and a greater duty could now be got. He found it difficult to get data, but the Admiralty gave him the use of the logs of their steamers for the last three years. Some were in such a state of neglect and disorder as to seem almost fraudulent—to be utterly useless. He got logs from eight or nine sufficiently precise, and from one post-office steamer, and one private steamer.”

The learned doctor exhibited the following table:—

Admiralty Steamers.

African	10·9·5	13	1045	Pluto	9·7·6	5	1501
Blazer	10·3·6	9	1500	Tartarus	10·7·5	5	1140
Confiance	10·0·6	2	1389	Dee	8·3·6	5	1574
Firefly	10·7·6	25	1308	Flame	10·7·6	0	1266
Medea	8·3·7	9	2105				

Post Office Packet.

Dolphin.....12·0·9

Private Packet.

Duchess of Sutherland..12·5·7

“The first column of figures contains the weight, in pounds and decimals of pounds, of coal consumed per horse power each hour; the second the average number of miles travelled per ton; the third the duty or number of miles a ton of coals to each horse power took the ship. The doctor entered into long details; but as he confined himself entirely to the Medea as a pattern of excellence, it is unnecessary to go into the merits of the other vessels. Her tonnage is 807 tons; she is an armed frigate, built in 1832, engines 220 horses, by Mawdsley and Field, reported one of the best steamers afloat, built by Mr. Lang, fitted up with Morgan’s paddle wheels. Those wheels, which feather, were generally adopted by the Admiralty. He did not wish to raise broils by stating anything about comparative merits or originality; he merely wished to state the fact. The idea might be old; but the Admiralty found by extensive experiments that those wheels gave increased speed. He had heard, however, that they were three times the cost of the common ones, and only lasted one-third the time; and while the common paddle was easily repaired, their repair at sea was next to impossible. The Medea also carried Llangellech coals: those and similar Welsh coal were the best known for generating steam. He would therefore take the Medea as his ‘modulus.’ Her station was the Mediterranean, which might be taken as an average of Atlantic weather, though perhaps worse. He had also got the average speed of those splendid steamers, the Dundee and Perth, which ply between London and Dundee, and this was a fraction less than ten geographical miles an hour. But the Dolphin consumed twelve pounds of coal per ton an hour, and it was reasonable to assume they did the same; so he still took the Medea as the most favourable standard for the duty of coal. A vessel could only carry so much coal; too much at the outset was mere waste, by immersing the paddles too deep; when exhausted, so that they did not dip sufficiently, she lost equally: but that might be obviated by tanks filled with water. Now for the voyage to the United States. During nearly all the year there was an adverse west wind, and the gulf-stream was to be avoided. [The learned doctor here attempted to go into the theory of the Atlantic winds and currents, but was prevented by the impatience of the auditory.] A vessel outward-bound must constantly encounter this adverse wind, and also avoid the gulf-stream. The average passage outwards was thirty-seven days, seven hours; inwards, nineteen days, six hours; and the mean twenty-seven days. This was twenty-five per cent less than the outward trip; but if that was assumed as the mean of obstruction to both, they must take the average weather on a voyage to New

York at twenty-five per cent. worse than the weather encountered by the *Medea* in the Mediterranean, and from it at twenty-five per cent. better, and so much less duty required. Still he thought this too favourable an assumption in reference to the weather in the Atlantic. Taking, however, the duty outwards at twenty-five per cent. less, they would require $2\frac{1}{16}$ tons of coal to the horse power to take a vessel to New York. But they must not take the bare average; they must take $2\frac{3}{4}$ tons, unless they meant vessels to sail as well as steam. Steam vessels usually took only $1\frac{1}{4}$ ton. The *Medea* could only take 300 tons without sinking too deep, or, without her arms, 360 tons. A vessel of great tonnage and great power was constructing—the ship in London and the machinery in Scotland—for this purpose: one of 1,800 tons, and 450 horse power. But 450 tons, at the rate of one ton to one horse power, must be taken as the weight of the machinery. If he gave her $2\frac{3}{4}$ tons for each, that 1,050 tons with the 450 it made 1,500. He thought it possible she might maintain the intercourse; and, if her coals got low, might make up by sailing. Much had been said about sailing, but they were comparing steamers with the best class of of sailing vessels in existence,—the New York liners. Steamers would be under the disadvantage, if they both sailed and steamed, of carrying two crews, a nautical and a maritime one. He did not deny the voyage might be practicable, but he did not believe that it would be profitable—that passengers could be carried cheap. What could they gain on nineteen days? and would the saving of a few days out-compensate the expense? These calculations went on the supposition of doing all at one trip. If a stage was contemplated, it was different. It was 1,400 miles from the west coast of Ireland to Halifax. There, there were coals, and it was quite practicable to go to New York by steam, or, better still, if a rail-road were made. (Hear.) The learned doctor then went into the question of communication by steam with the East Indies, but our space will not allow us to follow him fully. He thought the voyage quite practicable by steam to Alexandria. Thence there was no obstruction to Suez or Cossier. The desert afforded an excellent road. The coral rocks of the Red Sea only existed along the shores. The island of Caneron, on the Red Sea, had been ceded to us, and that of Socotra might be obtained. Those afforded good harbours, and excellent intermediate stations. The only difficulty was between Socotra and Bombay, in the months of July and August, and even then he thought a steamer would make way against the monsoon.”

Mr. Locke asked if Dr. Lardner had taken any account in his calculations of the medial lines and lines of flotation in the vessels?

Dr. Lardner had not. He merely took the duty as proved by the fact.

Mr. Locke, at some length, defended Hall's patent condensers, and appealed to the experience of the St. George's Company.

Mr. Cottam adduced in favour of Morgan's paddle-wheels the instance of a vessel which had made several long and stormy voyages without needing repairs. In one instance, which he described very particularly, she was driven on a lee shore in a hurricane, which dismasted her, and with the lee-wheel immersed, and the weather-wheel whirling round in the air, she had worked to windward.

Mr. Rotch, in a humorous speech, objected to the low figures in the

table as the general average of steamers. For the *Dee* and *Medea* were given a rate of 8·3; but when the doctor came to trading steamers, he found 9·9. What if it, in fact, were fifteen miles an hour? That might favour his views, but not his arguments. (A laugh.) In his experience government data were the very worst, and, as a practical man, he would say that government steamers were the veriest tubs afloat. The moment he turned to traders of the latest and best construction, up rose his maximum, and the *London* and *Dundee* steamers went far beyond it. Why exclude the transatlantic steamers, the best of all? Be assured, if we found a way from England to New York, the Yankees would find a better from New York to England. He had seen several gentlemen from America, and all agreed the voyage from New York to Albany was done at sixteen miles an hour. Mr. R. went into some geographical details, and concluded by expressing an opinion that Dr. L. had taken an average far below that of our own mercantile navy, and further still below that on the Hudson.

Mr. Thomas R. Guppy said, that in rising to make some remarks on this important subject, he would first state, that he was not a disinterested party, for he was now devoting considerable attention to the outfit of one of the large steamers, constructing to attempt the voyage between England and America. He thought, that before the Doctor came to the conclusion, that the voyage was impossible, he should derive his data from good sources. Marine steam navigation was yet only about twenty years old, and we were still only in the infancy of knowledge of the principles on which steam-vessels should be constructed. Whoever had seen the fine private steamers belonging to the ports of London, Liverpool, Glasgow, and Bristol, and had then gone to view the government ones in Woolwich basin, must have been astonished at the extraordinary forms there collected; it would be well if a glass case could be constructed over the basin, to procure those curiosities of practical science, as exercised in our naval building yards. (Laughter.) Some, like the *Confiance*, were gun brigs cut down; others, on the model of sailing vessels, with some arbitrary addition of length, and various other incongruities. The Doctor should have learned, when the steamers were built, and on what principles; indeed, having repeated now precisely his discourse of last year at Bristol, since repeated in the *Edinburgh Review*, it was a pity he had no better statements than the meagre table he now exhibited. No engineer could look at any part of it, except to the *Medea*. The next boat, the *Dee*, had been a most unfortunate vessel, stopping half her time in port to remedy one defect or other. The *Medea* was a fine ship, sailed and steamed well, and, considering her age, might be fairly taken as a specimen: but, she was built in 1832, and he did hope that science had not stood still, either in practical ship-building or practical engineering, during the last five years. He should like to know why the vessels lately sent to India, had been entirely passed over. Minute and full particulars, ample and authentic as any the Doctor had referred to, might be found, relative to these, in the *Nautical Magazine*. The *Berenice*, built by John Wood, with engines 230 horse power, by Napier, had gone from Falmouth to Teneriffe, distance by log, 1,572 miles, consumption of coals, 128 tons, or 6½ lbs. per horse power, average rate 8·9 nautical miles per hour.

Again, the *Atalanta*, with engines of 212 horse power, by Maudsley and Field, had, on one part of her voyage to India, gone 897 miles, at an average rate of 9.4 nautical miles per hour, consuming 7lbs. per horse power per hour, and from Mayo, a distance of 2,180 miles, at an average rate of 8.1 miles, she consumed only 6lbs. of coal per horse power per hour: total consumed, 154 tons of coal, and had 175 tons remaining on board when she arrived.

Dr. Lardner.—Did she sail or steam?

Mr. Guppy.—She certainly sailed as well as steamed. It was never intended she should not use her sails, when she could do so with advantage.

Dr. Lardner.—All these calculations are by steam alone?

Mr. Guppy.—Who was ever on board a steamer, and knew twenty-four hours to pass without hoisting some sail? I rarely have. During the whole of this time the steam was up—(hear)—and here is the full consumption of coal for every hour of the voyage. (Hear, and cheers.) If the *Atalanta* sailed 2,180 miles consuming 154 tons, and had 175 tons left on board, it is clear she carried coals for nearly 4,500 miles. (Cheers.) And she had encountered most severe weather on her voyage. What he had stated was from the *Nautical Magazine*, but he had had a written copy of these logs, and he believed the one he now held in his hand was correct. He would now state some particulars from his own knowledge, relative to one of the vessels building for this purpose.

The Chairman knew the editor of the *Nautical Magazine*, and for his veracity would pledge his own.

Mr. Guppy continued—A vessel had been built at Bristol, of the measurement of about 1,340 tons. She was rigged for sailing in the usual style of steamers, except that, from her great length, she had four masts instead of three. She had just made the circuitous voyage from Bristol to London, (where her engines are building,) in four days; having been helped by a steamer to the Land's End, she there was cut off, and ran to Dover by sails alone in five hours less than two days—a very rapid passage, thus proving her to be a very fast and good sea boat under canvass alone. In fact she passed everything in the English Channel, with the exception of a very fast sailing gun-brig. She was burthened with 500 tons of coal, and then drew eleven feet, and she had been hurried off so imperfectly fitted out, that she arrived at Dover before they could get all her sails set—(great laughter)—he only meant to show in what an imperfect state for sailing she was; if she had had a week's voyage to perform, they would have had time to bend and set all her sails. The engines were building by Messrs. Maudsley and Field, of the power of two hundred horses each; that is, cylinders of $73\frac{1}{2}$ inches diameter, by 7 feet stroke. The paddles would be the cycloidal or split paddles—called Galloways—their shape was—

Mr. Russell—The cycloidal.

Mr. Guppy—Yes, cycloidal, of which we had not heard one word this morning.—Laughter.—The plan was found more effective, and he believed would surpass Morgan's. He had seen several of Morgan's, the joinings of which had worn quite loose by the effect of the sea water, caused great noise and friction, and were worn out in two or

three years. She had four distinct boilers, with space between each for a man to walk, so that either could be cooled, emptied, and cleaned, while the others were at work. Another point of difficulty which the Doctor had raised was, the supersaturation of the water with salt. This saturated water was usually blown off by the stokers—in fact it was their duty to do so every watch, or four hours, but it was often neglected, or imperfectly done, and then the boilers became what is called sullied, the entire covered with a thick crust of salt. To prevent that, they intended to use an invention of Mr. Field's, by which a certain quantity of the saturated water was pumped out of the boilers at each stroke of the engines, and the caloric it contained was transferred to the supply of water which was forced into the boilers at the same time—(hear, hear.) Now, taking the burthen of this vessel at 1,300 tons; her engines, boilers, and their water, would weigh 350 to 400 tons, which left 900 tons for coals and cargo. Reckoning the average consumption in the best steam vessels, it would be found that her engines would not consume more than 30 tons a day; so that, if necessary, she could carry coals enough for 30 days. If she were found to average nine miles per hour, and he hoped it would be nearer ten, she ought to perform her voyage in twelve, and against disadvantageous winds, in eighteen, days. He was therefore sanguine that steam navigation across the Atlantic would be shortly established; for their vessel, the Great Western, would be ready to start early in the spring from Bristol, previously making several trial voyages across the Bay of Biscay, &c. (Cheers.) There was also a vessel building in London of 1,800 tons, with 78 inch cylinders. He would totally disregard the data of Dr. Lardner, and take the facts, as shown by more recently and better constructed vessels. Many of the government vessels were of very bad forms; their power and size greatly disproportioned,—indeed, things to take warning by, and not to be taken as the standard on which to found calculations.

Mr. Hawkins showed, from an official return, that the length of the passage of the Hudson was 149 miles. The current was very trifling, perhaps two miles an hour.

Mr. Muir had recently returned from America: had gone up and down very often. The tide could make no difference in the average results, as the vessels started winter and summer at seven A.M. He knew many boats. The Eric, the ——, and the Champlain, arrive at 4½ P.M., making fourteen stoppages, of at least two minutes each; thus averaging sixteen miles, as Professor Henry had stated. When up in the Novelty, a new experiment, with Dr. Knott's engine: made no particular haste, but did it in nine hours, including two landings. The next day did it in eight hours five minutes. If it were objected, that this was only river sailing, he had gone from New York to Charleston, 700 miles, at an average of thirteen. The Columbus and William Gibbons usually did it at that rate. Knew nothing of the draft. To state this was only justice to our transatlantic friends. Was not an engineer. Did not know the size of the paddle wheels. The Novelty's made twenty-eight revolutions in a minute, till she came to West Point, then twenty-nine to thirty-one; the —— only twenty-three in a minute.

A Member.—The general construction of the American boats is very long, and paddles very large.

Mr. Hawkins.—A common proportion is 200 feet long to eighteen beam. The Novelty is 216 long, and has common paddles.

A Member.—Those long river boats usually draw $6\frac{1}{2}$ feet, but the sea boats to Charleston much more. The Providence boats, working in an inland sea, draw about nine feet.

Mr. Guppy, in answer to **Mr. Russell.**—The Hudson is a deep river, five to six fathoms, at least, a great part of its length.

Mr. Allen, a professional gentleman from the United States, said that the Hudson, for 125 miles, was very deep; after that it shallowed: but steamers plied on it to $4\frac{1}{2}$ feet, or less. **Mr. Allen** then, in a very handsome manner, volunteered to send the association, against its next meeting, full engineering particulars relative to the American boats; their draft, rate, power, and particulars of build, paddles, and engines. **Mr. A.** was very warmly thanked for his offer.

Several gentlemen in this conversation, of which we have only given the leading particulars, not exactly in the order in which they were elicited, censured the application of the term "fraudulent," by **Dr. Lardner**, to some of the Admiralty logs.

The discussion relative to the build of the *Medea* was postponed until **Mr. Lang**, the builder, could be consulted. That gentleman was asked some questions on the subject next day, and, for convenience, sake, we give the purport of what was then said in this place.

Mr. Lang stated that he constructed that frigate, burthen 840 tons: was the largest steamer in the service: had fine lines, a sharp bow, and a clean run: she was designed to sail, as well as steam: he built her with a view to both: was not aware questions would be asked relative to her, or would have been prepared with more precise information: knew that she sailed well: without steam she beat the Mediterranean fleet, the Greek fleet, and the —— fleet, on a wind: she worked out of Malta, and never once missed stays when others did: he had seen the great Bristol steamer, and the one building here for the same purpose: knew no advantage in their lines for speed: did not think they would be so fast, but would be better for cargo: that was right for a long out-voyage: the one at Bristol was well designed; he liked her best: the one here not so well, she was too full behind: if they were both to go out full loaded, did not believe they would look at the *Medea*; but, in the latter end of the voyage, would have an advantage: does not know their lines particularly, did not look at them with that view.—(By **Mr. Russell.**) The length of the *Medea* was 176 feet, her beam thirty-two: considers that an excellent proportion: to construct steamers to go any distance would only increase the lines proportionably: her greatest section was a considerable distance from the bow, and was carried far back: thinks from a little before the paddle-box to a little after it: has built so many vessels cannot trust to memory to name the exact lines: was built in 1831: does not think he could improve her, and every report of her sailing was in the highest degree satisfactory.

The Chairman recapitulated the objections, and called on **Dr. Lardner** to reply. He knew nothing of nautical engineering himself, but he

knew that the packet he came in, though built and sailed by a private company, invariably beat the government packets.

Dr. Lardner replied. His objection to the condenser was not answered. It was not shown that the air pump could be used if the condenser converted the whole steam into water. He spoke of Morgan's paddle wheels only from report and assurance of engineers. He disclaimed all intention of meddling with patent interests—he only wished to state facts. He had no means of procuring from America, notwithstanding all his zeal, those authentic data on which only he could consent to found calculations. He had no right to offer any authentic data. He had found extreme caution requisite; even nautical distances were so inaccurately stated, that he had to get them calculated specially by Capt. Beaufort. He had not at all interfered with river navigation, nor was he satisfied with what he had heard. Those vessels were built for speed only. On the Hudson the boats were like canoes or Thames wherries, with the engines on deck. In an American sea voyage, thirteen British miles was stated an average; this was eleven geographical miles, of a speed of eleven knots. He had told them the Dundee and Perth, he had been informed, made ten within a decimal. One gentleman (Mr. Rotch) seemed to think fifteen was nearer their rate; he would tell that gentleman what he did. He applied to Mr. Napier, who gave him the particulars of ten double voyages, and from that Mr. Napier himself deduced the rate of ten knots. (Hear.) He was not able to deduce exactly the consumption of fuel, but, in a loose way, he would say it was not less than 10lbs. per horse power per hour, perhaps 12. Under these circumstances he did not think they afforded a more favourable modulus, and therefore he used the *Medea*. His calculations were not founded on an average of steamers—old and new, good and bad—but on the *Medea*, and none else. He took her because she afforded the greatest average—most favourable to the project; and if any gentleman would put him in possession of a better, he would take it; but so long as he had not the precise facts he would not depart from her for ten thousand miles of Hudson voyages. He regretted the use of the word “fraudulent,” both as an improper word itself, and as not expressing exactly what he meant. He found some of the logs kept in a state of apparently wilful neglect. He did not conceal this; the logs were given to him officially, and he conveyed the information to the Admiralty. Some of the logs were kept so that the proper particulars were not entered in the columns set apart for that purpose; in others were demonstrably erroneous. For instance, the Admiralty directed an account of every two hours' consumption of coal to be kept; that is, that they should put down every two hours what they actually used in that time. Instead of that, he found that they had divided the quantity of coals they used in two days, and put down an equal portion for every two hours. (Laughter.) When he used the word “fraudulent,” he meant nothing more than this, and regretted its use.

Some conversation took place relative to the duty of one of the steamers referred to by Mr. Guppy, calculated on Dr. Lardner's plan. Mr. Vignoles made it 1,755; Mr. Herapath, 3,021. There were several intermediate calculations, and the chairman undertook to give his calculations, taking the facts from the *Nautical Magazine*, and the formula from Dr. Lardner the next day.

STEAM BOAT EXPLOSIONS.—The number of explosions of the boilers of steam-boats which have taken place lately, is exceedingly discreditable. A steam-boiler should not blow up any more than a common tea-kettle, if properly managed. Bad materials or workmanship, in the first place, and carelessness or ignorance in the second, are the sole cause of these accidents. Some time ago (in No. 261) we explained the manner in which such explosions usually take place; which is by the over-great elaboration of steam from the water, which is hastily propelled into the almost empty and red-hot boiler, just as the boat is going to start. The valves cannot or do not let off the spare steam fast enough, and the weakest part of the boiler consequently gives way. We accuse the Mahomedans of trusting to fate in everything, of giving themselves no concern about the proximate causes of things, of ascribing all the ills of life to the decrees of Providence, and there letting the matter rest. We are afraid that the mass of the people in our country are not much better than Mahomedans in these respects. They, and the persons they select to legislate for them, go on from day to day, and year to year, seeing all the time, hundreds of their fellow-creatures sent to the bottom of the sea, in rotten and worn-out ships, or blown into the air and scalded to death in steam-vessels, without making the smallest effort, a little newspaper fuss at every accident excepted, to prevent these evils from occurring in the future. We should like to see a little more alacrity in setting these things to rights. Coffin ships, as a certain class of trading vessels are appropriately termed, should not be permitted to take on board either goods or passengers, with the hollow pretension of taking them to foreign countries; and no steam-vessel should be allowed on any account to leave its station, without being duly licensed as of warrantable materials and machinery, and under the management of a captain and engineer thoroughly versed in the duties of their profession. With regard to the more urgent of these measures, a preventive, as far as is practicable, for steam-boat explosions, the evil will by and bye cure itself to a considerable extent; not by a public demonstration of dissatisfaction, which would cost too much trouble, but simply, by a great number of persons refraining from going on board any of this description of vessels. Panic is one of the most catching of all things; and a few more explosions will help wonderfully to deter people from trusting their lives to such precarious vehicles. If the managers of respectable steam-boat companies have a due regard for their own honour or profit, they will be the most eager to demand such a legislative enactment as we have pointed out.—*Chambers's Journal*.

The following are the dimensions of the Gorgon, steam-frigate, lately launched from Pembroke dock-yard, of 250 horse-power:—

	Ft.	In.
Length between the perpendiculars	178	0
Ditto of the keel for tonnage	152	2½
Breadth extreme	37	6½
Ditto moulded	36	4½
Depth of Hold	23	0
Launching draught of water	afore	9 10½
	abaft	10 2½
<hr/>		
Burthen in tons	1,110	

IRON STEAMERS.—We understand that most satisfactory accounts have been received from Alexandria, as to the voyage out there, of the iron steam yacht *L'Egyptien*, constructed by Mr. J. Laird, of Birkenhead. The actual time occupied in making the passage from Liverpool was eighteen days; and when we consider that she was built principally with a view to river navigation, and had contrary winds to contend with most of the voyage, it must be generally admitted, that she has made a most extraordinary passage. The reports from the captain and others all agree in representing her as an excellent sea boat, and that the compass acts as truly and steadily as it does on board any timber-built vessel. A desideratum of vast importance.

Capt. the Hon. Maurice F. Berkley, late in command of the *Hercules*, 74, has taken his seat at the Admiralty, vice the Hon. George Elliot, C.B., appointed to the command at the Cape of Good Hope and West Africa.

The old revolving light on the pier at Dieppe is to be replaced by a new permanent light, on a tower recently erected near the extremity of the pier-head. This change is to take place on the 1st of November, and as usual, the light will not be shown when there is less than ten feet water at the entrance of the port.

A beacon is to be erected forthwith on the Black Rock at the entrance of Falmouth Harbour; its basement will be twenty feet square, and thirty seven feet in height; on its top a pole will be erected, mounted with a reflector.

SOME RECOLLECTIONS OF THE LAST DAYS OF HIS LATE MAJESTY.

[Concluded from page 630.]

PREVIOUS to the flag annually presented by his Grace being deposited in the guard-chamber, it had been brought to his Majesty, who, laying his hand upon it, and touching the eagle, said, "I am glad to see it. Tell the Duke of Wellington that I desire his dinner may take place to-morrow; I hope it will be an agreeable one."

In the course of the night the Queen observed to his Majesty, that the Archbishop had only been invited to stay till the following day, that his Grace wished to be honoured with his commands, and that he had expressed himself not only willing but anxious to stay as long as his services could be either acceptable or useful to him. The King immediately said, "Yes; tell him to stay. It will be the greatest blessing of God to hear that beautiful service read by him once more;" alluding to the liturgy of the Church of England, from the frequent use of the prayers of which his Majesty had been so much comforted and supported in his illness.

Monday, June 19th.—Though his Majesty passed a tolerably tranquil night, yet no corresponding effect was produced upon his health. Decaying nature could no longer be recruited by the ordinary sources of strength and sustenance. His Majesty, however, rose at seven, for he had at no time during his illness been confined to his bed, and had even for some weeks anticipated by an hour his usual time of rising. There was much in the King's language and manner this morning which bespoke his sense of approaching death. On awaking, he observed to the Queen, "I shall get up once more and do the business

of the country;" and when being wheeled in his chair from his bedroom to his dressing-room, he turned round, and, looking with a benign and gracious smile on the Queen's attendants, who were standing in tears near the door, said, "God bless you," and waved his hand.

At nine o'clock, by the desire of the Queen, who was naturally anxious that the hope so fervently expressed by the King on the preceding night might be gratified as soon as possible, the Archbishop entered the King's room, and was received, as at all other times, with the significant tokens of joy and thankfulness which his Grace's presence never failed to call forth.

On this occasion the Archbishop read the service for the visitation of the sick. The King was seated, as usual, in his easy chair; the Queen affectionately kneeling by his side, making the responses and assisting him to turn over the leaves of the large prayer-book which was placed before him. His Majesty's demeanour was characterized by the most genuine spirit of devotion. Though unable to join audibly in the responses which occur in the service, yet when the Archbishop had rehearsed the articles of our creed, his Majesty, in the fulness of his faith, and labouring to collect all the energies of sinking nature, enunciated with distinct and solemn emphasis the words, "All this I steadfastly believe." During the whole service his Majesty retained hold of the Queen's hand, and in the absence of physical strength to give utterance to his feelings, signified by his fervent pressure of it not only his humble acquiescence in the doctrines of our holy faith, but his grateful acknowledgment of those promises of grace and succour which so many passages of this affecting portion of the liturgy hold out to the dying Christian, and the belief of which his Majesty so thankfully appreciated in this his hour of need. With the other hand his Majesty frequently covered his eyes and pressed his brow, as if to concentrate all his power of devotion, and to restrain the warmed emotions of his heart, which were so painfully excited by the distress of those who surrounded him. His Majesty did not allow the Archbishop to withdraw without the usual significant expression of his gratitude, "A thousand, thousand thanks." It was when the Archbishop pronounced the solemn and truly affecting form of blessing contained in the service for the visitation of the sick, that the Queen, for the first time in his Majesty's apartment, was overpowered by the weight of affliction. The King observed her emotion, and said, in a tone of kind encouragement, "Bear up, bear up."

At the conclusion of the prayers his Majesty saw all his children; and as they successively knelt to kiss his hand gave them his blessing in the most affectionate terms, suitable to the character and circumstances of each. They had all manifested the most truly filial affection to his Majesty during his illness; but on Lady Mary Fox, the eldest of his Majesty's surviving daughters, had chiefly devolved the painful yet consolatory duty of assisting the Queen in her attendance on the King. The extreme caution of his Majesty, and his anxiety to avoid causing any pain or alarm to the Queen, was very remarkable. He never alluded in distinct terms to death in her Majesty's presence. It was about this period of the day that he tenderly besought her Majesty not to make herself uneasy about him; but that he was

already anticipating his speedy dissolution was evident from his expressions to several of his relatives. Even at this advanced stage of his disease, and under circumstances of the most distressing debility, the King had never wholly intermitted his attention to public business. In accordance with his usual habits he had this morning frequently desired to be told when the clock struck half-past ten, about which time his Majesty uniformly gave audience to Sir Herbert Taylor. At eleven, when Sir Herbert was summoned, the King said, "Give me your hand. Now get the things ready." On Sir Herbert saying he had no papers to-day, his Majesty appeared surprised, till Sir Herbert added, "It is Monday, Sire; there is no post, and no boxes are come." Then he replied, "Ah, true—I had forgot." The Queen then named Sir H. Wheatley, who had entered the apartment. The King regarded him with a gracious look, and extended his hand to him, as he did also to Dr. Davies, evidently influenced by the same motive which had prompted a similar action to Sir Herbert Taylor—a last acknowledgment of their faithful services. His Majesty then passed several hours in a state of not uneasy slumber; the Queen almost uninterruptedly kneeling by his side, and gently chafing his hand, from which assurance of her presence his Majesty derived the greatest comfort. During this afternoon, to such an extremity of weakness was the King reduced, that he scarcely opened his eyes, save to raise them in prayer to heaven, with a look expressive of the most perfect resignation. Once or twice indeed this feeling found expression in the words, "Thy will be done!" and on one occasion he was heard to utter the words, "the Church—the Church!" and the name of the Archbishop. It was about nine o'clock in the evening of this day, that the Archbishop visited the King for the last time. His Majesty's state altogether incapacitated him from joining in any act or exercise of devotion; but, as at each preceding interview, his Grace's presence proved a source of joy and consolation to the dying Monarch, who strove in vain to convey any audible acknowledgments of the blessings which he sensibly enjoyed; but when, on leaving the room, the Archbishop said, "My best prayers are offered up for your Majesty," the King replied, with slow and feeble, yet distinct utterance, "Believe me, I am a religious man!" After this exertion, his Majesty gently moved his hand in token of his last farewell, and the Archbishop withdrew. As the night advanced a more rapid diminution of his Majesty's vital powers was perceptible. His weakness now rendered it impracticable to remove him into his usual bedroom, and a bed was accordingly prepared in the royal closet, which communicates with the apartment in which his Majesty had passed the last ten days of his life. At half-past ten his Majesty was seized with a fainting fit, the effects of which were mistaken by many for the stroke of death. However, his Majesty gradually, though imperfectly, revived, and was then removed into his bed. From this time his voice was not heard, except to pronounce the name of his valet. In less than an hour his Majesty expired, without a struggle, and without a groan, the Queen kneeling at the bedside, and still affectionately holding his hand, the comfortable warmth of which rendered her unwilling to believe the reality of the sad event.

Thus expired, in the seventy-third year of his age, in firm reliance

on the merits of his Redeemer, King William the Fourth, a just and upright King, a forgiving enemy, a sincere friend, and a most gracious and indulgent master.

Bushy House, July 14, 1837.

J. R. W.

BAROMETERS.—The following is an extract of a letter from Mr. Mc. Clear, the astronomer, at the Cape of Good Hope: "I may mention on the subject of barometers, that Dr. Smith's was smashed by the twisting of its case; I mean that part of the instrument to which the scale is attached; and it appears from the changes of figure in wood, exposed in warm climates, that brass or metal frames should always be adopted for barometers within the latitude of 40°." Sir John Herschel, we believe, also highly approves of the adoption of metal. The only one of this kind we have yet seen is a marine barometer, by Mr. Robert Carr Wood, of Hatton Garden, who, at the suggestion of Sir John Wilson, has constructed a very neat instrument, the tube of which is mounted in bronze. While the appearance of it is very much in its favour in point of neatness, its efficiency as a marine barometer is improved by the pumping occasioned by the ship's motion being entirely overcome. We particularly recommend these instruments to the attention of seamen and travellers.

BATTLE OF TRAFALGAR.—Mr. Huggins has published a well-executed engraving of this memorable victory from his painting, which our readers will remember having seen a short time ago in the Strand. It is a faithful copy of the original, and does full justice to Mr. Huggins's abilities; the positions of the ships are very happily chosen, and we can confidently recommend it to the collectors of these pictures. We understand that Mr. Huggins has just completed an excellent view of Sierra Leone, which, for its general beauty of style and faithfulness of detail, equals any of his former productions.

LIEUT. RODGERS'S ANCHOR.—Several of our correspondents have from time to time borne testimony to the great advantages of Rodgers's small palmed anchor; and having ourselves witnessed some experiments, which gave results much in its favour, we consider it right to apprise our readers of the opinion of an experienced seaman on its advantages, addressed in the following letter to the inventor:—

Royal Harbour, Ramsgate, Aug. 20, 1837.

Sir,—It is but justice towards you to state, that your small palmed anchors are very highly esteemed on our coast. In the chalky roadsteads of this part of the world, the most serious consequences occur to vessels from tripping their anchors suddenly in heavy squalls—the palm of the old anchor in such cases seldom or never taking hold again, so completely as it should do, in consequence of the tenacity of the soil. Not so with the patent anchor. It is scarcely started, when it catches firm hold again, and the ship rides.

But I must direct your attention to another situation, where it is still more important:—It is that of a vessel getting on shore on the Goodwin or any of the numerous sand-banks in our vicinity,—a case of too frequent occurrence. In such most trying exigency, when

the boatmen carry out an anchor, or anchors, the great difficulty is to get a sufficient range of cable on end to enable the old broad-palmed anchor to hook in, as it too often happens that the moment a strain is brought upon it, home it comes, like a scraper. This has occasioned the loss of many a fine ship. Now, I am credibly informed by our boatmen, that the patent anchor never fails of its purpose: and this principle also assures me, that as it becomes more in use, it will be still more appreciated, particularly in seasons of severe trial and distress.

I remain, Sir, &c., KENNET B. MARTIN,

Harbour Master, Royal Harbour, Ramsgate.

Lieut. Rodgers, R.N., Sharfield-Street, King's-Road, Chelsea.

Law Proceedings.

SEAMEN'S WAGES.

EDWARD SMITH, Henry Weymouth, Fortunatus Roach, Duncan White, William M'Quing, Arthur Pole, and George Gibson, seamen, late of the Don Juan steam-ship, belonging to the Peninsular Steam Navigation Company, appeared to prefer a complaint against John Ralph Engledue, a Lieutenant in the Royal Navy, and Commander of the Don Juan steam-ship, for refusing to pay them wages for a voyage performed between London and Lisbon and back.

The following was the decision of the magistrate, Mr. Greenwood, in this case, the full particulars of which, we are compelled, by want of space, to reserve for our next number.

Mr. Greenwood—I was prepared to give judgment yesterday, except that I was anxious to hear if there was any usage or practice which might have been taken as a precedent; but the evidence I have heard to-day rather tends to confirm than alter the opinion I yesterday formed of the case, as though it is true that the men in the General Steam Navigation Company's vessels are employed indiscriminately on all work, yet it is equally clear that there is nothing like uniformity of practice. Captain Engledue (interrupting)—But the practice on board the vessels belonging to the Peninsular Navigation Company is as I have stated. Mr. Greenwood—If you make inquiry, you will hear more than you have ever heard before on this subject, and you ought to have considered yourself here in a peculiar situation. The parties have waived the question of jurisdiction, and this most important question has come fairly before the bench. It appears, that the man Smith and his comrades were engaged as able seamen on board the Don Juan, on a voyage not set forth in the articles, but which afterwards turns out to have been to certain ports in Spain and Portugal. The crew engaged are of two classes, able seamen and engineers, coal-trimmers, and others connected with the working of the engines. The former are to be paid 2*l.* 10*s.* per month, and the latter class, 3*l.* 18*s.* Some verbal conversation takes place between the captain and the men, and he promises them an extra glass of grog to do what he must have considered extra work for them—to hoist up coals to feed the “bunkers,” and this he tells them shall cease when he shall have completed a machine, when they will have comparatively little or nothing to do on the voyage from London to Falmouth. The machine fails, and then the men, without much complaining do the work it was intended to perform; but arrived at Falmouth, they very properly inquire, if they

should be expected to do this work in future, as they should require a further arrangement. This was perfectly right, for they were not bound to do the work of engineers, or coal-trimmers, without being paid the extra wages given to such men. This the captain declines, and in language of a violent character, which, however, is denied. Captain Engledue—I did call them rascals. Mr. Greenwood—Well, is it of no consequence; but the captain immediately goes on shore and engages the services of eight other men, four coal-trimmers, and four seamen, evidently showing that he required coal-trimmers. Then follows what appeared to him a very strange and hard case—the men are taken away in the vessel, to use their own language, “prisoners at large,” and on their return made to submit to greater hardships, for no reason whatever that has at all been explained. I am asked to say, those men are not entitled to their wages. It must be borne in mind that there were two classes of men on board, their duties distinct and clearly specified and understood, else why tempt the men at Glasgow, when, if it was their duty, they might be commanded at all times. It seems to have been the intention of the captain to put the men on shore at Falmouth, but he would not have been justified in so doing, they not having refused any lawful command. The captain must pay the men the full amount of wages for the whole voyage. Masters must be protected, but it can never be borne that they should entrap men as able seamen, and when they get to sea insist on their doing the duties of coal-trimmers.—*Shipping Gazette*.

If the letters which have appeared in our pages on the subject of the ineffective state of maritime laws, required any proof of there being good foundation for the complaint which they contain, the decision of the magistrate in the case above alluded to would be sufficient. That there is a total misconception also of the law as it now stands, both on the part of the magistrate, the captain, and the seaman, we think this case will show is equally clear.

It does not seem to be generally known that the act usually known as Sir James Graham's, (we believe that of July, 1835,) is now the *only law* of the land, for the government of British merchant seamen. That this said act repealed all others having reference to the regulating of merchant shipping, (except the one enforcing payments to merchant shipping fund;) therefore, the whole being as we have said compressed into one act of parliament, and that not a very long one, nor one worded in a manner difficult to understand, it is the more surprising that such universal ignorance should exist respecting what the real nature of the law is.

We entirely agree with our correspondent whose letters we have from time to time inserted in our pages, that Sir J. Graham's law is extremely defective in its provisions: that it is ill calculated to answer the end which it had in view, of inducing order and good regulation on board the merchant ship; neither does it seem to have had the least good effect in amending the seaman himself, who appears to avail himself of the provisions of the said bill to take all the license, and to exhibit all the insubordination, of which our friend, the Master of a British Merchant Ship, has so frequently shown him to be capable. But let us turn to the case of the *Don Juan* where, as we have said, all parties seem to have been wrong.

It appears that articles were signed binding the men, as usual, “to

obey all lawful commands," &c., &c. The captain (who it appears is a young lieutenant in the navy) very incautiously, in requiring the seamen to get up coals out of the hold and put them in the coal boxes, (or coal hole, as called in the police report,) told them that he only wished them to do this duty on the passage round to London; (from the Clyde;) after which a machine would be completed which would do the work without hardly any labour on their part: thus enabling them to raise a question as to this duty being of *right* required of them,—a duty which we apprehend, but for this injudicious act of the captain, *could never have been questioned*. On this point the worthy magistrate at the Thames police office, seems to have been quite in the dark, and we must say, that both the captain and his solicitor failed in enlightening his worship most lamentably. But in our view the case is clear enough, and we will tell him that the duty required of these men must not be confounded with the duty of "coal trimmers,"—a station the duty of which was not contemplated for one moment, we are quite sure, by Captain Engledue, to be performed by an able or any other seaman.

The duty which Captain Engledue required to be performed, and the propriety of doing which he should never have allowed to be questioned, was, that the coals should be got up out of the holds, and started into the coal holes, leaving the application of them and the trimming of them to the engineer's crew. Now such ships as the *Don Juan* have not always the accommodation of coal holes, to contain all the supply of fuel required for "a sea-going steamer;" therefore they are of course obliged to carry the great portion thereof in the holds, and from thence the coal holes are supplied as often as necessary. Now if the seamen are not to do this duty we should like to know who is. If the coals were along side, it would surely be the duty of seamen to hoist them in, and start them into the coal boxes; if they are not to do this duty, we repeat, who is?—the stokers or fire men are constantly employed in a distinct duty, and the coal trimmers are at work in keeping up the supply of coals in the coal holes; that is to say, trimming them towards the hole in the engine room, whence the fire men receive them to feed the fires; and excessive hard labour we understand this to be. When we ask, then, is the disposable force of the engineer's crew to do this work, which the seamen of the *Don Juan* were imprudently led by the captain to fancy was not work for the sailor.

The question appears by the newspaper reports, to have been completely mismanaged on the part of the captain and his advisers; and when other captains of steamers were brought as evidence to prove what was the custom, the most complete confusion appears to have prevailed, and *the duty of providing coals for the coal boxes*, and that of coal-trimmers, or *those who managed the coals after they were put there*; through ignorance, of the nature of these duties were confounded together. The worthy magistrate certainly got nothing from the evidence to throw the least light on the custom; and to mend the matter, he then refers to a case decided by his brother magistrate on the same bench; (but who of course was not present at the time;) which it must be supposed from some blunder of his clerks, is taken by him, to have been the very reverse of what it really was, and he *decides, that the seamen have not refused any lawful order*. We believe the

case which the magistrate alluded to, was one that came before Mr. Ballantine some time ago; and referred to a ship belonging to the same company as the Don Juan, and in which case, the magistrate certainly determined distinctly, *that it was the duty of the seamen to get up coals out of the hold of the Iberia*, and justified and confirmed the captain's deduction of the expense he had incurred at Gibraltar, in hiring men to do the work which the seamen refused. The magistrate on the occasion in question, did recommend the captain not to press a further forfeiture, than that to which the seamen of the Iberia had subjected themselves; namely, the forfeiture of a month's wages for leaving the ship in London on arrival, and contrary to orders: but he never questioned the propriety of determining *exactly contrary to what his brother magistrate did in the case of the Don Juan*.

So much for the determination of the principle involved in the conduct of the seamen in the Don Juan, who it appears, after leaving the Downs, went to Lisbon, and returning in the ship, obtained the whole of their wages for the voyage, *without doing any work whatever!*—A pretty dangerous precedent this to be quoted in the next case. If the law as clearly described in Sir James Graham's act, allows all this, why, all that we can say is, "the sooner it is amended the better," but we question it being so, and fearlessly state, that the law clearly says—that when sailors refuse their duty, they are to be mulcted of a sum equal to double the pay, during such time as they continued off their work; which would, of course, have left these men without any claim for wages whatever. There seems no doubt that the captain acted injudiciously, and that he did not exactly understand the law, he talks (so the newspapers say) of their forfeiture of wages from refusal of duty; the act does not recognize any such forfeiture of wages, only a mulct of a portion; and it certainly was his duty to have taken them before a magistrate, who would have imprisoned them at Falmouth; and he as certainly need not have taken them to sea at all. This was badly managed, and if he had reason to believe that the men really committed the felonious act, of turning water into the ship at Lisbon, with the view of sinking her, he should have properly noted the fact in the log book, and upon evidence they would have been imprisoned. This measure the British Consul appears to have taken upon himself, without all that form; and evidence having been gone through, which would no doubt have enabled the captain to have got better through the affair at home. But after all, allowing for the omissions and mismanagement of the captain of the Don Juan, we cannot see upon what grounds, *either in law or justice*, the wages were decreed to these seamen.—Ed. N. M.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Commanders.—H. Young.

Lieutenants.—C. M. Touzean, W. P. Crozier, C. R. Barnber, C. Rowley.

APPOINTMENTS.

Captains.—Hon. R. S. Dundas, 1; Sir W. Elliott, C.B., 2; J. Townshend, 17.

Commanders.—W. D. Paget, 1; W. Croker, 28; T. Ogle, 20.

Lieutenants.—T. K. Sullivan, 1; R. Harris, 1; H. Schomberg, 1; J. Williams, 3; W. E. Triscott, 4; J. Hogg, 5; T. Edwards, 7; G. McAdam, 11; G. P. Rosenburgh, 14; C. C. Austen, 15; S. S. Woodridge, 15; Hon. G. Hastings, 16; Kenney, 21; J. Sankey, 17; R. T. Eyre, 17; E. Kenney, 1; B. Allen, to command, 24; F. Baugh, 6; T. Smith, 24; C. M. Touzea, 17; G. Raymond, agent, 27; R. E. King,

29; Lord H. Russell, 1; Gill, 20; H. Lawrence, 20; H. P. Galway, 20; J. W. Barrie, 20; Hon. F. Hasting, 21; H. M. Ellicombe, 3; J. Roepel, agent, 32; J. P. Jones; Holyhead P. Station; J. Ramsay, 28.

Masters.—J. Mc Donald, 1; W. Comben, 12; P. Millnan, 15; J. B. Tucker, 17; C. Dillon, 20; T. Codnor, 23; R. Bucroft, 20.

Surgeons.—J. Nott, 1; G. J. Fox, M.D., 15; J. Carmichael, 17; J. R. Reid, 23; H. Williams, 28; W. Guthrie, 20.

Chaplain.—M. Beebee, 10.

Pursers.—E. O. Maley, 1; J. C. Harris, 15; T. Kerrigan, 1; W. Brown, 18; T. Giddon, 20; J. Russell, 17.

Assistant Surgeons.—G. Doak, 1; J. M. Deas, 3; J. Allen, 8; H. G. R. Page, 10; I. Blackmore, 6; J. Mc Nicoll, 14; E. Alexander, M.D., 15; E. Davies, 28; G. Sloan; G. Ball, 20; J. Gordon, 33; H. R. Page, 10; L. F. Munro, 28.

Schoolmasters.—C. J. Tyers, 24; A. W. Lane, 1.

Second Masters.—J. Jeffrey, 1; A. L. Panchen, 14; J. B. Andrews, 15; J. W. Hall, 3; D. W. Wilder, 20; J. W. King, 1; J. Blachford, 24.

Mates.—C. F. Gorton, 3; T. S. Copinger, 5; G. Walker, 6; G. C. Fowler, 7; G. Heathcote, 8; G. B. Collier, 3; A. Little, 1; J. M. Mitchell, 18; J. O. Bathurst, 10; G. H. Seymour, 19; S. Maddock, 20; T. Wilson, 18; L. Pearson, 20; C. F. Hellyar, 20; C. Rainier, 20; G. Blane, 10; J. Branch, 25; G. Wellesley, 6; G. Popplewell, 8; E. S. Hinde, 10; R. Read, 20; R. Curtis, 20; G. B. Lawrence, 24; A. Cumming, H. Winthrop, J. B. Dickson, C. H. Hallett, E. M. Matthews, H. Bainbridge, W. Moorsom, C. J. Hoffminster, 1; B. Drury, 7; F. Stevens, 23; A. Paget, 30.

Midshipmen.—E. M. Lyons, 1; C. K. Carter, 8; F. C. Herbert, 8; Lord W. Comp-ton; Hon. F. Kerr, 1; W. Fisher, 3; R. Hall, 31.

Clerks.—T. Turner, 3; R. Singer, 13; W. Bannerman, 14; T. Dryden, 15; R. Loney, 1; W. H. Norman, 7; E. L. Back, 22; J. S. Singer, 26.

[Names of Ships to which Officers are Appointed.]

1, Melville; 2, R. Adelaide; 3, Pique; 4, Pembroke; 5, African; 6, Edinburgh; 7, Alligator; 8, Britannia; 9, Scout; 10, Donegal; 11, Hercules; 12, Victory; 13, Pylades; 14, Forrester; 15, Crocodile; 16, Rhadamanthus; 17, Tyne; 18, Excellent; 19, Royal George; 20, President; 21, Hercules; 22, Basilik; 23, Hyacinth; 24, Thunder; 25, Wellesley; 26, Pylades; 27, Iberia, St.V.; 28, Favourite; 29, Mindon; 30, Pearl; 31, Castor; 32, Don Juan; 33, Lapwing.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION TO 25th SEPTEMBER.

Sd., sailed; arr., arrived; rem., remained.

AT HOME.

African, Steam V., Capt. W. F. Beechey, arrived at Loch Ryan, 30th. Aug. surveying packet stations. *Alligator*, 28, Captain Sir. G. Bremer, Portsmouth, fitting. *Blazer*, St. V., Lieut. L. M. Waugh, Hanwaye, fitting; sailed for Falmouth. *Britannia*, 120, Capt. J. W. D. Dundas, Portsmouth harbour. *Caledonia*, 120, Capt. G. B. Martin. 24th Aug. arr. at Spithead. 29th: arrived at Plymouth, Admiral Sir J. Gordon, 18th Sept. arr. at Plymouth. *Cruizer*, Com. W. Wallis, 27th July; paid off at Sheerness. *Delight*, Lieut. W. Long, 19th Sept. arrived at Devonport. *Dido*, 20, Capt. L. Davies, 5th Aug. arr. at Gibraltar. *Donegal*, 78, Capt. T. Drake, in Hanwaye, fitting. *Edinburgh*, Portsmouth, fitting. *Espoir*, 10, Lieut.-Com. W. C. Riley, 4th. Sept. arr. at Plymouth; 16th paid off. *Excellent*, Capt. T. Hastings, Portsmouth harbour. *Fairy*, surv. vessel, Captain Hewett, Aug. 31 left Harwich. *Favourite*, 18, Com. W. Croker, arr. at Plymouth 4th Sept. *Firefly*, St. V., Lieut.-Com. J. Pearse, Hanwaye, fitting: 30th Aug. left for Falmouth. *Forrester*, 3, Lieut. G. Rosenburgh, commissioned at Plymouth 22nd Sept. *Hercules*, 74, Capt. J. T. Nicolas, Aug. 20th Spithead: 28th sailed for Lisbon, 30th touched at Plymouth, 1 Sept. sailed for Med. *Hornet*, 3rd Sept. left Chatham; 4th Sept. arrived at Sheerness. *Hyacinth*, Com. L. Warren, Portsmouth, fitting. *Inconstant*, 36, Capt. D. Pring, Aug. 22 moved into the sound from Hamoaaze; 31st Aug. sailed for Med. *Lapwing*, 3d Sept. left Chatham, 4th arr. at Sheerness. *Lynx*, Aug. 20th arr. at Portsmouth; 22nd sailed for eastward, to pay off; 24th arr. at Chatham; 1 Sept. paid off. *Melville*, 74, Portsmouth harbour, paid off 31st. Aug., and commissioned 1st Sept., by Capt. Hon. R. S. Dundas, for flag of R. Admiral G. Elliott, C.B., for Cape and Coast of Africa station. *Messenger*, St. V., 20th Aug., Portsmouth harbour. *Pearl*, 18, Lord Clarence Paget, 3rd Sept. sailed for West Indies. *Pembroke*, 74, Capt. F. Moresby, Aug. 20th in Plymouth-sound, 25th sailed for Cork. *Pique*, 36, Capt. E. Boxer, Portsmouth, fitting. *Pilot*, 16, keel laid down at Plymouth in August. *Pincher*, schooner, 20th Aug. arrived at Spithead; sailed for eastward to pay off, 30th arrived at Rochester, 1st Sept. paid off.

President, 52, commissioned by Capt. J. Scott, at Portsmouth, for flag of R. Admiral Charles Ross, C.B. for command in Pacific, and to relieve the *Dublin*. *Raven*, surv. vessel, Lieut. G. Bedford, 20th Aug. arr. at Spithead from coast of Africa; in harbour, fitting. *Royal George*, yacht, Rt. Hon. Lord Ad. Fitzclarence, Portsmouth harbour. *Royal Adelaide*, 104, Capt. J. Sykes, Hamoaze. *San Josef*, 110, Capt. J. Hancock, Hamoaze. *Spitfire*, St. V., Lieut. A. Kennedy, 16th Sept. arr. at Devonport. *Thunder*, surv. vessel, Lieut.-Com. B. Allen, com. at Portsmouth 9th Sept. to complete West India survey. *Tyne*, 28, Capt. J. Townshend, Portsmouth, fitting, commissioned 18th Sept. *Vestal*, 26, Capt. W. Jones, 15th Sept. arr. at Nore, to pay off a Sheerness. *Victory*, 104, Capt. Searle, Portsmouth harbour. *Volage*, 28, Capt. P. Richards, paid off at Sheerness about 1st Aug. *Wellesley*, 74, Capt. T. Maitland, Hamoaze, fitting; 5th Sept. arr. at Portsmouth from Plymouth.

ABROAD.

Andromache, Capt. H. D. Chads, 28, 3rd March arrived at Singapore, 10th sailed for Acheen, 10th Sept. arr. at Portsmouth, 15th Sept. arr. at home. *Actæon*, 26, Lord E. Russell, April 30 arr. at Lima from Panama. *Alban*, St. V., Lieut. Timling, July 3 left P. R. Jamaica for S. Thomas. *Algerine*, 10, L. W. S. Thomas, at Trincomalee. *Asia*, 84, Capt. W. Fisher, 4th Aug. at Cagliioni, 20th at Barcelona. *Barham*, Capt. A. L. Curry, Aug. 16th at Gibraltar. *Beagle*, surv. vessel, Com. J. C. Wickham, July—arr. at Teneriffe, 22nd sailed for Bahia. *Bellerophon*, 80, Capt. S. Jackson, 15th Aug. arr. at Malta. *Blonde*, 46, Capt. F. Mason, 21st April arr. at Lima from Valparaiso, 6th May remained and 1st June. *Bonetta*, 3, Lt. H. Deschamps, June 2 at St. Helena, 4th July at Cape. *Buzzard*, 3, Lieut. J. R. Stoll, 3rd June Fernando Po. *Cameleon*, 10, Lieut. J. Bradley, 30th arr. at Lisbon from Oporto. *Castor*, 36, Capt. E. Collier, 20th Aug. arr. at Malta from Corunna, 27th sailed. *Champion*, 18, Com. G. L. V. King, July 13th at Quebec. *Charybdis*, 3, Lieut. S. Mercer, 10th Sept. arr. at Portsmouth, 15th arr. at Nore, to pay off at Chatham. *Childers*, 16, Com. Hon. H. Keppel, 17th Aug. arr. at Gibraltar from Barcelona, 24th sd. for Gambia. *Cornwallis*, 74, Capt. Sir. R. Grant, July 25th at Halifax, arr. 16th from Portsmouth, rem. 29th August. *Confiance*, St. V., Lieut.-Com. W. Arlett, 24th Aug. left Malta for Athens. *Columbine*, 18, Com. T. Henderson, Aug. 2 at Ascension. *Comas*, 18, Hon. P. Cary, 25th June arr. at Port Royal from Barbados, 26th sd. for Carthagena, 17th July returned to Port Royal. *Conway*, 28, Captain C. R. Drinkwater, 21st April arrived at Madras from Cape, sailed for Rangoon. *Delight*, 10, Lieut. J. Moore, 18th September, arrived at Devonport. *Dido*, 18, Captain L. Davies, C.B., Aug. 5th arr. at Gibraltar from Malaga. *Dolphin*, 3, Lieut. T. L. Roberts, July at Princes I. *Carron*, St. V., Lieut. E. E. Owen, July 17th arr. at P. R., Jamaica from Barbados. *Echo*, St. V., Lieut. W. James, 22nd June arrived at Jamaica, P. R. from Barbados. *Fair Rosamond*, 2, Lieut. W. B. Oliver, 17th July at Sierra Leone. *Firbrand*, St. V., Mr. J. Allen, 16th Aug. at Antwerp. *Flamer*, 6, Lieut. J. M. Potbury, June 13 left P. R., Jamaica for St. Thomas. *Fly*, 18, Com. R. Elliott, 17th July arr. at Bahia. *Harrier*, 18, Com. W. H. H. Carew, 25th April at Coquimbo. *Hercules*, 74, Capt. M. F. Berkeley, 6th Sept. arr. at Lisbon. *Hermes*, St. V., Lieut. W. Blount, Mediterranean. *Imogene*, 28, Lieut. H. W. Bruce, May 28th left Rio for Pacific. *Inconstant*, 36, Capt. D. Pring, 6th Sept. arr. at Lisbon. *Lark*, surv. vessel, Lieut. E. Barnett, 18th July at Nassau. *Leveret*, 10, Lieut. C. Bosanquet, April 18th arr. at Mahia. *Lightning*, St. V., Lieut. J. Shambler, 15th Aug. at Elsemuir. *Madagascar*, 46, Capt. Sir. J. Peyton, 30th July sd. for Jamaica. *Medea*, St., 4, Com. H. T. Austen, Aug. 5th arr. at Gibraltar from Malaga, 20th Aug. at Barcelona. *Nautilus*, 10, Lieut. W. P. Croke, July 31st arr. at Gibraltar, 17th Sept. arr. at Portsmouth. *Orestes*, 18, Com. Newell, Aug. 15th arr. at Gibraltar from Malaga, 30th Aug. rem. *Partridge*, Aug. 4th arr. at Madeira, and sd. for Africa. *Pelican*, 16, Com. B. Popham, June 2nd at St. Helena, 4th July at Cape. *Pelorus*, 16, Com. F. Harding, June 1st arr. at Cape from England, 10th June spoken in 35° S., 22° E. *Pickle*, 5, Lieut. Haste, 4th July left P. R., Jamaica, on a cruise. *Princess Charlotte*, 104, Capt. A. Fanshawe, 20th Aug. Barcelona, 1st Sept. at Genoa. *Rapid*, 18, Lieut. Hon. G. S. Kinnaird, 6th Aug. arr. at Malta, 14th sailed for Barcelona. *Raleigh*, 18, Com. M. Quin, 11th April at Manilla. *Rattlesnake*, 28, Com. W. Hobson, 8th April at Sydney. *Ringdove*, 16, Com. Nixon, 23rd July arr. at Barbadoes, 26th Aug. left Halifax. *Rolla*, 10, Lieut. Glasse, 5th Sept. arr. at Plymouth. *Rose*, 18, Com. Barrow, 8th May arr. at Bombay from Mahia, 22nd sd., 1st June at Trincomalee. *Rover*, 16, Com. Eden, expected at Valparaiso 20th May from San Blas. *Russel*, 74, Capt. Sir W. Dillon, 17th Aug. left Malta for Athens. *Satellite*, 18, Com. J. Robb, 1st July arr. at Jamaica from Vera Cruz. *Sappho*, 16, Com. T. Fraser, Aug. at Newfoundland. *Savage*, 10, Lieut. Hon. E. Curzon, 29th Aug. arr. at Lisbon from Bilbao. *Scorpion*, 10, Lieut. Com. C. Gayton, July 24th arr. at Gibraltar from Barcelona, 20th Aug. at Barcelona.

Scout, 18, Com. R. Craigie, June 2nd at St. Helena, 10th June arr. at Cape, 2nd Aug. at St. Helena. *Serpent*, 16, Com. R. L. Warren, July 8th left Halifax for Bermuda, arrived 15th; 26th Aug. left Halifax for West Indies. *Sparrow*, 10, Lieut. R. Low-cay, 13th Aug. arr. at Falmouth, 23d sd. for Rio. *Talavera*, 20th Aug. at Barcelona. *Thalia*, 46, Capt. R. Wanchope, 2nd Aug. at St. Helena. *Vanguard*, 80, Capt. Sir T. Fellowes, Aug. off Villa Nova. *Vestal*, 26, Capt. W. Jones, 10th Sept. arr. at Ports-mouth from Halifax. *Volcano*, St. V., Lieut. W. Mc Ilwaine, 11th Aug. left Gibraltar for Malta. *Victor*, 16, Com. R. Crozier, 7th May arrived at Sydney. *Viper*, 18th Aug. at Ascension. *Wanderer*, 16, Com. Bushby, 3rd July left P. R. Jamaica for Chagres, 31st July returned. *Winchester*, 52, Capt. E. Sparshot, 1st June at Trincomalee. *Wolverine*, 16, Com. Hon. E. Howard, 2nd Aug. arr. at Malta, sd. 7th, returned 18th.

Births.

At Ilfracombe, the lady of George Herbert, Esq., Com. of HMS. *Temeraire*, of a daughter.

On the 9th Sept., in St. Paul's Square, Southsea, the lady of John Colwell, Esq., Purser, R.N., of a daughter.

On the 13th Sept., in the North Crescent, Bedford Square, the lady of Rear-Admiral Skipsey, of a son.

On the 1st Sept., at Hastings, the lady of Captain T. M. Mason, R.N., of a son.

Marrriages.

On the 26th Aug. last, at St. James's, Clerkenwell, William, elder son of Rd. Goodrich, Esq., of the Temple, to Amelia, elder daughter of the late William Illingworth, Esq., surgeon, R.N.

At St. Agnes, by the Rev. G. Bellamy, Mary, only daughter of Mr. Richard Newton, to J. H. Bellamy, R.N., eldest son of George Bellamy, Esq., M.D., of Plymouth.

On the 13th Sept., at the Abbey church, Malvern, Worcestershire, by the Rev. A. H. Small, B.D., Chaplain of H.M.S. *Victory*, Charles Bayne Hodgson Ross, Esq., C.B., Rear-Admiral of the Blue, to Jane, relict of the late Joseph Scobell, of Stonehouse, and Goodameavy Devon, Esq., and daughter of Philip Ball, Esq., of Worcester.

At Kingston, on the 22nd August, by the Rev. Dr. Morgan, Chaplain of her Majesty's Dockyard, Portsmouth, Edwin Scobell, Esq., of Goodameavy, Devon, to Georgiana Mary Cockburn, daughter of Rear-Admiral Ross, CB.

At Dublin, Lieut. S. W. Montague, R.N., son of the late Admiral R. Montague, and grandson of the late Earl of Sandwich, to Margaret, daughter of S. Pomret, Esq., of Mount Pleasant, Dublin.

August 31st, at St Margaret's Church, Westminster, by the Rev. John Barlow, MA., B. Marwood Kelly, Esq., Captain R.N., to Mary Ann, only daughter and heiress of Richard Price, of Highfield Lodge, in the county of Sussex, Esq., and of Duke-street, St. James's Park, London.

On the 12th Sept., at St. Sidwell's, Exeter, Captain George Broun, R.N., of Amwell, Bury, Hertfordshire, to Fanny Charlotte, eldest daughter of Lieutenant-General Granby Clay, of Baring-crescent, Exeter.

At Kingston Church, on the 24th August, Mr. Henry Roberts, of the Royal Engineer Department, to Mary, daughter of Mr. James Helby, of her Majesty's Dockyard, both of this place.

At Bath, on the 7th Sept, William Trevor Taylor, Esq., of the Bengal Civil Service, to Eliza, daughter of the late Rear-Admiral Western, of Tattinstone-place, Suffolk.

On the 12th September, at Newington Butts, Lieutenant J. S. Dixon, R.N., to Sophia, widow of the late F. H. Hunter, Esq., of Kennington common.

At Charles Church, Charles Augustus Yolland, Esq., Lieutenant, R.N., to Catherine Eliza, only daughter of Mrs. Gifford, of Portland-square.

Deaths.

Sept. 2nd, Richard Byron, Esq, Rear-Admiral of the White, and a Companion of the Most Honourable Military Order of the Bath.

Of Consumption, Lieut. George Trollope, R.N. (1835) nephew of Admiral Sir H. Trollope.

On the 21st August, at his seat, Moor-House, Limpsfield, Surrey, Rear-Admiral Robert Gambier Middleton, lately one of the Commissioners of the Navy.

At Richmond, on the 2nd August, Rear-Admiral Charles Fielding, aged 57.

On the 15th July, on his passage from Sierra Leone, Phillip Thomas, second son of J. W. Spicer, Esq., of Esher-place, late Midshipman HMS. *Wanderer*.

On the 12th September, at Wickham, near Canterbury, the only son of Commander J. H. Boteler, R.N., aged nine months.

At Stonehouse, James, the eldest son of Mr. James Chimmo, Purser of HMS. *Pearl*, aged 34.

On the 6th Sept., in the apartment of his father, Greenwich Hospital, Lieut.

Thomas Renwick, late of HMS. Wanderer.

Suddenly, at Falmouth, W. James, Esq., a retired Commander in the Packet Service.

Maria, third daughter of Com. F. Frankling, R.N., and wife of Mr. Stark, mathematical instructor HMS. Excellent.

Lately, Emma, the wife of Commander William Bouchier, R.N.

At Montrose, August 15th, Mrs. Jane Deacon, relict of the late Captain James Deacon, R.N.

At Worthing, September 7th, Emmeline, Louisa, daughter of Captain Sir Edward Parry, R.N., aged 16 months.

On the 26th Aug., the Rt. Hon. Viscount Bangor, Lieutenant R.N., (1809) aged 47.

At Gosport, Mrs. Harries, widow of

the late George Harries, Esq., Purser, R.N.

At Greenwich Hospital, Mr. W. Watt, (b.) assistant surgeon in that establishment, after undergoing a most painful amputation and severe suffering.

On the 19th Sept., in the City Road, London, Com. Walter Windeyear (1815.) He was an out-pensioner of Greenwich Hospital.

At Nacton, Lieutenant Hugh Montgomery, R.N., (1806,) aged 59.

On the 3rd July, off the Coast of Africa, Mr. H. J. Ennis, Second Master of H.M.S. Dolphin, aged 27 years.

On the 24th July last, in the Hospital, at Halifax, Mrs. John Smith, late Admiralty Clerk of H.M.S. Vestal.

At Portsea, 21st August, Lieut. R. Murray, R.N., (1826,) aged 38.

METEOROLOGICAL REGISTER,

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

AUGUST, 1837.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	T.	In. Dec.	In. Dec.	°	°	°	°	S.E.	E.	2	3	Od (2)	Od. (3)
2	W.	29.77	29.70	60	66	56	68	S.	S.W.	5	6	Or (1) (2)	Op (3)
3	Th.	29.69	29.68	67	72	58	74	S.	S.W.	8	9	Qp (2)	Qbc.
4	F.	29.72	29.73	66	68	56	73	S.W	S.W.	3	5	Bc.	Qbcp (3)
5	S.	29.89	29.96	65	69	54	72	W.	N.W.	2	2	Bc.	Bc.
6	Su.	30.16	30.19	58	65	47	68	N.	N.	4	4	Bc.	Bc.
7	M.	30.26	30.29	59	69	48	70	N.E.	N.E.	4	3	O.	O.
8	Tu.	30.36	30.38	63	69	51	71	N.E.	N.E.	4	4	Bc.	Bc.
9	W.	30.38	30.36	64	66	49	67	N.E.	N.E.	4	4	B.	B.
10	Th.	30.12	30.07	63	72	52	74	N.E.	N.E.	1	1	O.	Bc.
11	F.	29.96	29.94	65	76	57	76	S.E.	S.	1	2	O.	Bc.
12	S.	29.89	29.93	67	76	60	77	S.W.	S.W.	2	2	Bc.	Bc.
13	Su.	30.00	30.02	65	73	57	74	S.W.	S.W.	3	2	Bm.	B.
14	M.	30.17	30.21	67	75	56	76	N.E.	E.	2	2	B.	B.
15	Tu.	30.28	30.30	68	77	55	78	N.E.	N.E.	3	4	B.	B.
16	W.	30.26	30.24	65	76	53	77	N.E.	N.E.	2	3	O.	B.
17	Th.	30.13	30.10	67	73	58	75	N.E.	E.	2	3	O.	Bcp. (3)
18	F.	30.05	30.05	73	83	59	84	E.	S.	1	2	Bc.	B.
19	S.	30.16	30.18	68	76	60	78	S.W.	W.	1	1	O.	Bcm.
20	Su.	30.13	30.06	73	81	60	82	S.W.	S.W.	1	2	B.	Bc.
21	M.	29.92	29.98	70	74	66	76	S.W.	S.W.	5	4	Bc.	B.
22	Tu.	30.11	30.10	68	73	57	74	S.W.	S.W.	6	7	Qbc.	Qbcp. (4)
23	W.	30.16	30.14	67	74	56	76	S.W.	S.W.	3	2	Bc.	Or. (4)
24	Th.	30.06	30.05	65	72	64	74	S.W.	N.E.	2	2	Or (1) (2)	Or. (4)
25	F.	30.21	30.23	58	63	54	64	N.E.	N.E.	2	2	O.	B.
26	S.	30.22	30.18	57	66	45	68	E.	S.	3	3	B.	B.
27	Su.	29.89	29.87	66	62	50	71	S.W.	W.	5	5	Qor 1)	Qtr. (3)
28	M.	30.16	30.10	51	69	45	70	N.	N.	5	5	B.	B.
29	Tu.	30.03	29.91	57	66	43	67	S.	S.	3	3	B.	Ber (4)
30	W.	29.50	29.47	54	59	53	61	N.E.	N.E.	3	3	Or (1) (2)	Or (3) (4)
31	Th.	29.40	29.46	53	58	51	60	N.W.	W.	3	3	Op (2)	Betpl (5)
		29.44	29.42	52	60	44	61	S.W.	S.W.	2	2	B.	B.

AUGUST.—Mean height of the Barometer=30.013 inches; Mean Temperature=63.1 degrees; Depth of Rain fallen=4.20 inches.

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

ORIGINAL PAPERS.

NOVEMBER, 1837.

NOTES FROM THE JOURNAL OF CAPT. MASTERS, OF LIVERPOOL, ON SAN BLAS.

IN the rainy season, when the wind blows strong from the southward, a heavy swell sets in at San Blas, and as there is nothing to protect the anchorage it must be felt very severely, but I never heard of any damage having been done to the shipping in consequence.

There is some advantage in a vessel lying outside in the roads during the rainy season, for there the crews have purer air to breathe; and probably it might be more healthy than that of the port, besides being partially clear of Mosquitoes, and other tormentors of the same cast, which are very numerous. The crew also are easier kept on board. But if the ship has to discharge her own cargo, the expences of doing it will be considered; and if her long-boat is too small for that purpose, the launch, which must be hired, will most likely be manned by the crew; so that they are more liable to become ill, by being more exposed to the rain and to sun, than if a vessel was in the port; and in the next place, their meals would not be very regular: they would also get spirits by some means, whoever was in charge of the boat or launch, (providing that he should be even disposed to prevent it,) whenever she went on shore.

There is thirteen feet water on the bar of San Blas, in the shallowest part of the entrance, and very seldom less even in the neaps. By giving the point which forms the harbour a berth of fifteen or twenty fathoms, you will avoid a large stone, which is a wash at low water, and is about eight fathoms from the dry part of the rocks or breakwater. As soon as you are so far in, that the innermost or eastern part of the breakwater is in a line with the other part of it inside, which runs to the N.N.E., it may be approached to within ten or fifteen fathoms, and by keeping well off from the low sandy point which is on the starboard hand as you warp up the harbour, you will have the deepest water. But as the sea sometimes in the rainy season (although but seldom) breaks over the breakwater which forms the harbour, it would be best to moor close under the high part of the land on which the old ruins of a fort stand, with the ship's head up the river, and a bower laid off to the eastward, and an anchor from the starboard quarter, making fast on the larboard side to the shore, either by taking an anchor out or making fast to the rocks. It would be next to impossible that any accident could happen to the ship: the cargo can also be discharged with dispatch, and immediately under the eye of the master or mate, as the place where the cargo is landed would be about a hundred fathoms from the ship. The ship's long-boat would do more inside than two launches if she was outside; and besides, when the sea is heavy in the

roads the discharging of the cargo could go on. As there are no established pilots here, it would be advisable to engage a person to point out where the stone lays; the captain of the port is the best to apply to, and if he does not come off himself would most likely recommend a person. Should any vessel be inside, it is customary to apply to their captain for information; and although there is not much danger in getting in, it is still satisfactory to have a person on board who has even entered but once. Of course a Mexican would be preferred by being more accustomed to the place. The town of San Blas is built on a hill with a cliff on its western side; from the *commandancia* (or governor's house) and custom house is an excellent view both by land and sea. On the approach of any vessels a flag is hoisted on the southern flag-staff which is that of the *commandancia*; the northern one is that of the custom house.

When the Spaniards were in possession of San Blas, the harbour was kept clear of sand and mud, which has since collected and filled up the eastern part of the harbour; and it is also very much shoaler on the bar. I was informed by people who lived here before the revolution, that they had seen ships of war inside, mounting sixty guns, and upwards of a dozen others of smaller size, at one time; but now, at half tide, a boat can hardly get up to the arsenal, as the high nearest the town is almost filled up with mud. The shipping as well as the port was neglected during the revolution. One fine frigate, with her guns and stores on board, was allowed to sink at her moorings; and even after the Mexicans had taken possession of the place, others shared a similar fate; and now, the vessels which the Mexicans have purchased are rotting and going to pieces from the same neglect. San Blas and La Playa (the small village at the port) was a stirring place under the Spaniards. They had generally 600 men employed at the different works; and even after the Mexicans had gained their independence, the place was kept in repair and work carried on for a short time, but on a small scale to what it had been. At one time there were from sixty to one hundred men employed in the arsenal: the responsibility and labour attending it is not great: the stores consist of several guns, mostly without carriages; a quantity of anchors, the cables, and other ropes, are now useless; and most of the masts and spars are in the same condition; the roofs of the store-houses have fallen in in several places; the parts which are standing, very soon will. Trees have overgrown what was the rope-walk, and the whole is nearly a mass of ruins. The well is in middling repair, but the water from it is rather brackish. There are about sixty or seventy houses at La Playa, with a population of from three to four hundred.

During the rainy season, the town of San Blas is nearly deserted; not above two or three families remain, and these not from a matter of choice, as all who can afford it remove off to Tepic, or to a village between Tepic and San Blas. Fevers are said to be more prevalent at San Blas than at La Playa, (the village at the port:) Mosquitoes and sand flies are not felt at the town, excepting in the rainy season. The land to the westward is low, thickly wooded, and swampy; the effluvia rising from it in the rainy season must be anything but healthy or agreeable; and people in Mazatlan have as much dread of San Blas, as people in England have of Sierra Leone.

Tepic, the principal town near San Blas, is eighteen leagues from it. It is well elevated, but is not entirely free from fevers in the rainy season. The authorities (in the rainy season) of every department of the government all start off from San Blas, as it is only considered a temporary residence at any time. The charge of affairs is left in the hands of some inferior officer who has not the means to move, and on the arrival of a vessel, a courier is dispatched to Tepic, when they return, transact their business, and then go off again. But as all the merchants reside at Tepic there is no time lost by it. At La Playa, the people remain the year through; and being used to the climate they do not think anything of it. As their chief dependence for a livelihood is on the shipping it is their interest to remain. There are several shops at San Blas, but the greatest part of their stock appears to be a quantity of bottles filled with different coloured liquors.

The town of San Blas is built on a small hill, about 450 feet above the sea: it boasts of very few houses that do not want repairs; one I particularly remarked in which a family was then living, that had trees of a small size growing through the windows, doing considerable damage to the walls; in some parts of it the roof had fallen in, and bushes had grown up; but this is, with a few exceptions, the general state of the houses at San Blas. The church, which is rather large, is built of stone, (as are the houses,) but is now completely in ruins. Mass is now performed in a small place within the walls. As some scaffolding is up, there must have been some intention to repair it; but it has been put off such a length of time for want of hands, that there appears to be no chance of it. The Custom House, government warehouses, *commandancia*, and what were dwelling houses for the principal officers of the different departments, form a square, and is the nearest part of the town. These buildings are all going fast to decay: the three first bespeak the declining trade, and misery; the last, in addition, appears as if war and pestilence had passed over the place with all its horrors: I never saw a place with a more wretched appearance. The population, I think, could not amount to 300 in the healthy season; but on Saturday, which is market-day, the place has more life in it. The market is very well supplied with fruit, poultry, and vegetables, moderately cheap; and good fowls are 2 to 2½ reals each, plaintains 2½ reals per head, and other things in proportion; the sallads and cabbage are excellent with bananas, oranges, plantains, passado, green peas, potatoes, sweet potatoes, onions, with various other fruits and vegetables can be purchased here; the beef, for a warm climate, is not bad, and can be had daily at La Playa. Ducks and turkeys can also be procured. The greatest part of these things come from the neighbourhood of Tepic. Whatever is purchased at La Playa, that is, vegetables or stock, is a hundred per cent. above the Saturday market price; and many things cannot be had. Fish are also as plentiful as on all parts of the coast; and there are also excellent oysters here. Turtle at this time of the year were rather scarce, and as they are not made use of by the inhabitants, they are never caught unless a ship of war is in the roads, or a bargain is struck before-hand. I could only get two small ones. Fruit is better and cheaper here than at Mazatlan.

With respect to the trade of San Blas, it is merely the shadow of what it has been. Although the goods which are landed at Mazatlan,

are often reshipped for San Blas, to be forwarded to the interior, as the merchant has a great advantage in the former port; there are, independent of these, a number of merchants in a small way, shopkeepers, &c., who come down to make purchases at Mazatlan from the northern parts of the republic. For the importer of goods, Mazatlan is decidedly the best, by being less expensive; that is, at the present time.

The little I saw of the people at San Blas gave me a better opinion of them than those of Mazatlan. There appeared not to be such bickerings and underhand dealings, although it is not quite clear of jealousy. I had a letter of introduction to Don Vallejo, the contrador of the customs; he had been in England some time. Every information and assistance he could give me appeared to be done with pleasure. My consignee did not come down from Tepic until I was nearly ready for sea, and was then only there a few hours, when he sailed for Mazatlan. The lower orders of people, in their manners, and customs, are the same as at Mazatlan.

The launch hire in San Blas is ten dollars per day; of which, the patron gets one and the crew half a dollar each trip, to be paid by the ship; this is when she lies in the roads.

PORT ON THE S.W. SIDE OF GIBBI OR GEBY ISLAND.—*Molucca Islands.*

VESSELS adopting the Gillolo passage towards China may find the following information useful to them. We are indebted to Mr. Earl for it, the author of the recent valuable little work on the Eastern seas, who obtained it from the Singapore Chronicle of 15th April last:—

Feb. 6, 1837, the barque *Guillardon*, Bowman, on a voyage to China by the eastern route, put into a harbour on the S.W. side of Gibbi in lat. $0^{\circ} 6' S.$, long. $129^{\circ} 38' 30'' E.$, where she obtained water and refreshments with great facility. This vessel entering the bay, stood in for the south point of Fow Island, passing it at the distance of one mile, in eighteen to twenty-four fathoms mud, and anchored in the bay with Fow Island, S.W. $\frac{3}{4}$ W., and the S.W. point of the bay, S. by E. $\frac{3}{4}$ E., soundings twenty fathoms sand and clay. The creek at which the *Guillardon* watered bore E. $\frac{1}{2}$ S. from the south end of Fow Island; near the creek is a bluff cliff, by which it may easily be distinguished. The boats were able to enter the creek at half-flood, and to fill up the water casks from alongside. Some of the people from the shore, who are a mixture between Malays and Papuas, spoke a little English, and their behaviour was perfectly friendly.—*Substance of a letter from the master of the Guillardon, inserted in the Singapore Chronicle of April 15th, 1837.*

PIRATICAL ATTACK ON THE SCHOONER, THOMAS CRISP.

Constantinople, 29th July, 1837.

MR. EDITOR,—In these peaceable times, when a person sets out on a sea voyage, he does not put down on the list of perils which he may

have to encounter that of piracy. In many parts of the Archipelago, a sea frequented annually, not only by thousands of merchant vessels, but by a considerable number of men of war of various nations, boats full of armed men are prowling about, and boarding ships whenever they can do so with a fair chance of success, and without any great danger to themselves. As I have recently suffered from the violence of some of these plunderers, it may be interesting to your readers if I give a short account of their visit.

The schooner, Thomas Crisp, under my command, was loaded at Cardiff with a cargo of iron for Constantinople; and on the 29th June last we had got as far as the coast of Troy, off a village called Yenikuoy, about three miles below the entrance of the Dardanelles. The wind being foul, we cast anchor about a mile from the shore, and one man having been left on deck to keep watch, the rest of the hands turned in, little suspecting that danger was lurking near. Soon after ten o'clock the watch heard something striking against the starboard-bow, and went forward to see what it was. He perceived a body of men, armed with swords and pistols, scrambling on board by the fore rigging. He retreated aft hastily, followed by three or four pirates. The weather being warm, the sky-light was open, as was my state-room door, but that of the cabin was locked inside. The watch leapt through the sky-light, but on descending he received a sabre cut on the right shoulder, which nearly severed his arm. Two pirates also darted down the sky-light after him. The wounded man took refuge in the state-room, calling to me, "Captain, captain! pirates, pirates!" In an instant I was on my feet, and had drawn on my trowsers, when I perceived that the cabin was full of armed men, the door having in the mean time been burst open. There was no mistaking their intentions, as a pistol was presented at my head, and "money" was demanded in Italian. The mate had got out of his berth, had been knocked down and pinioned, one of the ruffians with his foot holding him on the floor, where he lay in a pool of blood, which was streaming from the wounded man, who was also pinioned.

Each of the pirates having lighted a candle, which he held in one hand, whilst a gleaming sabre, or a cocked pistol, occupied the other, money was again demanded. I gave all I had, amounting to about twenty-two pounds in gold and silver; but they were not satisfied, and struck me repeatedly. They then collected the only arms I had in the ship,—three common muskets, all my wearing apparel, that of the mate, as well as of a lady passenger, my chronometer, spyglass, and watch; in fact everything of value they could lay hands on. The lady was compelled to produce her trinkets, &c., worth about thirty pounds, which were carried off, even to the ring on her finger. The ruffians ransacked the cabin completely; the wine, porter, and spirits, were removed to their boat, and they even emptied the bread locker and beef cask, but still were not satisfied, and asked for the boy, who had hidden himself. On his coming forward he was seized by the neck, and with the point of a stiletto the skin was grazed off his throat, and he was told to confess if the captain had more money, or he would be put to death that instant. Frightened out of his wits, the boy said that there *was* more money on board, for which falsehood the mate reproached him, and received, as a reward for his interference, a heavy

blow from the butt end of a large pistol. I was also struck again at the same time, and the crew forward hearing our cries, supposed we were being murdered. Menaces and ill treatment, however, failed to produce more money; for I had none. Our situation was dreadful, as we fully expected that the scene would end in our all being put to death; and it was all I could do to keep up the drooping spirits of the lady, whose terror was excessive.

About twelve o'clock the pirates were evidently alarmed at something, and they hastily quitted the cabin, carrying off everything with them, and telling us to make no noise, or they would return and murder every soul of us. Before going away, they blocked up the companion, shut over and fastened the skylight, so that we were prisoners in the cabin, and remained in an awful state of suspense. The pirates were, however, gone. On coming on board they had secured the fore-castle, by putting on it the squaresail, and the part of the chain-cable overhauled, for a range on the best bower.

About half an hour after they had left us, the men forward hearing no further noise, took courage and managed to regain the deck. In coming aft to liberate us from the cabin, we fancied it might be the pirates returning to execute their murderous menaces, and our feelings were by no means to be envied. Our joy at perceiving that it was our own people was beyond bounds. We went on deck, and perceived that every thing portable had been removed from thence. I immediately looked to the wound of the watch, dressed it; and soon after the man, who had been for nearly two hours in a state of insensibility, revived. He is now doing well.

At day-break, about three A.M., on the morning of the 30th June, a breeze springing up, we weighed anchor without noise, set sail, and worked our way into the Dardanelles, where we received the most marked kindness from his Majesty's consul, Mr. Lander, and his kind lady, who offered every assistance to my female passenger. A protest was there drawn up stating the main features of the case.

You will oblige me greatly by inserting the present in one of your earliest numbers, for the information of such mariners as frequent these seas. The pirates are still in existence, and every shipmaster on reaching the Archipelago, should not only keep a good look-out for them, but, if possible, be prepared to repel their attacks. It may be worthy of remark, that mine is the fourth British vessel plundered within a few months off the coast of Troy, notwithstanding the large fleet we have in the Mediterranean, ostensibly for the protection of our commerce.

I am, Sir,

Your most obedient servant,

JOSEPH CRISP,

Master of the schooner, Thomas Crisp.

REFLECTIONS ON THE CONSTRUCTION OF OUR MERCANTILE MARINE.

THE select committee appointed last session of parliament to inquire into the causes of the increased number of shipwrecks appear, from their published report, to have entirely overlooked the numerous and fatal accidents that so frequently occur to steam vessels.

In August, 1831, when the *Rothsay Castle* steamer was wrecked, on her voyage from Liverpool to Beaumaris, and upwards of one hundred of the passengers drowned, several similar occurrences having previously happened, the outcry was loud and general for parliamentary inquiry, with a view to the prevention of such melancholy events in future. The subject was brought under the notice of the house by Colonel Sibthorp, who urged the necessity of immediate inquiry. He was sure that it was only necessary to point the attention of his Majesty's government to this subject in order to insure a proper degree of attention to the investigation which *must* take place regarding it.

Mr. G. Lamb said, "He certainly thought the subject was one which was deserving of the notice of that house, and begged to assure the honourable member, that his Majesty's government would give the subject the fullest possible consideration." We shall see presently how this promise has been fulfilled. In the September following a select committee was appointed, of which Colonel Sibthorp was chairman, and in October they made a report to the house. From the evidence, it appeared that many steam vessels, employed to convey passengers, were not built of adequate strength of scantling, and were otherwise improperly constructed; that they were not subject to any certain regulations; in fact, that the safety and security of the public was very little, if at all, attended to.

The committee, to remedy these evils, thought proper to submit to the house several suggestions, the most important of which were, that all steam vessels employed in the conveyance of passengers for hire, should be built with timbers placed and secured according to the plan of Sir Robert Seppings; that they should be licensed, and that, previous to granting such licence, they should be surveyed and examined by responsible officers appointed for that purpose, who should be required to certify the vessel as being perfectly sea-worthy, of sufficiently strong scantling, and properly fitted in all respects to undertake the service or voyage intended, and that this licence should be renewed periodically.

Many minor regulations, of great importance in navigating steam vessels, were also recommended by the committee. In regard to the great requisite of strength, and of course increased safety, let us attend to the evidence given before the committee.

Sir Robert Seppings says,—“I know of no improvement that can be made as to safety upon the steam vessels that are now in use by his Majesty, and what we are now making. They are filled in solid all the way up, and their internal fastenings do not lie to a right angle; they lie to an angle of forty-five degrees, and a system of trussing is introduced, and partial strength is avoided, and one uniform strength is introduced, if I may be allowed the expression, from stem to stern. No partial spot is unprotected.

“I should think nothing would induce me to give up the filling up of the ships, because we have had important instances where ships would have gone down if they had not been filled in: a cutter, off the Isle of Man, lost all her stern-post, and a considerable way up, what is termed, the dead wood and the bottom. We had one of our steam vessels, the *African*, going round to Portsmouth, got upon the Kentish knock, carried away her keel from end to end, and a great deal of

the plank at the bottom; but, nevertheless, she got round to Portsmouth without making little or any water whatever, which was prevented by the plan I have recommended.

“There are several instances of the same kind: the Gloucester had a very considerable shock in coming from the Mediterranean, in striking upon the famous rock off Gibraltar: she was very much shaken; she must have gone down if it had not been for that; she made little or no water; her keel was gone.”

Mr. O. Lang, in his examination, states,—“I have seen steam boats that were formerly built; they were built on a very light plan. The first instance of steam boat, the London Engineer, was very slightly built; the timbers were so slight you could see the day-light through them; they were in a very improper manner.”

“And in a way you would not certify to be in a proper condition?”—“Certainly not.”

“Are you aware whether many steam boats are built now in that manner?”—“Not quite in that manner; but too slight, I consider.”

“Therefore if they came a-ground they would give way?”—“They would.”

“When strong vessels would not?”—“Our vessels would not; they have been on shore repeatedly.”

Mr. James Ballingall gives it as his opinion, that it should be enacted, that all steamers should be filled in solid in their bottoms and sides, to above the line of load-water floatation; that were the commissioners of the navy to announce publicly, in any manner they might think proper, that having had twenty-one years' experience of the beneficial effects of solid bottoms in the ships of his Majesty's navy, in point of strength and safety, they would give a preference to vessels with solid bottoms, when steamers, transports, or hired vessels of any description were required,—it would have a beneficial effect.

After such conclusive and uncontradicted testimony, the remedy being so clearly pointed out and so readily available, it affords matter for much serious thought, that the report was, at that time, productive of no other profitable result than that the honourable house ordered it to be printed. No more was heard of the inquiry; time glided on, and the drownings continued as usual. Subsequently to the loss of the Rothsay Castle, the Erin steamer, from London to Dublin, foundered, and every soul on board perished. The Superb, from London to the Netherlands, and the Lord Blayney, from Dublin to Liverpool, were also totally lost, and all on board drowned. Others might be added, but humanity sickens at the contemplation of so many wholesale murders, and all their attendant consequences. The public naturally became excited on this subject, and the periodical, as well as the daily, press brought it into occasional notice. Various publications made their appearance, giving the world much valuable information as to the construction, equipment, and navigation of our mercantile navy generally—sailing vessels, as well as those propelled by steam. Statements of the most alarming kind were openly made, and remained uncontradicted, that ships were so slenderly put together that they could be built for no other purpose than to send to sea over-insured to get them wrecked; thus making traffic of human life a thousand times worse, in every point of view, than slave dealing. The period arrived when inquiry could no longer be withheld or resisted.

In June, 1836, Lord John Russell agreed to the appointment of a select committee to inquire into the causes of the increased number of shipwrecks, and to suggest means of remedy; but how has this terminated? Conditional terms were made with the chairman, the honourable member for Sheffield, that certain interested persons named, were to be received on the committee, and a pledge was required from Mr. Buckingham that "only the inquiry should be gone into during the session."

As might have been anticipated from a committee formed of members thus selected, the public generally, as well as several of the intelligent gentlemen who were examined, were grievously disappointed when the printed report made its appearance. Much valuable information, given by some of the witnesses, was altogether withheld. The evidence of others, when too strong for certain members of the committee, was stated only in part, and in some cases entirely expunged. Enough remains, however, to awaken the most callous or indifferent to the momentous subject of inquiry into the state and condition of our mercantile navy, where, without any legislative attempt at prevention, destruction of life and property goes on with a rapidity and to an extent that disgraces the name of civilized society.

It appears from the report:—

"That the number of ships and vessels belonging to the united kingdom, which were wrecked or lost in the periods specified below, appears, by a return made to the committee from the books of Lloyds, to be as follows:—

<i>" Number of vessels stranded or wrecked.</i>			
1816	343	1833	595
1817	362	1834	454
1818	409	1835	524
	1,114		1,573
<i>" Number of vessels missing or lost.</i>			
1816	19	1833	56
1817	40	1834	43
1818	30	1835	30
	89		129

"Making a total of 1,203 ships or vessels wrecked and missing in the first period of three years, and a total of 1,702 wrecked and missing in the second period of three years.

"That taking the number of vessels wrecked and lost, in the two periods named above, at the assumed value of £5,000 for each ship and cargo, on the average of the whole, the loss of property occasioned by these wrecks would amount, in the first three years, to £6,015,000, being an average of £2,005,000 per annum; and in the last three years to £8,510,000, being an average of £2,836,666 per annum.

"That the number of ships, in each of the years above specified, of which the entire crews were drowned, though the exact number of each crew is not stated, appears, by the same return made to your committee, from the books of Lloyds, to have been as follows:—

“ *Number of vessels in each year of which the entire crews were drowned.*

1816.....	15	1833	38
1817.....	19	1834	24
1818.....	15	1835	19
	—		—
	49		81
	—		—

“ Making a total of forty-nine in the first period of three years, and a total of eighty-one in the second period of three years.

“ That the number of persons drowned in each of the years specified, in addition to the above, and of which the number drowned belonging to each vessel is distinctly known, appears, by the same return from Lloyd’s books, to be as follows :—

“ *Number of persons drowned in each year by ships named.*

1816	945	1833.....	572
1817	499	1834.....	578
1818	256	1835.....	564
	—		—
	1,700		1,714
	—		—

“ That assuming the average number of persons, in each of the vessels of which the entire crews were lost, to consist of ten individuals, including officers, seamen, and passengers, it would appear that, in the *first* three years, the number of persons drowned were 588 in the forty-nine vessels whose crews were entirely lost, and 1,700 in the vessels of which the exact number in each was known ; making a total of 2,228 lives, or 763 per annum : and that in the *last* three years the number of persons drowned was 972, in the eighty-one vessels whose crews were entirely lost, and 1,710 in the vessels of which the exact number in each was known ; making a total of 2,682 lives, or 894 per annum.”

These results do not embrace the whole extent of loss in lives or property, occasioned by shipwrecks, among those vessels which belong to the united kingdom. They include only the losses entered in Lloyd’s books ; no reference being made to the losses accounted for by the numerous individual underwriters in all our great mercantile towns, as well as the various extensive marine insurance clubs throughout the empire, unconnected with Lloyd’s. The committee, therefore, most likely very much undervalue the loss of property in British shipping wrecked or foundered at sea, when they estimate it at three millions sterling per annum ; and the loss of life from the same causes is not less than 1,000 persons in each year. This last must be greatly underrated when we contemplate the annual waste of life in those sea-coffins,—the timber ships,—the frequent wreck of transports, with troops on board, the worse than gross neglect in the construction and outfit of our convict-ships, apparent in the drownings consequent on the wreck of the *Amphitrite*, *George the Third*, and *Neva*, two of them with female convicts, in which vessels upwards of six hundred human beings were lost. When we look, also, at the fate of many of our emigrant-ships, the same negligence, to use no harsher term, is unfortunately but

too glaring. In the year 1834 alone, seventeen vessels, conveying emigrants to Canada, were lost, and about seven hundred of those unfortunate exiles found a burial-place in the sea. It is painful to swell the list. Can this state of things remain without a heavy responsibility attaching to those who have the power of remedy? If, amidst the numerous legislative enactments that flow on us during every session, some of them of the most frivolous description, government choose to remain inactive on this subject of vital importance, will not some noble-hearted, independent member of either house of parliament stand forth the champion of humanity in alleviating private sorrows, by exerting himself to prevent those wholesale murders perpetrated every day, under the name of shipwrecks, and prove himself the true economist, by preventing the destruction of national property to so vast an amount arising from the same cause? What man of right feeling—what man not actuated by the basest self-interested motives—what honest man would not unite in any practicable plan to obtain so desirable an object? Why should it be left to an irresponsible and self-constituted body, under the name of “Lloyd’s,” to dictate regulations to the whole mercantile navy of Britain; under the name of “classification,” to fetter shipbuilders by certain forms and scantlings; destroying every incentive to improvement, encouraging the production of the very worst-constructed and weakest vessels, setting at nought every approach to that most certain of all principles—strength, and, of course, increased safety? Why, for the most sordid self-interest, should “Lloyd’s” exercise an exclusive privilege in direct opposition to public benefit? Must life, the most valuable possession of man; and national property, to the amount of millions, continue to be sacrificed annually that they may put money in their purse?

Among the various causes of shipwreck pointed out by the committee, as susceptible of removal or diminution, are,—

Defective construction of ships.

Incompetency of masters and officers.

Operation of marine insurances.

A few remarks on each of these, as corroborated by the evidence given before the committee.

As to the construction of ships, the first witness examined, Mr. James Ballingall, manager of a shipping company, and surveyor of shipping, an experienced seaman, both in the royal navy and in the merchant service, gives his opinion as follows:—

“I think a law ought to be passed, that all vessels ought to be built of a certain scantling or thickness of timbers, the dimensions to be got from the master builders in the royal dock-yards, whom I suppose to be the most competent persons; for this reason, that they are most in practice; who should specify what should be the thickness of the timbers, the outside plank and the inside plank; (if they thought proper to have inside planks;) the size of the different bolts, and the fastenings, and mode of construction on which the vessel was to be put together; and that an act should be passed to make this imperative, on the condition of getting a register to a merchant vessel; that surveyors, under the authority of government, should be appointed to see this complied with during the progress of the building, and afterwards to have it in their power to survey vessels, and at all times to see whether they were in a

proper and sea-worthy state, and that a certificate should be had from them before the vessel is allowed to clear at the custom house."

"Is it not the case that the government of this country, by an act of parliament, appoints surveyors to see that houses are built of particular strength and thickness, for the safety of those who inhabit them?"—"I apprehend it to be so as to partition walls in London."

"Do you not think much stronger reasons can be urged in favour of government enacting certain rules for the safety of ships than of houses?"—"Undoubtedly, where the risk is so much greater."

"If the outside planks were all joined in one connected piece," (holding up a model,) "the timbers are all open and unconnected here in the present mode of building; so that when once the water is passed the outside plank there is nothing to keep it out of the vessel. I propose putting them close together, whether they are sloping or diagonal. It would be better to put them in in the usual way, only close together; there would be then an additional substance to resist the water, even though the whole of the outside planks were perforated; and even if they were knocked off, it is an additional barrier against the water. The ceiling I would propose to put close together, so as to make it water-tight also. I would put it so as to run, not merely fore and aft, nor yet perpendicularly, the same as the timbers do, but diagonally across the timbers; it would strengthen them very much. This would be another additional security against the water. So long as they are separate there are two additional ones; but they would come to be consolidated into one, so that there would be only one substance; and, being close together and consolidated, it would be so much increased in strength, that the strength and safety would become as the breadths of the timbers and planks multiplied by the squares of their depths, which would give ten times additional safety as compared with the present mode.

"So that for one-sixth more of extra expense you could produce ten times the safety?"—"Yes, though the stem might be taken off, and the keel taken off; even though she might lose her stem and keel altogether, she would not be lost: this ought to be adopted in steam vessels. The vessels frequently get damaged under the bows; though, if the vessel I lately referred to had been solid, she would not have received the damage, and the anchor would not have perforated her. If, from any accident, it should have perforated her, the water would have been kept back by a strong retaining bulkhead; the water would only get in to fill that portion before it. If it got damaged about the middle, and there was a water-tight bulkhead forward, and another aft, in the worst of circumstances it could only fill that space so far as the bulkheads extend. If it got damaged in the after part of the vessel, and the other parts were undamaged, the water would only get into that part abaft the bulkhead."

Mr. Henry Woodroffe, secretary to the Seaman's Society, South Shields, himself an experienced seaman, replies thus to the following questions:—

"Have any considerations occurred to you as to the defective construction of ships? Do they build them as strongly as they did?"—"We have many instances of new ships failing in the first voyage."

"How failing?"—"There was the Princess Victoria, in 1833, on her

first voyage from Archangel, returning through the White Sea laden with grain, coming down on a very fine day, carrying royals, the ship absolutely burst to pieces : the mate and the boy were drowned, and the remaining part of the crew with great difficulty saved themselves."

" You think that occurred from the ship being badly built?"—" Yes. There was also the Nathaniel Graham, on her first voyage, came to Shields, and there loaded with coals, grindstones, and such like, and they had to have the principal part of the cargo out : last year she was put in dock and found very defective. I happened to be in a tavern where the shipwrights were who were employed on her, and they were speaking of the matter, and said they found it impossible to caulk the ship, for that she was lapped up and was so bad."

" Where were they built?"—" At Sunderland : and the Nathaniel Graham went round to Scotland or Ireland to take in passengers, and on the 20th of June last year, she either struck on an iceberg or a rock, and the ship literally fell to pieces, and forty one persons were drowned.

Robert Wall, Lieut. R.N., in his examination, gives the following opinion : " Every vessel ought to be built with a solid bottom : any person who has seen the straining of a deep-laden merchant ship in a gale of wind, must be convinced that three inches of oak planking is altogether insufficient."

Mr. O. Lang, master-builder in the King's Yard, Woolwich, a most competent authority, answers as follows :—

" Would a naval ship built in the dock-yard, have a bottom filled in solid?"—" Yes, every ship."

" Would that increase the strength?"—" It would increase the safety of the ship, and the strength, if it were filled in properly, by giving shift to the heads and heels of the frame."

" You would fill in the whole of her bottom?"—" Yes."

" Has that been the practice in building for the navy?"—" Yes."

" Have you formed any estimate of the additional expense that it would cost?"—" No."

" One-fifth or one-sixth?"—" No ; it is but the expense of the material in filling up the space."

" You think the increased safety would warrant that increased expense?"—" Yes, most certainly I do."

" Can you assign any reason why ship builders do not adopt that plan, if the increased safety would warrant the expense?"—" I cannot form any idea of the cause."

" If you were a shipowner, you would be disposed to adopt that plan?"—" I would."

" If you were insuring a vessel as underwriter, you would probably take a decreased premium?"—" Yes."

" In what way will that increase the safety?"—" Provided the ship should take the ground and disturb the planking of her bottom, and cut it through, for instance, the bottom being made solid, it would be water-tight."

It is therefore evident, that greater safety in the construction of merchant ships is readily attainable by the introduction of solid bottoms. This has been generally practised in the royal navy since 1815. Prior to that system, namely in 1811, the *Barham*, seventy-four ; *Saldanha*, thirty-eight ; *Defence*, seventy-four ; *Pandora*, eighteen ; *Hero*,

seventy-four; and St. George, ninety-eight, the latter with Admiral Reynolds on board, were all wrecked, and nearly the whole officers and crews were drowned.

Since the introduction of solid bottoms, many vessels so constructed have been exposed to circumstances equally perilous with those vessels above named, yet not one of them was lost: instance, the Success Frigate, Barham Frigate, Racer sloop of war, Lightning Steamer, Pique Frigate, and many others. A model of the Pique was exhibited before the committee, showing the extent of damage sustained when she ran ashore in the straits of Bellisle, on the coast of Labrador; and though she sustained very great injury from the very violent contact with the rocks, which, after perforating the bottom of the garboard strake, actually rubbed from four to five inches into the floor timber; yet, in consequence of being filled in solid, she floated off and came to England in safety, with all on board. It may naturally be asked, why so beneficial a system proved and matured by experience is not adopted in the building of our merchant ships. When we come to observe the working and effects of marine insurance, it will probably unveil one great and leading cause that retards and will continue to retard all real improvement, till interfered with and regulated by legislative enactment. But before doing this, let us make a passing observation or two on the class of persons which, under the present system, frequently get the command of ships; the report states,—

“That the frequent incompetency of masters and officers appears to be admitted on all hands; this incompetency sometimes arising from the want of skill and knowledge in seamanship, but more frequently from the want of an adequate knowledge of navigation; it being proved, that some masters of merchant vessels have been appointed to command after having been for a very short time at sea: that others have hardly known how to trace a ship's course on the chart, or how to ascertain the latitude by a meridian altitude of the sun: that many are unacquainted with the use of the chronometer, and that very few indeed are competent to ascertain the longitude by lunar observations; while some are appointed to command merchant vessels at periods of such extreme youth, (one instance is given of a boy of fourteen, all of whose apprentices were older than himself,) and others so wholly destitute of maritime experience, (another instance being given of a porter from a shipowner's warehouse, who was made a captain of one of his ships,) that vessels have been met with at sea who were out of their reckoning by several hundreds of miles, and others have been wrecked on coasts from which they believed themselves to have been hundreds of miles distant at the time.”

Little need be added to this, further, than that it is fully borne out by all the evidence brought forward. The remedy proposed by the committee would no doubt prove efficient, and could easily be carried into effect; namely, to authorize, by enactment, the formation in London of a mercantile marine board, to direct, superintend, and regulate the affairs of the mercantile marine of the united kingdom, on such a plan of organization and control, as shall unite a due regard to the private interests of the shipowners, merchants and underwriters, whose individual property may be embarked therein, with an equal attention to the public interests in the preservation of the national

capital from destruction at sea. And, above all, in securing as far as possible the safety of the lives of those who may be engaged in navigating the ships and conducting the maritime commerce of the country.

The formation of certain standards of qualification in seamanship and navigation, to be attained by officers before they should receive licences of appointment to particular grades in the merchant service; and certain higher standards of qualification in seamanship, navigation, and nautical astronomy, to be attained by masters, before they should be entitled to receive licences of appointment to the command of vessels of different classes and for different voyages."

But let us carry the inquiry a shade further, to ascertain why incompetent and inexperienced persons are ever employed in the command of merchant ships, it being a point on which every individual shipowner could by inquiry easily satisfy himself. The evidence of Mr. Ballingall will solve this problem.

"Do you know any instance of losses that have occurred from the incompetency of commanders and officers?"—"Yes, I do."

"What motive could lead to the appointment of incompetent persons by shipowners, their incompetency being known?"—"The system of over insurances will afford a key to explain the whole."

"Do you think they prefer incompetent persons, that the ships may be more likely to be lost?"—"To be sure, when they are over insured."

"Is it the practice to insure ships for more than their value?"—"I conceive there is a very large proportion of the mercantile navy that would be scarcely saleable at any price whatever which are sent to sea insured for many hundred pounds."

"More than they are worth?"—"Yes."

"More than they would sell for in the market?"—"Yes, they are worth nothing more than the materials."

This view is also corroborated by Mr. Woodroffe, Lieut. Wall, and others.

When insurance, in place of being, as originally intended, a protection against perils of the sea, is converted into a system which, in its operation, enriches the shipowner, underwriter, and those connected with and employed by them, at the expense of the public; it is high time for the public to look after their own protection. The popular delusion, that underwriters make up losses to the insured from their own funds, while the truth is, they have first drawn those funds from the public in the shape of premiums, is just as correct as the opinion, that it must be the interest of the underwriter to encourage the building of safe ships. Why, safe ships would be his ruin. His interest is best promoted by increasing the number of shipwrecks, and consequent destruction of merchandize. And this is most easily and quietly accomplished by encouraging the building of cheap, weak, and unsafe ships, followed of course by high premiums of insurance, as their natural offspring. From this source was begotten "classification," and no child could have been more dutiful to its parent.

This working of the system becomes a bond of union, binding shipbuilder, shipowner, merchant, underwriter, and all those tradesmen employed by them, to one uniform mode of action, tending to the posi-

tive loss and disadvantage of the public. Let us illustrate these views. The report states,—

“That the system of marine insurance, though affording the means of protecting individuals from excessive loss, has nevertheless a tendency, by transferring the pecuniary responsibility for such losses from the owners of ships to the underwriters, who insure them, to induce less care in the construction of ships, less efficiency in their equipment, and less security for their adequate management at sea; inasmuch as the risk of such loss to the shipowners can be covered by a fixed premium of insurance; which, being charged on the freight, and then recharged on the goods conveyed, fixes the real responsibility and real loss ultimately on the public; as all the parties actually engaged in the transaction can secure themselves from any participation in such loss by the aid of marine insurance.”

It will be observed, that under this head, the committee suggest neither alteration nor improvement, which, looking at their original construction, could not indeed be reasonably expected from them. No sportsman would be so foolish as to destroy his decoy; and many of the members no doubt prefer that matters should remain as they are; but some protection to the public, who ultimately pay for all this enormous loss, is absolutely necessary and must be obtained. In addition to the evidence already mentioned the following may be added, being part of the examination of Mr. Woodroffe:—

“You mentioned the ship of a friend of yours; the condition of that ship was such, you thought she would be lost and she was lost: do you know if she was insured?”—According to his account she was valued at £2,100.”

“Did any examination of her take place before she went to sea on that occasion?”—“None whatever.”

“Was any insurance recovered on her after her loss?”—“There is no doubt of that; and the owner bought another ship with the money, and the ship is now sailing backwards and forwards.”

“You stated, in your opinion, you did not think her worth £400?”—“By no means.”

“Do you know any similar instances?”—“Many.”

Lieut. Wall gives similar testimony:—“Supposing the assumption to be correct, that shipwrecks are on the increase, to what cause do you principally attribute the frequency of these losses?”—“The impression on my mind is, that the mercantile marine of this country is in a state of progressive decay and disorganization: it appears to me to be totally neglected; it would be almost impossible to assign any cause in particular, they are so many and so various.”

“What strikes you as being the principal one?”—“There is no question that the injurious operation of marine insurances is the principal cause.”

“How does that operate injuriously?”—“It appears to me, in fact, that the underwriter’s trade consists in the wrecking of ships, and increases in proportion evidently to the casualties of the sea.”

“Do you think that underwriting flourishes when there are more shipwrecks, and becomes less profitable the more they decrease?”—“I do.”

“So that if ships could be rendered so safe as not to be lost at sea,

the business of underwriting would be at an end?"—"No doubt of it, they are cause and effect."

This is corroborated by Lieut. Forrest, R. N. in his answers:—"During the time your attention has been drawn to this subject, and in which you have been acting as the master of a trading vessel and a steamer, has it appeared to you that shipwrecks have been on the increase in proportion to the whole number of ships afloat or otherwise?"—"I have no certain data to go upon in regard to that, but I think, from what I have observed, they really are on the increase."

"To what cause do you chiefly attribute that?"—"The primary cause I conceive to be the system of sea insurance."

"How does that operate as a cause?"—"It operates in this way, that a person can insure his vessel for what sum he chooses at present; he has merely to state a sum, and the underwriters will take her; if she is lost, there is no risk."

The remedy is practicable and easy; put an end to insurance on freight, an absurdity on the face of it, enabling a shipowner, to secure the same profit, or probably more, whether the cargo his ship carries should sink in the sea, or be delivered safely in port according to contract. Who else could secure to himself payment for labour unperformed? Let legal limits be put to the amount any owner may insure on the true ascertained value of his ship, say to the extent of three-fourths, taking the risk of the remaining fourth on himself. This regulation would not be long in producing strong and safe ships, with competent officers to take charge of them. But till the legislature interferes, and authorizes by enactment the formation in London of a mercantile marine board, with branches at the outports to superintend and regulate the whole mercantile marine of the united kingdom; to frame a code of maritime laws; to examine and license officers; to promote and encourage nautical improvements; to perfect a system of marine insurance, and classification of ships, no real and lasting improvement can take place.

No branch of our national trade, from its vast magnitude and importance, more loudly demands the interference of government, to weed out those evils, that have silently interwoven themselves into it.

When we contemplate the thousands of lives that are every year lost to the community, drowned in the full vigour of their powers, sacrificed to support a vicious system, is there not ample opportunity to exercise true humanity and patriotism, by employing means to prevent this wanton waste and destruction of life and property at sea?

In concluding these reflections, it is right to advert to the zeal and ability displayed by Mr. Ballingall, in forcing a knowledge of this subject on the attention of the public. To him the public are indebted for a knowledge of facts, connected with the system, which, before he took the subject in hand, were not even suspected. To him may be applied the eulogium of a select committee of the House of Commons, on the improvements introduced into the construction of our ships of war, by Sir Robert Seppings. "These services," the introduction of solid bottoms, diagonal riders, &c., into ships of war, "although attracting no public admiration, will continue to confer a lasting benefit on mankind, long after that period when the effects of victories, however splendid, shall have passed away." Why are not

these improvements applied to our merchant ships, in which, for various reasons, they are much more necessary, than to our ships of war, and their adoption therefore imperatively required by an act of the legislature.

JOHN BULL.

Dysart, March, 1837.

ON PROPELLING STEAM VESSELS WITHOUT THE AID OF STEAM.

By Mr. George Peacock, Master, R. N.

H.M. Steam Vessel of War, *Medea*, Malta, 15th June, 1837.

MR. EDITOR,—Should you find space in your interesting periodical for the following notice of a simple mechanical application, I have had the honour of proposing and fitting to H.M. steam vessel of war, *Medea*, for propelling her in a calm, you will oblige yours very faithfully,

GEO. PEACOCK.

Since H.M.S.V. *Medea* has been on the Mediterranean Station, (which is now nearly three years,) she has gone over more than 13,000 miles *under sail alone*,* with the wheels disconnected and revolving by the undershot action. She works remarkably well, which is proved by her having *beat* out of Port Naussa, (Paros,) with a double reef topsail breeze, blowing dead in; and once having *turned* into Malta harbour, (Vallette,) a feat, rarely attempted even by a smart frigate. I do not recollect a single instance of her missing stays; her best doings are in strong winds plying to windward, when she has frequently shown great superiority over the rest of the squadron; but in light airs, when her velocity is not sufficient to make the wheels revolve, she is always in the rear, and has frequently from this disadvantage been left becalmed at the entrance of a port, and kept out for the night, whilst the other ships have reached the anchorage. To obviate this (when the shortness of the distance to be accomplished might make it practicable) the idea suggested itself to me, that if an 18 gun brig could sweep in and out of port in a calm, with large unwieldy oars, why should not the *Medea*, with the same compliment of men, avail herself of similar means, when a beautiful set of light concentrated sweeps, capable of obeying moved with at least half less loss of power by friction, &c., presented themselves in the shape of paddle wheels. Having these, the next object was to apply the *modus operandi*.

The first method that suggested itself was by winches or the capstan, but knowing that neither of these means could be fitted without incurring an expense which would, perhaps, hardly warrant the application, to say nothing of the extra weight consequent upon such application, I hit upon the following simple contrivance, which, on communicating to Commander Austin, with a diagram, he permitted me to fit to the *Medea's* wheels, *by our own resources*, and which was finished and put in practice on the 10th instant.

* In addition to this distance, the *Medea* has, since she was commissioned in 1834, gone over 22,000 miles under steam, and is at this moment fit to go as many more, needing no repairs.

To the inner side of the inner arms between the two outer polygons a set of iron lugs, shaped like the letter V, are riveted on, large enough to take a $3\frac{1}{2}$ hawser. Two iron fairleaders with rollers in them, a foot apart, project from the inside of the paddle-box, immediately over the shaft, and are of such a height and distance from the side as to insure the lugs alternately catching the hawser, and at the same time prevent the possibility of the arms or lugs coming in contact with them when the wheel springs a sea way, steaming, which every steam vessel's wheels are more or less liable to. A hole two inches in diameter, nicely leaded, is bored in one of the steps, at the fore and after part of the paddle-box, through to the inside, at a convenient height for a man to pull from, in a horizontal direction, and at an angle sufficient to prevent the inner ends of the paddle boards picking up the bight of the hawser in its rotatory progress; which angle also guides the position for the two leading blocks, one of which hooks on to a timber head on the forecastle, and the other at any convenient length abaft the wheel, according to the number of men who are to clap on the hawser, which is a $3\frac{1}{2}$ cablet cut to a convenient length, and has an "ELLIOTT EYE" spliced in each end. This hawser is rove as follows;—one end is first passed through the after hole, then through the foremast fairleader over the iron lugs alternately, then through the aftermost fairleader, (crossing the feeding part between the fairleaders,) and brought out through the foremost hole, where it is lashed with small line to the other end; which, in the mean time, has been rove through the after and foremost leading blocks, and brought to the foremost hole in readiness. When the lashing is secured, (which should be a piece of good stuff, and the turns passed with care, so as to preserve the size of the hawser as much as possible,) the after leading block is bowsed, taught with a jigger, the larboard and starboard watches man their respective messengers, the band strikes up, and "off she goes."

On the first trial we cast off from the ordnance buoy in Malta harbour, and having backed her sufficiently to clear it, went on a-head, proceeding towards the entrance of the port against a light N.E. breeze. We passed between H.M.S. Rodney, and "Nix Mangare" quay, at the rate of two knots per hour; and having gone round H.M.S. Nautilus, returned back to the ordnance buoy and moored as before. I do not think her greatest velocity exceeded two knots per hour; but of course, it could not be expected this rate could be kept up for any length of time, for the labour of walking along the deck in a hot sun is alone great, to say nothing of the hauling part of the business. When she was going at the greatest velocity the men appeared to be walking at the rate of from three to three and a half miles per hour.

The men, on being asked the question, declared it to be hard work; but it must be observed, that nearly all hands had been down with influenza, and only a few days out of the list, which, added to a first trial, offered great disadvantages both as to speed and labour. Improvements have suggested themselves, relative to the position of the lugs, and other detail, should the Lords Commissioners of the Admiralty order the other large class steam vessels to be fitted; the expenses attending the whole affair are not worth mentioning. Should the wear and tear of rope be a consideration, (although rounding is quite good

enough for the purpose,) by bringing the lugs down the arms parallel with the lower part of the fore capstan, (which stands exactly between the two wheels,) and using chain messengers, arming the capstan by a simple cast-iron rim, with a double groove, and "bringing to" the messengers contrary ways, the ends being connected by a peculiar kind of shackle, which I have invented for the purpose, to facilitate their passage through the fairleaders and metal sheaves, which would be required instead of holes, in this case, half the ship's company would be sufficient to turn the wheels, thereby affording a spell, which is a great desideratum.

The size of the circle described by the lugs on the arms would, of course, be regulated by the height of the deck above the shaft; I have calculated, that where Medea's might be shifted to, if the men "walked round" the capstan at the rate of four miles per hour, the velocity of the vessel in a calm would be about two, which might thus be kept up for at least an hour by having spells. In walking along the deck much power is lost by the "breaking off;" whereas it is constant at the capstan, and a man will, I believe, push much more than he can haul *horizontally*, with the same expense of power. In the late trial with the hawser we had only thirty-three men of a side; and as *five* are sufficient to turn the wheels, slowly, when lying at a buoy, that number may be called friction, and all the rest available power. If, instead of sending boats to tow, (a method usually adopted for shifting berths to coals, &c.) their crews were to come on board, their power would be much more available either at the capstan or hawser than in the boats, tugging at one another's stems, and transmitting about a third of it only to the ship. I have seen no less than twenty boats before now tugging a steam packet round from the quarantine harbours to Vallette, where there could not have been less than 150 men pulling, and although it was nearly calm it occupied upwards of two hours with a string of boats a-head; likewise, your ship is completely at their mercy, the helm being of little use where the harbour is circuitous and narrow, requiring sharp turns.

Had I not already trespassed so much on your valuable pages, I should have furnished explanatory diagrams; but I trust that the description here offered of two such simple applications of power will be sufficiently understood, and, that although it may appear somewhat ridiculous to propel steam vessels by manual labour, I only recommend the plan being fitted to such steam vessels as are intended to cruise under sail with a squadron; it is simple and economical, and I hope may be found serviceable.

I have much pleasure in subscribing myself,

Your constant reader, and most obedient Servant,

GEO. PEACOCK,

Master of H.M. Steam Vessel of War, Medea.

P.S. It may be as well to observe, that owing to the beautiful simplicity with which Maudslay's engines are connected to the wheels, we can connect or disconnect in five minutes; we have done it in three minutes—both wheels.

“BRITANNIA,” OR THE MORAL CLAIMS OF SEAMEN.

MR. EDITOR.—Last month I sent you some remarks on the above very able and praiseworthy publication; promising to take up the subject again, and consider the reverend author's suggestions for bettering the condition of the seaman. I now proceed to my task, and although I admit at once, that the benevolent feeling of Mr. Harris, towards the class of men whose condition is so ably described in “*Britannia*,” is conspicuous throughout the plans devised by him, as likely to improve them; yet, I cannot but differ from him in opinion, as to the practicability of some. My present object will therefore be, an attempt to select and simplify what I consider may be found impracticable to carry out; and to endeavour so to separate the difficulties from the really useful part, as to suggest what may effect the end sought for,—the real improvement of the British seaman.

The reverend author has arranged his plans under twelve different heads, upon which I would observe :—

First.—“*The erection of hospitals and infirmaries, for the infirm and indigent sick.*” Let me ask,* what becomes of the one shilling per month paid by every seaman, (and two shillings by every master?) I have often been asked by the seamen themselves, on deducting this sum from their wages, but could never answer the question. An Act of Parliament, (4th and 5th Will., chap. 52,) was passed a few years ago, doubling the sum previously paid; and purports to be “for the relief and support of the sick and disabled seamen, and the widows and children of such as shall be slain or drowned in the merchant service.” In note A of “*Britannia*” it is stated, that “in 1833, there were belonging to British registered ships 164,000 sailors, in addition to 40,000 supposed to be unemployed, or always on shore looking out for new ships.” According to this statement, deducting an allowance for apprentices, who contribute nothing, suppose 20,000, there are always contributing one shilling each, per month, 144,000 seamen! which amounts to £86,400 yearly; add to which 24,385 masters, who contribute one shilling per month extra, or £14,631, making altogether £101,031 yearly. Again, I ask, how is this enormous revenue applied?—a revenue at once sufficient to endow another Greenwich. Why are not some active steps at once taken to do so? instead of which, seamen are called upon to support by further (voluntary) subscriptions from their earnings, that splendid hospital ship, the “*Dreadnought*,” and other similar establishments at the outports; a subscription, which, for my own part, I never encourage, because I think that they have a *right* to be relieved from a fund to which they have been paying all their lives. If this view be correct, I cannot see why, to accomplish the first object of the reverend gentleman's plans, “the benevolence of Christ's followers” is to be called for. Sailors, I maintain, have and continue to subscribe a sum which entitles them to be taken care of in age and in sickness.

Secondly.—The next great desideratum is “*the establishment of comfortable and respectable lodging houses.*” The description in “*Britannia*,” of the sort of places to which the poor, thoughtless and

* Perhaps any of our readers will answer our correspondent.—[Ed. N.M.]

improvident being, the British sailor, is led, "to be victimized,"* certainly would seem to call for some such establishment. But I think I am not differing from the opinion of almost every practical man, when I say, that such attempt *of itself*, will end in failure; and I appeal to the want of success which has already attended everything of the kind. Seamen require a vast improvement indeed before they will resort to them; but act upon the next recommendation of the reverend author's, and then, perhaps connected with it, these seamen's houses may be made to act most admirably; I mean,

Thirdly.—"*Savings Banks*." Only once induce a sailor to put a sovereign into one, and you have laid the foundation of his reformation. All experience of the effects of these most excellent establishments has proved their benefit. The observations of Mr. Harris, on this subject, are entitled to the greatest respect, and are unquestionable. Amongst "the principal objects to be aimed at in the establishment of such an institution" there are enumerated those, which, if well managed, would effect all that could be desired. But I only select one in particular, because I am quite sure it would be so wholly superior in its working to the absurd law at present existing, "for registration of seamen;" a law so totally inefficacious, so altogether childish, that I never shall cease holding it up to ridicule in every way in my power. But once form a Savings Bank, as recommended by Mr. Harris, and in a depositor, you have not only the man registered *but his character*; a matter so difficult to come at at present, that I for one have long since ceased to ask for it, and prefer running the risk of what the man may be, to taking the informal matter of course thing called "a character." Depend on it, that "a man registered," by having become a depositor in the Savings Bank, will be looked for by every commander of a merchant ship as a desirable man; no further question need be asked.

I have already said nearly as much, in my letter in your number for February last year, of the men to be found in the "seamen's house," therein alluded to. Connect a respectable establishment of this nature with the Savings Bank, and we shall then, I think, see everything that can be wished in the improvement of the sailor. I entirely agree in the remark, that "British seamen do not stand in need of charity, but justice;" and upon that ground, I would certainly have such an establishment as Mr. Harris has sketched pay its own expenses. It merely wants, as he properly observes, "the general superintendence of influential men." Here we have a plan at once clear and practically useful; its effects cannot for a moment be doubted; not a shilling need be subscribed by way of charity; but some of the abundant funds of "influential men" *lent*, to set the thing on foot, to be repaid with interest, or the necessary funds advanced out of the merchant seamen's dues.

Fourthly.—This item of the reverend gentleman's benevolent views, is altogether embraced in the establishment of the Savings Bank; and being already remarked upon, I will only quote a part of it, as being worthy to be held in remembrance. Speaking of "registration" he says, "This suggestion indeed forms part of the preceding plan,"

* See Nautical Magazine, for June, p. 674.

(meaning Savings Banks,) "but it seems so important as to deserve distinct consideration; for only let it once become generally known, that the owners of ships consult this register for men, and the circumstance would operate as a powerful recommendation to seamen in favour of the Savings Bank; while, on the other hand, this connexion with the Bank would furnish a presumptive guarantee for the sobriety, providence, and general steadiness of its depositors, they would mutually recommend each other; and what is best of all, a demand for character would be created and proclaimed."

Fifthly.—"*The establishment of sailors' temperance societies is obvious and indispensable.*" The reverend author states, that "its practicability is evident;" and certainly he does show such proofs of its working, especially in America, as go far to bear him out. I cannot but however entertain strong doubts on the subject: I should be more disposed to place reliance upon *the example of their superiors*. Now every one knows how much this beastly sin of drunkenness has diminished of late years; so much so, that, in respectable society, it is positively "obsolete." The very suspicion of a man being a drunkard, is sufficient to exclude him from the society of gentlemen; and however it may be the vulgar prejudice to believe that *we* are exceptions, I will, without fear, assert, that the great bulk of those who command respectable ships, are as free from this vice as any other class of men whatever. But I fully agree with those great authorities quoted by the reverend author, and admit the great deference to be due to their opinions, as well as that "drunkenness is the sailors' besetting sin;" and will even fully credit, that neither spirits nor their substitutes are at all necessary, for it was shown by Captain Ross, that they improved in efficiency after their grog was expended. Yet I think that some regard must be had to the prejudices and habits of the world in which we live. I will also entirely agree in the observations of the gallant officers, who state, that the great proportion (according to the Duke of Wellington, as regards the army, *all*) of the punishments in both army and navy, have been produced by habits of drunkenness in the men. I myself will add, that, with very few exceptions indeed, from the same cause, is to be traced every act of insubordination in the merchant service; and a very great proportion of the loss of ships and lives; but I cannot help, notwithstanding, drawing a line between getting drunk, and the use of a moderate supply of spirits. The good sense of mankind has certainly effected the practice of this distinction in the higher and middling ranks of society, and only improve the sailor if you can, and I can see no reason why the same should not be effected in him. Indeed I must say of him, that in this respect, of all beings, he is the most easily led imaginable: I have rarely found any difficulty on this point, although, I have invariably myself limited the supply, much within that allowance usually given in the merchant service. That seamen do break out on shore is, I humbly conceive, entirely to be attributed to the debased habits of their lives when there, and not to any inclination for drunkenness "having become inveterate from their habits on board ship;" habits, which (saving a few particular exceptions) are those while at sea, of regularity, superior to any other class of people in existence. Now, while society remains what it is, I cannot see how, with decency or consistency, it can be expected,

that the crew of a ship are to be recommended to drink water, and see their superiors sitting down to a sumptuous table every day; where, even supposing spirits to be excluded, there is an unlimited supply of wines of every description. I will go further, and say, that I think a gracious Providence has not caused the abundance of his bounty to be produced on this earth, without intending man to avail himself thereof; having at the same time given us reason, and held us responsible for the abuse of it. Good management, added to good example, may certainly prevent this abuse on board ship at sea. Let us so improve the moral condition of the seaman, as to induce a different life on shore; lead him to habits of saving his earnings, and if he could but be kept out of the hands of crimps, let us trust to such means for preventing evil habits when he is free from control. At the same time, the propriety cannot be doubted of discouraging, by every possible means, the use of spirits at sea, by a liberal exchange of other supplies, or even an allowance in money instead of the usual supply of grog. I must confess that, beyond this, I should not like to be in the ship where any previous arrangements had, even voluntarily, been entered into, for the total disuse of spirits by the crew; I think in such a ship the first glass of wine I took at dinner would choke me.

Sixthly.—“But if the sailor is to be kept from the public house, a place instead of it must be provided, where he can pleasantly and profitably spend his leisure time. This might be advantageously done, by the establishment of a Sailors’ Institute.” The reverend gentleman seems to overlook, that *some sailors are married*, and that a good many have the intention of becoming so. I say, let the married men spend their time on shore with their families; and those who have sweethearts “do the amiable” with them as they are expected. As for the others, I must confess, that if they could be kept out of the hands of the crimps—a set of people, who I wish the worthy author had devised the means of annihilating—I would rather see playing “at skittles,” or, if on the benches of some well regulated house, or “seaman’s house,” they were even discussing Dibdin’s songs, or the *Nautical* Mr. Editor, or any other useful and popular works or newspapers which might be made a necessary appendage to such nautical rendezvous. I say, if they were freed from those nuisances, those agents of the devil, called “crimps,” I would rather see a sailor so engaged, who had no female ties, even if accompanied with a pipe and pot of porter, than assembling at learned institutes, to hear lectures, or prosecute studies, which, in the very nature of things, he is unfit for. Here I think certainly, that the “author of *Britannia*” is *at sea*. How all these things he recommends are to better the man who is to get his bread “by the sweat of his brow,” and who is born to obey, without being allowed even to consider “the why or the wherefore” of the order given, I am at a loss to comprehend. It is, however, the fashion of the day, which, like other fashions, when it has had its day, will pass away. It is surprising that people will not see, that the whole education such men want, should be confined to what will make them good men, good husbands and fathers, faithful subjects, and consequently good members of society, “in that station in which it has pleased God to call them.” It seems to me to be just as necessary that these men should attend institutes, museums, and scientific lectures, as that I should go through a course of instruc-

tion in theology or medicine, to fit me for my station in this world. No, we certainly do not want "honest Jack" to discuss the propriety of the construction or manœuvring of the ship, but to lend a willing hand to do the necessary duties of his station.

Seventhly.—This head of the author's plans is entirely devoted to the propriety of granting honorary distinctions, medals, and rewards, to the deserving. Good, let this be done by those who manage the merchant seaman's ample funds.

Eighthly.—In the suggestions contained under this head—of the propriety of religious instruction being afforded to seamen, every one must concur; and it is gratifying to observe a divine himself admit, that "he is constrained to admire the wisdom, the variety, and (considering the limited resources devoted to the objects) the extent of the means already in operation for the evangelization of our seamen." Further on, he says, "We can only deplore that these means should be comparatively languishing for want of pecuniary support." Supposing this to be the case, it might be suggested to those who take such active steps in missionary proceedings, to read the note to "Britannia," marked E., and then it would, perhaps, be seen by those very well-disposed persons, that some of their funds would be well applied, to convert to good habits, those who have nearer claims upon them than the savages of the South Sea Islands. At all events, to do something towards this object, seeing, as they will do, in the said note E, that at present, the licentious conduct of seamen often tends to thwart the wide intended efforts to enlighten and convert the heathen.

Ninthly.—From all contained under this head, (except its evident good intentions,) I am constrained entirely to dissent—that "some sailors, whose piety, zeal, &c., render eligible, should receive such instruction as would be likely to make them religiously useful to their shipmates while at sea," is, I think, a proposition from an educated clergyman, most extraordinary. From such chaplains may we be delivered. What would these men consist of, but the most violent enthusiasts? and just to be put upon a par with a crack-brained field-preacher. I am truly sorry to find such a scheme proposed in "Britannia," and will say no more, than that it is all visionary and impracticable.

Tenthly.—"That each seaman should be in possession of a copy of the word of God" is very proper.

Eleventhly.—The suggestion of "infant education for those who are to succeed the present generation of seamen" is heartily to be commended.

I would not have it understood, that by ridiculing the attendance of sailors at scientific lectures, &c., I for one moment under-rate the value of a fitting education; but I mean an education just such as would tend to make them good men, good husbands, fathers, &c.; and such as, to the one in a thousand who may have talent to advance himself beyond the sphere in which he was born, might enable him, by his own exertions, to do so. I cannot help here observing, that this education would be most excellently prolonged, and made really available to the producing of an entire new description of men, in steadiness, sobriety, discipline, and every other good quality which seamen should possess, were the excellent notions of "a Skipper" acted upon, who proposed, in your Magazine of March, last year, "a method of manning the

navy," which would require three years' service in a man-of-war immediately after the expiration of the apprenticeship.

The twelfth and last article, consisting only of appeals to the public, in behalf of the measures advocated as likely to become useful, would only be weakened were I to attempt to remark upon them. But I cannot conclude without again endeavouring to draw some of the ample funds of the missionary societies to aid the reverend divine's good views, by soliciting those who interest themselves in converting the heathen, to consider the beautiful picture drawn, at the conclusion of "Britannia," of our ships becoming, as they undoubtedly would do if manned with reformed and Christian seamen, "the most able and efficient Missionaries;" instead of the riotous and licentious conduct of their crews rendering nugatory, by their example, all the efforts of the well-disposed in converting the heathen population of distant lands, and bringing into contempt the very name of a Christian.

I am, Mr. Editor,

Your most obedient servant,

A MASTER OF A BRITISH MERCHANT SHIP.

London, Sept., 1837.

IV.—ON THE PROTECTION OF SHIPS FROM LIGHTNING. *By William Snow Harris, F. R. S., &c. &c.*

(Continued from p. 588.)

No. IV.

Method of application of fixed and continuous conductors of Electricity, to the defence of Ships from Lightning.

49. The application of a lightning-rod to a building or ship must be always considered as a means of rendering more efficient the conducting power of the general mass, so as to admit of such intense discharges of atmospheric electricity, to become readily transmitted and diffused, (25,) as could not otherwise pass without intermediate explosion and damage, for it must never be forgotten, as already observed, (15,) that the materials of which buildings and ships are constructed, are equally with metals open to the action of lightning, and are alone capable of transmitting considerable quantities of natural electricity. (37) (v.) It may hence be fairly inferred, that, by completing a perfectly continuous and efficient line of conduction, from their most elevated points to the base on which they happen to be placed, the damage which so frequently occurs might become either greatly palliated or altogether avoided.

50. Although the efficient application of lightning-rods to buildings on shore is always judicious, and the resulting advantages fully apparent, yet on ship-board, where the effects of lightning are the most to be dreaded, the introduction of this method of defence has been *slow and imperfect*. On shore, stationary elevations may be defended by means of rigid metallic rods, which may be either perpendicular; or carried over projecting portions of the edifice, without impairing their efficiency. On ship-board, however, the case is widely different.

The masts, though erect, consist of many distinct portions; these it is often necessary to *move* one on the other, and sometimes to *remove* altogether: they are also liable to damage from wind, and a variety of accidents. The quantity of cordage, too, and canvass, so constantly about the masts, renders the application of lightning-conductors in ships somewhat difficult.

51. With a view of meeting those complicated conditions, (50,) the lightning-conductors intended to be employed on ship-board are usually constructed of long metallic links, or chains, formed of wire, about the size of a goose-quill, so as to constitute a flexible line of metal; they are sometimes made of iron; but those directed to be employed in her Majesty's navy are of copper; they are attached to a short hemp cord, are packed in a box, and are supposed ready for use when occasion requires: they are then hoisted by the signal-halliards, or some other convenient line, to the masthead.

52. Such conducting chains, however, beside being uncertain in their application, are, in a variety of instances, extremely ill-adapted to the circumstances under which they are placed; e. g., they are open to every sort of mechanical violence incidental to the position of a ship's rigging; they are very liable to be deranged in their situation, more especially in gales of wind at night, when the ship is under sail; and when, perhaps, it is requisite to remove the higher portions of the masts altogether, or shorten others. The great want of continuity also, in every kind of chain, is to a certain extent unfavourable to the rapid transmission of electrical discharges, whilst the electric matter, in becoming sensible at the points of junction, frequently disunites the chain at each link by its expansive force. (22) (u) (45) (i.) The protection, likewise, which this may possibly afford, is not unfrequently altogether disregarded; for, as is justly observed by the late Mr. Singer, in his work on electricity, partly from inattention and partly from prejudice, they frequently remain in their cases in the ship's hold, during long and hazardous voyages, quite unheeded: unless, indeed, some unexpected damage occurs, calculated to bring them into notice. The truth of this is very apparent in the case of the New York packet-ship, already cited. (22) (t) (u.) In this case the conducting chain, at the time of the first explosion, was carefully stowed away in its box below, although set up in time to parry the second explosion. (u.)*

53. The above considerations, together with the damage which so frequently occurs to ships in thunder-storms, are sufficient inducements for attempting the application of such permanent conductors on ship-board, as may at all times be capable of affording the required security, which, being always in place, and always ready to meet the most unexpected danger, would not be dependent on the exertions of individuals for their proper employment.

54. In order to effect this, it becomes necessary, as already observed, (26,) 1st, to perfect the conducting power of the masts, 2nd, that of the hull, and unite into one great conducting mass the ship and the sea. The conditions to be fulfilled in completing the conducting

* For a minute account of the circumstances of this case, see the *Liverpool Chronicle*, May, 1827.

power of the masts are these.—The conductor *should be continuous and direct from the vane spindle at the masthead; should be permanently fixed throughout all its extent; must admit of the motion of one portion of the mast on another, and not interfere in any way with the standing or running rigging:* and, in case of the removal of any part of the mast, either by accident or design, *the continuity of the remaining part must still remain perfect, to determine the course of the lightning, and transmit it securely to the sea.* It may not, therefore, be altogether useless to describe such a conductor as may fulfil these conditions, and thereby protect the ship.

55. The conductor, which we are about to describe, is completely identified with the mast itself; that is to say, with its various parts, so as to form a portion of them. Adequate metallic connexions are provided in the caps through which they slide, and similar connexions through the keel and other parts, with the copper expanded on the bottom. We have then, under all circumstances, a continuous metallic line, *A B C D*, fig. 1, which will transmit the electric matter directly to the sea: for it constitutes at all times, and under every position of the masts, the line of least resistance to the electrical diffusion. (23.)

56. An experimental illustration of this reasoning was given in a former part of this work: * the gold leaf there was originally perfect throughout; a powerful discharge of electricity was passed over the gold, from the top to the bottom, in order to show by its oxidation the course of the electric matter. We supposed the lines to represent the masts partially struck, and to occupy the position seen in the figure. It may be observed, that the gold is oxidated only in the line of least resistance; the portions supposed below the caps remain perfect—a striking confirmation of the reasoning before advanced. (21) (23.) Whatever position, therefore, we suppose the sliding masts to assume, whether partially struck or otherwise, there is still a perfect line of conduction remaining; since that portion of the mast and conductor, below the cap, is no longer in the line of action, it has consequently no longer any influence on the passage of the electric matter up to the point of fusion of the conductor.

57. The conductor itself is of a superficial kind, and consists of two laminæ of sheet copper, *a à, b b'*, fig. 2, laid one on the other in lengths of about 4 feet, the laminæ are so placed, as to admit of the closed joints of the one falling on the continuous portions of the other, as represented in the figure. The width of the plates varies from an inch and half to six inches, according to the size of the mast to which they are intended to be applied, and they are together 3-16ths of an inch in thickness, the upper layer being one-eighth of an inch, and the lower one-sixteenth. The laminæ are riveted together at the points of junction, *n n' n'' n''' n''''*, of the upper plates, so as to form an elastic and connected line.

58. In constructing this conductor, and applying it to a given mast, the plates are first hollowed to a convenient curve, by hammering them longitudinally upon curved indentations in a large block of wood; small holes being punched at the edges of the upper plates, four inches or more apart. When thus prepared, they are laid in place upon a long straight bench, and riveted at the points *n n' n'' n'''*, &c..

* Page 479, Vol. IV.

fig. 2, as already stated. The whole is now laid with the curved part inside in a neat dovetail groove, ploughed in the aft side of the mast, about $\frac{1}{4}$ of an inch in depth, and is beat down in place with mallets, so as to present a fair surface, somewhat within that of the mast. When secured in its position, holes are punched in places, through the thin plate of copper beneath, and the whole finally secured by short copper nails.* A line of metal applied in this way to a mast is of great advantage to it, as will be eventually shown.

59. The conductor is turned over the respective mastheads above, and is secured on the opposite side, and is made to extend on the sliding masts, from the masthead, to a little below the point of junction with the cap, when the mast is quite elongated, as in *a n, b m*, fig. 1. The caps are prepared in a somewhat similar way; by carrying a double band of copper over the cap between the square and round hole, as at *a b*, fig. 3. This band is connected with a copper lining in the aft side of the round hole, and after being completely carried through the square hole, is secured on the under side. When the cap, therefore, is in place, a direct connexion is established with the conductor on the next mast, as at *b and c*, fig. 1. The step of the lower mast is armed with a double copper band, in a similar way, which passes from beneath quite over and in the step itself, so as to connect; when in place, the conductor turned round the heel of the mast with the wide copper band on the keelson, as at *d*, fig. 1 and 5.

60. In fitting the lower masts of large ships, which are embraced by iron hoops, it is merely requisite to continue the under laminæ between each hoop, which should be the thicker of the two, and pass the upper one over all. The laminæ, as in the other cases, are turned completely round the heel of the mast, and over the masthead.†

61. The conducting communications are made perfect in the hull, as follows: 1st, doubled copper bands, 6 inches in width, are secured upon the keelson, so as to embrace 5 or 6 keelson bolts on each side of the mast step; these bands pass directly under the step, as at *d d*, fig. 5; in addition to which, it may be connected with one or two additional bolts, driven through the keelson upon transverse bolts passing horizontally through the main-keel. If, however, the keelson-bolts have a direct communication with the copper inserted between the main and false keels, the latter are not requisite. 2d, similar bands are led transversely under the beams, where the masts pass into the hull, and are connected one on each side with the iron knees and other metallic fastenings in the side, as in *n m*, fig. 4. Other bands are led out from the foremast to the stem, and from the mizenmast to the stern of the ship, and connected with the metallic bolts and other connexions in these parts, as *o p, o p*, fig. 5. The conductor on the masts is connected directly with these bands by a flat sliding bolt, or otherwise by a sliding plate of metal, *s*, fig. 6; according to a plan proposed by Mr. Rice, of her Majesty's dock-yard at Chatham; which admits of any required alteration in the rake of the mast, and

* The groove, previously to applying the metal, is freely painted over with white lead.

† When the mizen-step is not on the keelson, metallic connexions are continued to the keelson-bolts and other points in any convenient direction.

has, beside, other advantages: by means of these metallic bands, therefore, the masts and hull may be considered as tied into one grand conducting mass—a condition of the utmost consequence, as the operation of the conductors is really little more than a rapid diffusion and equalization of the electrical action going on between the surface of the sea and the clouds, (19,) and by which the dense and concentrated explosion is either avoided altogether, or otherwise greatly moderated.

62. We have hitherto omitted all consideration of the bowsprit, which, in large ships, has a considerable elevation; it seems therefore desirable to complete also its conducting power. The laminæ of metal are to be led along the under part of the jib-boom and bowsprit, in the way already described, (58,) and finally connected at the stem-head, with the copper placed over the timber ends; by a conducting line, the electric fluid will be readily transmitted to the sea. The liability of the bowsprit of large ships to be struck by lightning, is exemplified in the following extract of a letter from Admiral Colpoys, who commanded H.M.S. Sultan, to Capt. Fanshawe, of the royal navy.—

(o) “ We were struck by lightning in the Sultan, whilst lying in Mahon harbour: our sails were loose, and the weather, becoming squally, it became requisite to furl them; the lightning *struck the flying jib-boom*, shattered it and the jib-boom to pieces, passed over the fore-castle, and fell at some distance on the quarter of the ship *into the water*; all the men who were out stowing the sails, (nine in number,) were either killed or severely injured.”

63. The unequal size of the sliding masts may sometimes place the metallic conductors about the caps at a short distance from each other: this, however, is of no great moment, the distance at any time being necessarily very small, compared with the great extent and continuity of the general mass in all other respects. It may, however, be easily avoided by means of a metallic drop of the form *a c*, fig. 7, which is fixed on the cap by means of a metallic plate connected directly with the conducting bands. This drop is so contrived as to bear freely, by means of a stout hinge, against the conductor on the aft side of the succeeding mast, at an angle of about 50° , but which readily varies with any change in its position. This drop is about 6 inches wide, $\frac{1}{4}$ thick, and of a convenient length; it is rounded at that portion which bears against the conductor, as shown in the figure.

64. The known effects of pointed bodies in moderating the violence of electrical explosions, renders it desirable to provide at all times a good pointed termination to the conductor; for which purpose, the vane spindle, fig. 8, is applied to the royal-mast by means of a screw cut in the spindle at *s*, and a nut inserted in the head of the mast in which the conductor terminates; a similar nut is inserted into the other mastheads, so that, in case of the removal of either of the upper masts, the spindle may be removed to the lower ones.

65. When the masts are in place, the system of defence above mentioned will be complete: the conductor, as thus constructed, will pass from the vane-spindle, fig. 1, along the aft sides of the royal-mast and topgallant mast, being connected in its course with the copper about the sheave-holes. The copper lining in the aft side of the hole, in the cap through which the topgallant mast passes, continues the me-

HARRIS'S CONDUCTORS FOR SHIPS.

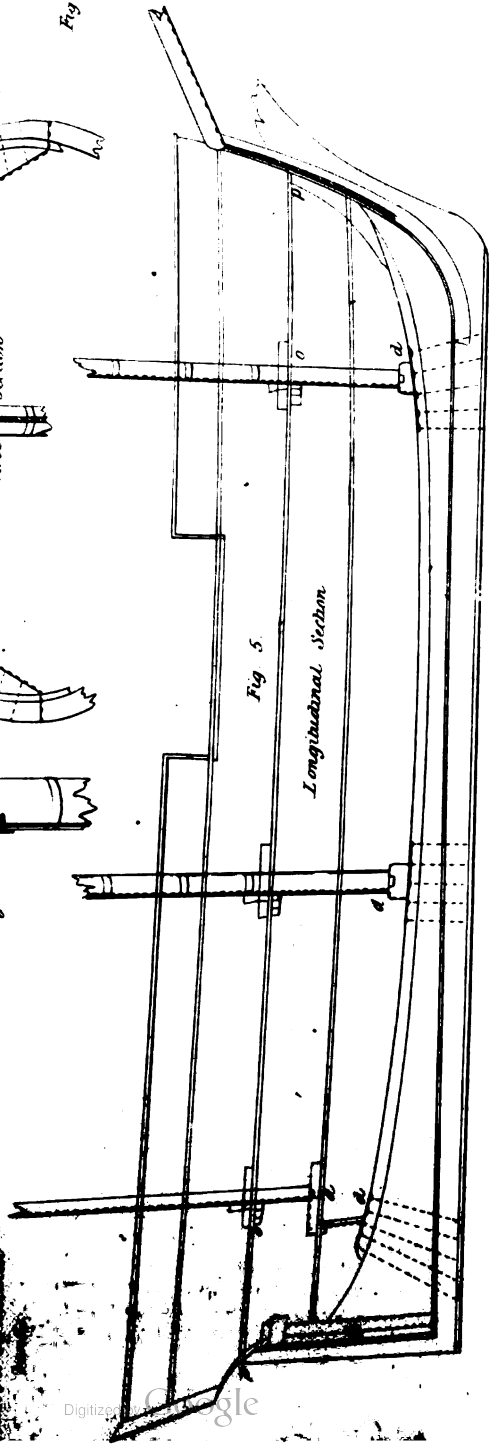
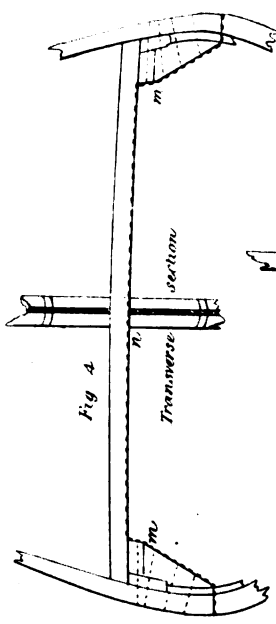
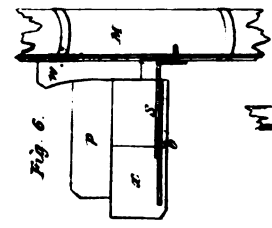
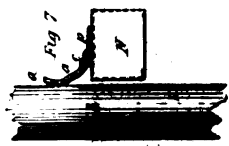
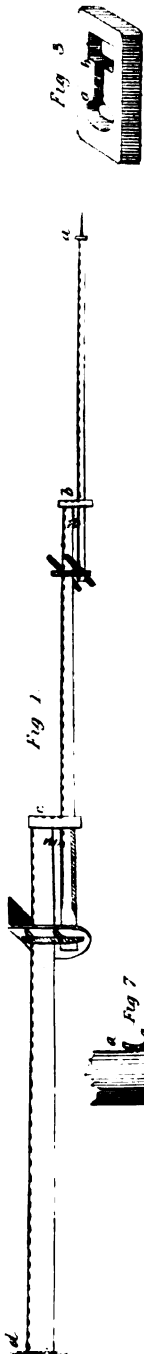


Fig 3

Fig 2

tallic connexion over the cap to the aft side of the topmast, and so on to the bands under the beams, fig. 4, and to the keelson, fig. 5, which have general connexion with the different masses of metal in the ship and with the sea.

66. The conducting power of metallic bodies appears to vary considerably, and the differences become more sensible in proportion to the quantity of electricity transmitted: when the quantity is extremely great, copper has a decided superiority over every other metal except silver; it is therefore, on this account alone, well adapted for the purpose of a lightning-conductor: compared with iron, a metal frequently employed in the construction of lightning-conductors, it was found in some particular cases to resist the heating effect of a given charge, in the ratio of 5:1.* Dr. Priestley has observed, that the force required to fuse a copper wire of a given diameter would most probably dissipate an iron wire of twice that diameter.† Mr. Singer also observes, that when a conductor is wholly of copper, it may be thinner than if made of iron.‡ The following table shows the dimensions of the conductor just described, on one mast of a frigate of 50 guns, as compared with the small copper links usually recommended; together with the dimensions of a copper or iron rod, equivalent to the same conducting power, taking the conducting power of iron to copper as 4 : 1; to which is added, the quantity of metal contained in a copper rod of half an inch in diameter, of the same length as the new conductors, and which is considered by many as adequate to conduct without fusion any discharge of lightning hitherto experienced.

TABLE I.

NEW CONDUCTORS.	Present Conductors, $\frac{3}{4}$ diameter.		Equivalent in Iron Rod.		§ Equivalent Copper Rod	Copper Rod of $\frac{1}{2}$ inch diameter.
	Cubic Ins.	Cub. Ins.	Diameter	Diameter.	Cub. Inches	
Estimated in Cub. Ins.						
ON ROYAL POLE. 18 feet 3 ins. long } Mean width, 2 ins. }	82	10.5	328	1.38	.69	42
ON TOPGALL. MAST. 17 feet long . . . } Width, 2.5 inches }	95	10	380	1.54	.77	40
ON TOP MAST. 50 feet long . . . } Width, 4 inches . }	450	19.2	1800	1.95	.97	117
ON LOWER MAST. 93 feet long . . . } Width, 6 inches . }	1255	54.7	5020	2.20	1.20	219
Total	1882	94.4	7528 = 2.116		= 1.058	418

* Transactions of the Royal Society, for 1827, p. 22. † Priestley's History of Electricity. ‡ Singer's Electricity.

§ The diameter of the total equivalent in iron and copper rod, are deduced from the total quantity of metal in the new conductors, which is therefore equivalent to rods of iron or copper of 2.116 or 1.058 inches in diameter respectively, supposed to extend the whole length of the mast.

References to the Plate.

- Fig. 1—Represents the conducting-line *a b c d* extending from the vane spindle to the keelson.
- Fig. 2—Represents the conductor previously to being inserted in the masts, and riveted at the points *n n' n''*, &c.; *a a'* the upper lamina, *b b'* the under.
- Fig. 3—The cap: *a* the connexion between the round and square hole.
- Fig. 4—A transverse section showing the lateral communications, *n m, n m*, with the ship's side, and metallic knees.
- Fig. 5—A longitudinal section, showing the connexion with the keelson bolts *d d d*, as also with the step of the mizen-mast *d'*, and the longitudinal connexions *o p, o p*, with the stern and stem. In this section, also, is seen the conductor on the bowsprit, and the communication along the stem to the water-line.
- Fig. 6.—The method of communication from the conductors on the masts, to the auxiliary branches under the beams: *m*, the mast; *w*, mast-wedges; *p*, mast-partner; *x*, beam; *s*, sliding-plate; resting on copper-plates, secured in the batten *b*, and connected with the branch conductors in the beam *x*.
- Fig. 7—Shows the position of the metallic drop on the mastheads; *a c*, the drop; *t*, the top-mast; *n*, a portion of the cap between the holes; *p*, a metallic plate.
- Fig. 8—The vane spindle: *s*, the screw by which it is secured in the head of the masts.

67. The advantages of a conductor constructed according to the foregoing method are these: it is always in place, and ready to meet the most unexpected danger; the standing and running rigging is never interfered with by it; whilst the perfect continuity of a conductor, under all the varying positions of a ship's mast, is effectually preserved. It is permanently fixed throughout its whole extent, is continuous from the sea to the mast-head, and is connected with an adequate combination of conductors in the hull, of sufficient capacity to dissipate the most powerful discharge of lightning yet experienced: it is capable of resisting great external force; whilst, by presenting a fair surface, sunk rather beneath the surface of the mast, the parrels of the yards traverse it with ease; and, being secured in short lengths, so as to form a series of close joints, it readily accommodates itself to any curve the mast can stand under. It gives additional strength to the mast, as will be hereafter shown, and has the capital advantage of being applied immediately to the object to be defended.

68. The objections which have been advanced to the system of defence here proposed, will be considered in the concluding paper.

 NAVAL PATENTS AND PATENTEES.

London, August, 1837.

SIR,—Seeing in your number for this month, an account of the perilous situation of H.M. ship “Pembroke;” during a gale at Gibraltar, in January last; “I am induced to ask,” your correspondent observes, (who has questioned the correctness of some of the statements made in my letter under the above head,) “whether or not, amongst the anchors broken upon that occasion, was one of Mr. Perring’s properly made new anchors.”

The saving of that fine ship, seems to have been owing to nothing short of a miraculous interference of Providence, and was clearly in no way attributable to that old emblem of a sailor’s hope, “the anchor.”

I repeat my firm belief that nothing short of some such dreadful catastrophe as had so nearly befallen the *Pembroke*, will ever awaken those who have the direction of these matters, to the very defective state of the ground tackle of our men of war. I am Sir, &c.

“MERCATOR.”

LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL BERENICE, from Falmouth to Bombay.—Continued.

VOYAGE, CAPE OF GOOD HOPE TO MAURITIUS.

Hours.	Courses.	Knots per Hour.	Fathoms per Hr.	Winds.	Mean Number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
2								<p><i>Thursday, 11th May.—A.M.</i> Daylight, light breeze and fine weather. At 6, sailed the Childe Harold, for Bombay. Employed, stowing away luggage and preparing for sea. Joined the ship George Phillips, A.B., and Andrew Nixon, O.S. 11h. 30m. hove short. Draught forward, 13 ft. 10 in. Aft, 15 ft. with boilers full. P.M. 2h. 40m. weighed and stood along shore. At 5, light-houses, E. by N. $\frac{1}{2}$ N. $\frac{1}{2}$ miles. Water on board 4,060 gallons. Calm, and a swell from west. Midnight, lt. winds, and hv. dew.</p>
4	At Anchor off Cape Town.			Calm.				
6								
8								
10								
12								
2								
4	W.S.W.			S.W.	12	28		
6	S.W.	7			12	28		
8	S.W. $\frac{1}{2}$ S.	7	4		12	28		
10	S.W. $\frac{1}{2}$ S.	7	4		12	28		
12	S. by E.	7	5		12	28		
2	S. by E.	7	4		13	28	<p><i>Friday, 12th May.—A.M.</i> Light breeze and fine, with a confused swell. At 8, set fore and aft sails, and fore topsail. Therm. 65°. Bar. 29.95. Smart breeze and heavy swell. Noon, cloudy. Gunner's Quoin north. Lagulhas point, N.E. $\frac{1}{2}$ E. Coal rem. 300 t 1 c. Tallow, 3,196 lbs. Oil 236 gns. P.M. Fresh breeze. Rove studding sail gear. Therm. 62°. Bar. 29.90. At 2, set lower and topmast studding sails on both sides. At 8, fine weather, and st. br. At 11, set jib. In all studding sails.</p>	
4	S.S.E.	7	4	S.W.	13	28 $\frac{1}{2}$		
6		7	4		13	29		
8	S.E.	7	4		13	29		
10	S.S.E.	8	4		14	29		
12		8	4		14	29		
2		8	2		14	29		
4		8	5		14	29		
6		8	4		14	29		
8		8	7		14	29 $\frac{1}{2}$		
10		9			14	30		
12		9			14	30		
2	E. S. E.	8	6	N.N.E.		30	<p><i>Saturday, 13th May.—</i>At 1, set fore spencer and mainsail. At 2, in foresail, lightning to the southward. Daylight, clear wr. and strong br. High land in sight on weather beam. At 8, extremes of land from N.N.W. to E. by N. At 9, set fore square sail and larboard lower and topmast studding sails. At 10, squared yards, and set starboard studding sails. Noon, rain. Lat. obs. 34° 35' S. Long. 23° 31' E. Coal rem. 282 t. Tallow 3,152 lbs. Oil 232 gallons. P.M. fr. br. and eldy. wr. At 2h. 15m. in larboard lower studding sl. Therm. 69° Bar. 30.10. Midnight, fr. br. and fine w., following sea.</p>	
4		8	6			30		
6		9				30		
8		8	6	NEbN		27		
10		8	7			24		
12		9		N.W.		24		
2		8	1	W.		24		
4		8	3			24		
6		8	3	W.S.W		24		
8	s.e.b.e. $\frac{1}{2}$ E.	8	4			24		
10		8	1			24		
12		8				24		
2	s.e.b.e. $\frac{1}{2}$ E.	7	6	W.S.W		12	24	
4	S.E. by E.	7	4			12	24	
6		7				12	24	
8	E. by S.	7	2	S.		12	24	
10		7				12	27	
12	East.	7	6	E. by N		13	30	
2		7				13 $\frac{1}{2}$	30	
4		7	4			14	30	
6		8	4			14	32	
8		8	4			14	32	
10		8	2	E.S.E.		14	32	
12		8				14	32	

H	Courses.	K	F.	Winds.	No. of Rev.	Ex. Cls. in ct.	Bar.	REMARKS.
2	East.	8	4	E. S. E.	14	30		<p><i>Monday, 15th May.</i>—A. M. Increasing breeze with confused sea. Water on board at starting, 4,630 gallons; expended, 620; rem. 4,010 gallons. At 8, commenced taking coal from forehold, about 2 days remaining in bunkers. Smart gales and heavy sea. In jib boom, and struck topgallant mast. At 10, set fore and aft sail. Noon, smart stiff breeze. Lat. 33° 29'. Long. 29° 22' P. Louis, N. 62°, E. 1,700 miles. Coal rem. 248 t., 19½ cwt. Tallow 3,064 lbs. Oil 224 gallons. P. M. on Thursday, a current against us of 40 miles, steady fresh breeze and confused swell. Sent up fore-yard. Set fore topsail. Sunset, decreasing breeze, up topgallant mast, and rigged out jib boom. Lightning to southward, S. E. and N. W. At 10, set foresail. At 11, in fore spencer and mainsail.</p>
4		8			14	30		
6		7	6		14	30		
8		6	4		12½	30		
10		6	2		12½	30		
12		7		N. E.	12½	30		
2		7	2		12	30		
4		7	5	N.	12½	30		
6		7	6		13	30		
8		8		N. W.	13	30		
10		8	2		14	30		
12	E. ½ S.	8	2		14½	30		
2	E. by S.	8	3	S. by W.	14	30		<p><i>Tuesday, 16th May.</i>—Set fore spencer and mainsail. At 4, clear weather. At 6, sent up topgallant yard and set the sail. 7, set fore topsail and lower stud. sails. 7h. 50m. set royal. At 8, clear weather and steady breeze. At 11h. 30m. in royal. Noon, light breeze and fine. Lat. 32° 30' S. Long. 32° 53'. Coal rem. 230 ton, 13½ cwt. Tallow 3,020 lbs. Oil 220 gallons. P. M. light var. winds and fine. At 1, set topgallant sail, royal, and gaff topsail. Therm. 73° Bar. 29.95. At 3, set mizen and flying jib. At 5h. 30m. in square sails. At 8, in all sail, closed the fore-hold, recommenced on the bunkers. Midnight, light breeze and fine.</p>
4		8	4		14	30		
6		8	2		14	30		
8		8	3		15	30		
10		8	4	Calm.	15	30		
12		8	3		15	30		
2		8	4		14½	30		
4		8	6		15	30		
6		8	6		15	30		
8		8	6		15	30		
10		8	4		15	30		
12		8	3		15	30		
2	E. by S.	8	6	E. N. E.	15	30		<p><i>Wednesday, 17th May.</i>—A. M. At 1, set fore and aft sails. At 4, cloudy weather. At 7, set in pumps, run water into after-hold to clean it. Therm. 74°. Bar. 29.90. People employed under boatswain. At 11h. 30m. set fore topsail. Noon, moderate and fine. Lat. 31° 30'. Long. 36° 20'. Coal rem. 212 ton, 9½ cwt. Tallow 2,976 lbs. Oil 216 gallons. P. M. smart breeze, and fine, set gaff topsail. Therm. 75°. Bar. 29.90. Midnight, steady breeze and fine.</p>
4		9			15	30		
6		9			15	30		
8		9	2	N. N. E.	15	30		
10		9			15½	30		
12		9		N. by E.	15	30		
2		9	4		15	30		
4		9	4		15	30		
6		9	4		15	30		
8		9	4		15	30		
10		9	2		15	30		
12		9	4		15	30		
2	E. by S.	9	4	North.	16½	30		<p><i>Thursday, 18th May.</i>—A. M. Clear weather. 3h. 30m., heavy clouds, vivid lightning, and squalls of rain. Flying jib-sheet carried away. Stowed flying jib. Sunrise, fresh br. and cloudy. At 9, set on the expansion-valve. Therm. 76°. Bar. 29.93. Noon, squally. Lat. 30° 42'. Long. 40° 13'. Coal remaining 194 t. 4½ cwt. Tallow 2,932 lbs. Oil 212 gallons. P. M. Strong breeze and squally, with heavy rain and thunder in the northward. 2h. 30m. mod. and fine. Therm. 72°. Bar. 29.90. At 6, set royal. Lightning to eastward. At 8, clear weather. Steady mod. breeze. Midnight, steady breezes and clear.</p>
4		9	4		16½	30		
6		9	4		16½	30		
8		9	4	N. N. E.	16½	30		
10		9	2		16	30		
12		8	6		16	30		
2		9	2	N. W.	17	30		
4		8	3		17	30		
6		8	3		16	30		
8		8	5		15½	30		
10		8	5		15½	30		
12		9	2		17½	30		

H.	Courses.	K.	F.	Winds.	No. of Rev.	Ex. Cla. in ct.	Bar.	REMARKS.
2	E. by S.	9	4	N.NW	17	30		<p><i>Friday, 19th May.</i>—Fresh br. and fine, with passing clouds. 4h. 30m. set mainsail. In Royal. Commenced getting coals from after-hold to bunkers. At 8, carried away log-line at five knots. Got 200 baskets of coal into the bunkers. At 9, commenced getting coals from after-hold to bunkers. At noon, put 375 baskets into bunkers. Departed this life Frederick Motley, O. S. Stdy and fine, swell from W.S.W. Lat. 29° 52'. Long. 44° 43'. Coal rem. 175 t. 19½ cwt. Tallow 3,888 lbs. Oil 208 glns.</p>
4		9	5		17	30		
6		9	4		17	30		
8		9	2	WSW.	17	30		
10		9			16½	30		
12		8	6		16½	30		
2		8	7	West.	16	30		
4		9			16	30		
6		9		Calm.	16	30		
8		9			17	30		
10		8	6	W.	16½	30		
12		8	6		16	30		

P.M. Fresh br. and fine. Therm. 75°. Bar. 30.5. Sunset, calm and fine. At 7, in all sail. Put 200 baskets of coal from after-hold into the bunkers. Midnight, light breeze and fine.

2	E. by S.	8	4	East.	17	37		<p><i>Saturday, 20th May.</i>—A.M. Light winds and fine weather. At 5, passed a sail on larboard beam. Exchanged signals with bark Ludlow. Therm. 72°. Bar. 30. At 7, set fore and aft sails. Got 70 baskets of coal from after-hold to the bunkers. 10h. 20m. committed the body of the deceased to the deep with the usual ceremony. Noon, moderate and fine. Lat. 29° 10'. Long. 47° 49'. Coal rem. 157 t. 14 cwt. Tallow, 3,844 lbs. Oil 204 gallons. P.M. Moderate and fine. Passed a ship under Dutch colours. Therm. 76°. Bar. 30.10. At 3, a ship to westward: no colours. Down fore-yard. At 5, set patent log. Midnight, light br. and fine weather. Increased consumption of coal to be attributed to mixing the English and Welsh; the strength of the latter destroying the former, and producing no increase of power.</p>
4		9			17	37		
6		9			17½	37		
8		9	2		18	37		
10		9		NN.E.	16	37		
12		9			16	37		
2	E. b N½ N.	8	2	E.	14½	37		
4	E.N.E.	8	4		14½	37		
6		8	4		14½	37		
8		9			14½	37		
10		9		E. b N.	14½	37		
12		8	6		14½	37		

2	E.N.E.	8	4	East.	15½	37		<p><i>Sunday, 21st May.</i>—A.M. Stiff br. and cloudy, lightning in the N.W. Sunrise, fresh br. and cloudy. At 8, patent log showed 107½ miles. At 9, set fore and aft sails. Sent down fore topgallant yard. Therm. 75°. Bar. 30.12. Noon, stiff br., heavy sea, and cloudy wr. Lat. 27° 24'. Long. 50° 23. Coal rem. 136 t. 5½ cwt. Tallow 3,800 lbs. Oil 200 glns. P.M. Steady strong breeze and cloudy weather. Therm. 73°. Bar. 29.90. Sunset, moderate, lightning in west. 8h. 30m. commenced taking</p>
4		8	4		15½	37		
6		8	4	N.E.	15½	37		
8		8	4		15½	37		
10	E. by N.	8	4		15½	37		
12	East.	8	4	N. b E.	15½	37		
2		8	4		15	37		
4	E.N.E	8	4	North.	15	37		
6		9		NNW.	15½	37		
8		9	6		16	37		
10		9	6		16	37		
12		10			17	37		

coals from after-hold by railway. 9h. 30m. set in both pumps. Pumping water into after-hold, under charge of engineer and carpenter.

2	E.N.E.	9	6	North.	17	37		<p><i>Monday, 22nd May.</i>—A.M. At 6, set mizen-gaff topsail and flying jib. Therm. 75°. Bar. 29.90. Noon, steady strong breeze and cloudy weather. Lat. 25° 28'. Long. 53° 34'. Coal rem. 114 t. 16 cwt. Tallow 3,756 lbs. Oil 196 gallons. P.M. Moderate and cloudy. Therm. 77°. Bar. 29.95. Squally, with rain. Sunset, mod. and cloudy. Midnight, lightning in the S.W.</p>
4		9	6		17	37		
6		10			17	37		
8		10			17	37		
10		9	6		17	37		
12		10			17½	37		
2	N.E. b E.	9	6	W.	17	37		
4	N.E.	9	4		17	38		
6		10			17½	38		
8	N.E.½ N.	9	6	N.W.	17½	38		
10		9	6		17	38		
12		9	6		17	38		

H.	Courses.	K.	F.	Winds.	No. of Rev.	Ex. in ct.	Bar.	REMARKS.	
2	N.E. b N.	10		N.NW	17	38		<p><i>Tuesday, 23rd May.</i>—A.M. Squally, mod. with heavy rain. Therm. 76°. Bar. 29.80. Crew emp. scraping gaffs. Set fore and aft sails. Squally, with rain. Noon, light br. and cloudy. Lat. 22° 16'. Long. 54° 40'. Mauritius N. 51° E. 201'. Coal rem. 91 t. 16½ cwt. Tallow 3,712 lbs. Oil 192 glns. P.M. Squalls of wind and rain. Therm. 75°. Bar. 30.40. Fresh breeze and cloudy wr. At 8, on patent log 72 miles. Midnight, moderate and fine.</p>	
4		10			17	38			
6		9	4		17	38			
8		9	4	N.W.	17	38			
10		9		Sthly.	16½	38			
12		9			16	38			
2	N.E. b E.	9	4		17	38			
4	N.N.E.	9	4		17	38			
6		9	4		17	38			
8		9	4		17	38			
10		9	4		17	38			
12		9	4		17	38			
2	E.N.E.	9	4	South.		38		<p><i>Wednesday, 24th May.</i>—A.M. Fine weather. At sunrise, fresh br. and fine. Morne Brabant Mauritius N.N.W. Altered course for ditto. 10h. set topsail and squaresail. Therm. 75°. Bar. 30. Noon, Morne Brabant S ½ W. Off shore about four miles. Coal remaining 68 t. 16 cwt. Tallow 3,658 lbs. Oil 188 gallons. P.M. Moderate and fine. At 1, in all sail. Therm. 76°. Bar. 30. At 2, anchored head and stern in Port Louis. Moored ship with two bows. Draft of water forward 11 ft. 3 in., aft 12 ft. 4 in. Flag staff on hill S.W. by S. Midnight, light breeze and fine. Quantity of soot in the flues 1 t. 14 cwt. Ditto calcined matter 10 cwt.</p>	
4		9	4			38			
6		9	4			38			
8	N.N.W. ½ W.	9			Not given.	38			
9	N. by W.	9				19			
10	North.	9	4			19			
11	N.N.E.	9	4			19			
12	Moored	9	4			19			
2	in the			South.			38		
4	harbour								
6	of Port								
8	Louis.								

The foregoing passage gives the following results: Distance run by log 2,692 miles. Time, thirteen days. Average rate per hour 8.6; per day 207 miles. Consumption of coals 253 t. 2 cwt. Average per hour 16 t. 2 cwt. Average per hour per horse power 7 lbs. The barometer column not being filled in the *ms.* has been entirely omitted here.

LOG OF THE HON. EAST INDIA COMPANY'S STEAM-VESSEL BERENICE, towards Bombay.

FROM MAURITIUS TO BOMBAY.

[The column of the Engine Barometer not being filled in the original is here omitted.]

Hours.	Courses.	Knots per hour.	Fathoms per Hr.	Winds.	Mean number of Revolutions.	Coals in Cwts.	Engine Barometer.	REMARKS.
2				S.E.				<p><i>Tuesday, 30th May.</i>—A.M. Daylight, light airs and fine weather. 6h. 30m. pilot came on board to unmoor and wind the vessel for starting. Noon, light breeze and fine. Draft forward 14 ft. 6 in., aft 15 ft. 3 in. Fresh water on board 10,000 gallons. At 1, Lighted the fires. Unmooring ship. P.M. Crew employed under direction of pilot. At 3, pilot left. Set fore and aft sails. At 6, gunner's quoin S. by E. Promoted G. Phillips, A.B., to be quarter-master. Midnight, fine weather.</p>
4								
6								
8								
10								
12								
2				East.				
4	N.N.E.	7			12	25		
6		7			12	25		
8	NNE ½ N.	7	4		12	25		
10		7	4		12	25		
12		7	4		12	25		

H	Courses.	K.	F.	Winds.	No. of Rev.	Ex. Cls. in ct.	Bar.	REMARKS.
2	NNE½E.	8		E.S.E.	12	25		<p><i>Wednesday, 31st May.</i>—A.M. Light breeze and cloudy. Daylight, heavy swell from west. Carried away jib-boom about 6 feet from keel. Got the sail in. Carpenters employed fishing the boom. At 9, bent and set topsail. Noon, fine, heavy swell from west. Lat. 17° 50' S. Long. 58° 4' E. Bombay N. 22° E. 237 miles. Coals remaining 333 t. 10 cwt. Oil 176 gallons. P.M. Strong breeze and cloudy weather. Got jib-boom out, and crossed topgallant-yard. Set the sail. At 5, squally in mizen. Strong breeze and a long heavy swell from S.E. striking the ship on the beam. In gaff</p>
4		8	4		12	25		
6		7	4		12	25		
8		7	4		12	25		
10		7		East.	11	25		
12		7	4		11	25		
2	N.N.E.	7	4	S.E.	11	26		
4		7	6		11	26		
6		8	2		11	26		
8		8		S.E.b.S.	11	26		
10		7	6		11	26		
12	N b E½E.	7	6		11	26		

top-sail and top-gallant sail. 10h. 30m. hard squall, with heavy rain. Midnight, heavy cross sea. In square sail.

2	N.b.E.½E.	7	6	East.	11	26		<p><i>Thursday, 1st June.</i>—A.M. Strong breeze and squally, with heavy rain. At 1, took in topsail. At 6, set ditto. At 8, set top-gallant sail and square sail. At 9, set gaff topsail. Crew trimming sails. Heavy rain, dark weather, much swell, striking the ship hard under the paddle-boxes. Noon, Lat. 14° 46' S. Long. 58° 12' E. Coal rem. 317 t. 13 cwt. Oil 172 gallons. P.M. Squalls of wind, incessant rain, and heavy swell. Therm. 74°. Bar. 29.10. Unbent cables. At 1, in square sail. Squally, with a heavy</p>
4		7	6		11	26		
6		7	6		11	26		
8		8		S.E.	11	26		
10		8			11½	26		
12		8			12	26		
2		8	2	E.S.E.	12	26		
4		8	2		12	27		
6		8	2		12	28		
8		8			12	27		
10		8	2		12½	26		
12		8	4		12½	26		

sea. Midnight, strong breezes, with a heavy sea.

2	N.b.E.½E.	8	4	E.S.E.	12	26		<p><i>Friday, 2nd June.</i>—A.M. At 4, mod. br. and cloudy weather. 4h. 30m. set square sail, gaff topl. and topglnt. sl. In sq. sl. and topglnt. sail. 6h. 30m. a sail bearing N. by W., standing to the north and eastward. Set topglnt. sail. Therm. 76°. Bar. 29.90. Hoisting coal from after-hold into the bunkers. Sqly., with rain. Noon, mod. and cloudy weather. Lat. 11° 34' S. Long. 58° 30' E. Coal rem. 299 t. 4 cwt. Oil 108 gallons. P.M. Squally, with rain. A ship in sight standing with us. Therm. 75°. Bar. 29.10. At</p>
4		8	4		12	28		
6		8	2		12	28		
8		8	6		12	28		
10		8	6		12	28		
12		8	6		12	28		
2		8	4	E.S.E.	12	26		
4		8	4		12	26		
6	N. by E.	8	6		12	26		
8		9			12	26		
10		9			12½	26		
12		9			12½	26		

ditto weather. Strong breezes. At 11, Squally. In topgallant sail. Midnight, less wind and sea.

2	N. by E.	8	4	E.S.E.	13	26		<p><i>Saturday, June 3rd.</i>—A.M. Squally, with cloudy weather. Shipping much water. 4h. 30m. set square sail. Therm. 74°. Bar. 29.84. At 7, more moderate. Set fore top-gallant sail. Noon, steady breeze and fine weather. People employed getting coal out of after-hold. Spread awnings to dry. Lat. 8° 20' S. Long. 59° 4' E. Coal rem. 283 t. 1 cwt. Oil 164 gallons. P.M. Mod. breeze and passing clouds. Got 179 baskets of coals from after-hold into the bunkers during the afternoon. At 8, clear with light breeze and following sea. Midnight, moderate breeze and fine clear starlight.</p>
4		8	4		13	26		
6		8	6		13	26		
8		8	4		13	28		
10		8	4		13	28		
12		8	2		13	28		
2	North.	8			12	26		
4		8			12	26		
6		8	2		12	26		
8		8	2		13	26		
10		8	2		13	26		
12		8	6		13½	26		

750 LOG OF THE H. E. I. COMPANY'S STEAM-VESSEL BERENICE.

H	Courses.	K.	F.	Winds.	No. of Rev.	Ex. Cl. in ct.	Bar.	REMARKS.
2	North.	8	4	E.S.E.	15	28		<p><i>Sunday, 4th June.</i>—A.M. Fine clear wr. and smooth water. At 6, set gaff tp. sl. and mizen. Therm. 75. Bar. 29.90. At 7, bent and set flying jib. At 8, set the royal. Noon, Fine cl. wr. Lat. 5° 53' S. Long. 58° 41' E. Coal rem. 266 t. 12 cwt. Oil 160 glns. P.M. Mod. and fine. Sunset, mod. br. and cloudy wr. Squally. In royal. Midnight, moderate breeze and cloudy weather.</p>
4		8	6		15	28		
6		8	2		15	28		
8		9			15	28		
10		8	4		15	28		
12		8	4		15	28		
2	N. by E.	8	6		14	28		
4		8	6		14	28		
6		8	6		14	28		
8	NNE½E.	8	6	East.	14	28		
10		8	6		14½	28		
12		8	6		14½	28		
2	NNE½E.	8	6	East.	14	28		<p><i>Monday, 5th June.</i>—A.M. Squally. At 3, in sq. sail. Mod. br. and fine. Employed clearing railway in after-hold. Noon, mod. breezes and cloudy weather. Lat. 2° 50' S. Long. 59° 43' E. Coal rem. 249 t. 11 cwt. Oil 156 gallons. P.M. Mod. br. and fine wr. Employed hoisting coals out of after-hold. Therm. 83°. Bar. 30. Cloudy weather. Midnight, cloudy weather.</p>
4		8	6		14	28		
6		8	6		14½	28		
8		8	6		14½	28		
10		8	6		14½	28		
12		8	6		14½	28		
2		8	6	E.S.E.	15	29		
4		8	6		15	29		
6		8	4	S.E.	15	29		
8		8			15	29		
10		9			15	29		
12		9			15	29		
2	NNE½E	9		N.E.	15	29		<p><i>Tuesday, 6th June.</i>—A.M. Squally and variable. In all sail. Mod. br. and cloudy wr. Therm. 81°. Bar. 30. At 9, set fore and aft sails. Employed scrubbing and painting ship. Noon, cloudy weather. Lat. 0° 28' N. Long. 61° 14' S. Coal rem. 231 t. 18 cwt. Oil 152 gallons. P.M. Steady mod. br. and passing clouds. Scrubbed paint work with soap and fresh water. Took in all sail. Therm. 86°. Bar. 29.90. At 8, set fore trysail. Midnight, calm and clear.</p>
4		9			15	29		
6		8	2		15	29		
8		8		E. b S.	15	29		
10		9			14	29		
12		9			14	29		
2		9		S.E.	15	29		
4		8	6		15	29		
6		9			15	29		
8		9			15	29		
10		9			15½	29		
12		9			16	29		
2	NNE½E.	9		S.E.	16	29½		<p><i>Wednesday, 7th June.</i>—A.M. Daylight, fine clear weather. Employed cleaning paint work and tarring rigging. Therm. 83°. Bar. 29.90. At 11, heavy squall, with rain. Water smooth. 1h. 30m. Wind shifted to S.W. Monsoon. Lat. 3° 44' N. Long. 63° 22' E. Coal rem. 213 t. 19 cwt. Oil 148 glns. P.M. Set on the valve at half. P.M. Light br. and cloudy. Crew painting ship. Therm. 84°. Bar. 30. Sunset, light br. and fine. Midnight, light br. and fine.</p>
4		9			16	30		
6		9		S.	15	30		
8		9			15	30		
10		9		N	15	30		
12		8	6		14½	30		
2		9		S.W.	14½	24		
4		9			14½	24		
6		8	4		14½	24		
8		8	5		14½	24		
10		9			14½	24		
12		9			15	24		
2	NNE½E.	9	4	S.W.	15	25		<p><i>Thursday, 8th June.</i>—A.M. Daylight, light br. and fine weather. Therm. 84°. Bar. 30. Crew employed stowing booms and cleaning ship. Set fore and aft sails. Noon, light br. and cloudy weather. Lat. 5° 26' N. Long. 64° 48' E. Coal rem. 199 t. Oil 144 gallons. P.M. Fine weather and pleasant breeze. People employed painting. Therm. 84°. Bar. 29.95. Carpenter's scraping masts. Cloudy. Midnight, clear.</p>
4		9	4		15	25		
6		9			15	25		
8		9			15	25		
10		8	6		15	25		
12		8	6		15	25		
2		9		S.W.	15½	25		
4		9			15½	25		
6		9	4		15½	25		
8		9	4		15½	25		
10		9			15½	25		
12		9	4		15½	25		

H	Courses.	K.	F.	Winds.	No. of Rev.	Ex. Cts. in ct.	Bar.	REMARKS.
2	NNE $\frac{1}{2}$ E.	9		S.W.	15 $\frac{1}{2}$	25		<p><i>Friday, 9th June.</i>—A.M. Hazy weather. Mod. br. and cloudy. At 10, squally. In square sails. Therm. 84°. Bar. 29.95. People employed holystoning decks, &c. At 11, set square sails. Noon, cloudy. Lat. 8° 16' N. Long. 66° 44' E. Coal rem. 173 t. 15 cwt. Oil 140 gallons. P.M. Hard squalls, with heavy rain. Employed cleaning ship. Therm. 84°. Bar. 29.30. Sunset, squally. Took in the square sail. Midnight, squally weather.</p>
4		9	4		15 $\frac{1}{2}$	25		
6		9	4		15 $\frac{1}{2}$	25		
8		9	4		15 $\frac{1}{2}$	25		
10	N.N.E.	9	4	WSW.	15 $\frac{1}{2}$	25		
12		9	6		15 $\frac{1}{2}$	25		
2		9	4		16 $\frac{1}{2}$	24		
4		9	4		16 $\frac{1}{2}$	24		
6		9	4	16 $\frac{1}{2}$	24			
8		9	4	16 $\frac{1}{2}$	24			
10		9	4	16 $\frac{1}{2}$	24			
12		9	4	16 $\frac{1}{2}$	24			
2	N.N.E.	9		West.	16 $\frac{1}{2}$	25		<p><i>Saturday, 10th June.</i>—A.M. Steady strong breezes. Steady breezes. Employed scrubbing and holystoning decks. Therm. 85°. Bar. 29.90. Noon, squally, with heavy rain. Lat. 11° 15' N. Long. 68° 27' E. Coals rem. 158 t. 10 cwt. Oil 136 gallons. P.M. Mod. and cloudy. At 3, set off expansion valve. Run by patent log 25 $\frac{1}{2}$ 8. Therm. 85. Bar. 29.80. 5h. 30m. in topsail. At 6, run by patent log 49 $\frac{1}{2}$. Run in three miles with valve off 23 $\frac{1}{2}$ 8. Set on the valve. Heavy squalls of wind and rain.</p>
4		9	4		16 $\frac{1}{2}$	25		
6		9	4		16 $\frac{1}{2}$	25		
8		9	4		16 $\frac{1}{2}$	25		
10		9	4	WNW	16	25		
12		9	4		16 $\frac{1}{2}$	25		
2		9	4		16 $\frac{1}{2}$	25		
4		9	6		16 $\frac{1}{2}$	28		
6		9	6	16 $\frac{1}{2}$	32			
8		9	4	16 $\frac{1}{2}$	23 $\frac{1}{2}$			
10		9	4	16 $\frac{1}{2}$	23			
12		9	6	16 $\frac{1}{2}$	23			
Ship rolling very much at times. Midnight, mod. breeze and cloudy weather.								
2	N.N.E.	9	4	WNW	16	24		<p><i>Sunday, 11th June.</i>—A.M. At 1, set foretop sail. Cloudy, with rain and smooth water. Therm. 84°. Bar. 30. Drizzling rain throughout. Set gaff topsail and flying jib. Noon, mod. breeze and cloudy. No observation. Run per log 196'. Lat. 14° 10' N. Long. 70° 1' E. Coal rem. 143 t. 6 cwt. Oil 132 gallons. P.M. Sombre weather, mod. breeze, and smooth water. Run by patent log 35 $\frac{1}{2}$ miles. Therm. 85°. Bar. 29.85. Steady breezes. At 6, in all sail. Midnight, fine weather and light breeze.</p>
4		9	4		16	24		
6		9	4		15 $\frac{1}{2}$	24		
8		9	4		15 $\frac{1}{2}$	24		
10	N.E. b N.	10			15 $\frac{1}{2}$	24		
12		9	4		15 $\frac{1}{2}$	24		
2		10	4		17	25		
4		10			17	25		
6		10		North.	17	25		
8		9	4		17	25		
10		9	6		17	25		
12		9	6		17	25		
2	N.E. b N.	9		East.	17	24		<p><i>Monday, 12th June.</i>—A.M. Light airs and cloudy. Therm. 84°. Bar. 29.80. Dried square sails; unbent and stowed them in the sail room. Employed painting guns, yards, &c. Noon, fine weather. Lat. 16° 50' N. Long. 71° 36' E. Coal rem. 128 t. 13 cwt. Oil 128 gallons. P.M. 4h. 15m. Land bearing N.E. by E. At 6, extremes of ditto N. by E. $\frac{1}{2}$ E. to E. by S., in thirty-two fathoms mud. Zygheer E.N.E. Rettina Guiah E. $\frac{1}{2}$ N. Passed two vessels. Midnight, lt. br. and cloudy wr. In 15 fathoms.</p>
4		9			17	24		
6		8			17	24		
8		8	4		E.N.E.	17	24	
10		9	4	E.S.E.	17	24		
12		9			17	24		
2		9			WNW	17	24	
4		9			17	24		
6		9	4	N.	17	24		
8		9	4		17	24		
10		9			17	24		
12		9			17	24		
2	N. by W. At the moorings of Bombay.	9		East.	17	24		<p><i>Tuesday, 13th June.</i>—A.M. At 3, reduced steam. 2h. 30m. Sounded in thirteen fathoms mud. Passed three boats. 3h. 30m. Light-house N. by E. Reduced steam to half speed. At 4, in six fathoms mud. Hauled to the westward, altering course as requisite. At 6, pilot came on board, and took charge. Therm. 86°. Bar. 29.80. 7h. 30m. secured the vessel with larboard chain to the moorings. Draught forward 11 ft., aft 13 ft. 3in. Noon, light br. and sultry weather. Coal rem. 118 t. 10 cwt. Oil 124 $\frac{1}{2}$ gallons.</p>
4		9			17	24		
6						12		
8						3		
10								
12								
2								
4								
6								
8								
10								
12								

752 LOG OF THE HON. B. I. COMPANY'S STEAM-VESSEL BERENICE.

The foregoing log gives the following results: Voyage, Mauritius to Bombay. Total coal consumed by engines 197 t. 14 cwt., (allowing as much consumed in the latter half as the first of the 5th of June.) Average per hour 11 cwt. 110 lbs.; average per hour per horse power 5·8 lbs.; distance run by log 2,847 miles; average rate 8·6 miles per hour and 206·4 per day.

Voyages performed.	Vessels.	Measured dist. in miles.	Dist. run by Log, in miles.	Time occupied by Voy. D. H.	Average Rates by				Coal expended on the voyage.			Oil expended in gal.	Tallow expended.	Work of a ton of Coals in Miles.	Distance in dec. parts of a mile for a ton of Coals to each h. power.
					Measured dist.		Log dist.		Whole quan. in tons.	Av. hr. cwt.	Av. hr. H P in lb.				
					Hour	Day.	Hour.	Day.							
Falmouth to Teneriffe	{ A B	1430	1487	8 1	7·4	177	7·7	185	116	12	6½	—	—	12·3	0·058
Tene-riffe to { Mayo B. Vista	{ A B	905	895	3 23	9·4	225	9·4	225	62	13	7	124	380	11·2	0·048
Mayo to Fern.	{ A B	840	952	4 9	8·0	192	9·0	216	84	16	7½	17	240	10·0	0·043
B. Vista to Po.	{ A B	2140	2180	11 6	7·9	189	8·1	194	152	11	6	—	—	14·1	0·065
Fernando Po to C.	{ A B	2180	2272	11 5	8·1	194	8·4	202	155	11·4	5½	39	1770	14·1	0·061
Good Hope	{ A B	2340	2373	14 10	6·7	161	6·8	163	210	12·1	6½	—	—	11·1	0·059
Cape Good Hope to Mauritius	{ A B	2290	2594	14 5	6·8	163	7·6	182	267	15·6	7½	52	1614	8·1	0·055
Mauritius to Cochin	{ A B	2160	2295	16 0	6·0	144	6·0	143	217	11·3	6	—	—	10·6	0·050
Cochin to Bombay	{ A B	2290	2692	13 0	7·3	175	8·6	207	246	16·2	7½	48	578	9·3	0·040
Mauritius to Bombay	{ A B	2160	1985	12 6	7·3	175	6·7	161	150	12·3	6½	—	—	11·9	0·056
Cochin to Bombay	{ A B	585	not	3 16	6·6	158	gl-	ven	52	2	6½	—	—	11·1	0·052
Mauritius to Bombay	{ A B	2520	2847	13 18	7·6	182	8·6	206	197	11·9	5½	55	—	14·4	0·062

[A Atalanta. B Berenice.]

THE foregoing table has been constructed from the logs of the two steam-vessels, Atalanta and Berenice, which, with the exception of the Atalanta's, for the voyage from the Mauritius onwards, we have laid before our readers. The powers of the two vessels we are enabled, by the attention of Mr. Joshua Field,* to state confidently is as follows: Atalanta, cylinder 54 inches, stroke 5 feet, h. power 210. Berenice, cylinder 56 inches, stroke 5 feet 6 inches, h. power 230. In comparing the powers of these two engines, it is necessary that the rate of the pistons should be inversely as the length of the stroke; and the number of strokes of each should be as follows:—

Atalanta	20	19	18	17	16
Berenice	18·2	17·3	16·4	15·5	14·5

The wheels of both vessels are of the common kind; those of the Atalanta 20½ feet in diameter with 20 boards 2 feet by 8 feet. The wheels of the Berenice are about 22 or 23 feet in diameter, and the boards 9 feet wide.

The "measured distances" in the third column of the table, are the nearest navigable distances which a vessel must run over between the points of departure and arrival of the different voyages, being measured on the arcs of great circles. These distances have been used in obtaining the general results given in the table. They are mostly, as might be expected, in defect of the distance given by the log in column next to them; the excess in the latter arising no doubt from various causes: First, the impossibility of keeping always on the exact course; next the heave of the sea, currents, bad steerage, wrong variation, &c.; but notwithstanding these allowances, a very remarkable difference appears throughout the Berenice's distances given by log, which must be attributed to some other cause, probably a short log line, by which it has been made to appear that she has run a greater distance than she really has done. The Atalanta's distances per log, agree tolerably well with those measured, but the appearance of the two columns will perhaps afford a useful contrast. The coals consumed on the voyages are independent of those used by the purser, amounting in each vessel to about 4 cwt. daily. The last column but one shows the distance in miles and decimal parts of a mile that a ton of coals has taken the vessel on the voyage, deduced from the whole quantity used by the engines on that voyage, and this again referred to the proportion to each horse power for each vessel, forms the last column of the table. The distances throughout are expressed in nautical miles of 60 to the degree, and 6080 feet nearly. The voyages were performed between December and June, and it should be observed that no voyage was made without the use of sails.

* Messrs. Maudslay and Field are now fitting the engines of the "Great Western" Steamer, noticed in our last.

VOYAGE OF THE COLONIAL SCHOONER ISABELLA.—*In search of the Survivors of the Charles Eaton.*

(Continued from p. 633.)

JUNE 26.—Having heard this morning, that a part of a European boat was in the possession of the Indians, Mr. Lewis went to the shore to endeavour to discover to what vessel it belonged; but they would not show it to him. The boat this evening in searching round the island for any wreck, found a piece of sheet-lead in a deserted hut on *Wyer*, but it seemed to have been there a long while.

The next day, the 27th, the natives coming off as usual to trade, were informed that unless they produced the portion of the boat no bartering would be permitted. After remaining an hour alongside, they went away, very ill pleased. They explained that the boat had been left with them, as a reward for having preserved the life of a white man, and that they venerated it as a relic. In the afternoon two boats were sent on shore, to demand the wreck in question, and at last it was produced and brought on board. It proved to be a "stern thwart ship board," of a ship's stern or jolly boat, of very old fashion, apparently of American make, and had been a long while in the water; the wood was oak: a copper ring bolt was attached to it, and some copper nails. In the evening, Mr. Lewis gave to the natives some letters addressed to "The Master of the Vessel off the Island," the delivering of which, to the first ship that arrived, they were told, would be rewarded by a present. The purpose of the letters was to request the captain to be kind to them, and to give him information of what had been effected, as well as the plan of Mr. Lewis' future intentions.

The natives of Murray's Island, are a well-formed, athletic race, perfectly distinct from the Indians of Australia, with whom there seems to be little intercourse, but evidently connected with the Darnley Islanders, since they speak the same language, and keep up a constant communication with each other. They are, however, very different in disposition, the former being inoffensive and friendly, whilst the latter, and those of the islands to the northward, are ferocious and treacherous. They doubtless derive their origin from New Guinea, with the natives of which they frequently communicate. In figure, they are tall and well formed: many wear their hair loose on the forehead and shoulders, twisted into long ringlets, from the crown of the head: the *septum narium* is perforated, in which, at times, they wear a circular hook of tortoise shell: the lower lobe of the ear is slit, and hangs very low, some being three inches long. They do not scarify the body so much as the New Hollanders do, but the men generally have a scarred figure representing a shell on each shoulder, and the women are marked with the same figure on the breasts; and both sexes have a figure resembling a banana tree, or a cocoa-nut tree, on each side the head. During the cold season, the men and women partially lose their senses, and are unable to articulate; they eat scarcely anything, and roll about in the dust, as if they were deprived of reason.

The island contains about two hundred and fifty inhabitants, who subsist during the winter months on turtle and fish; and when these fail, on cocoa nuts, bananas, and yams, which they cultivate largely; the name of these fruits, respectively, are *koo*, *gobbow*, and *lev-var*.

They also cultivate the tobacco plant, which they prepare for smoking, by drying the leaves, and twisting it up into "figs." The pipe, is made of the stems of the young bamboo, six or eight inches long, inserted in a bowl made also of bamboo.

They believe that white people live always in ships, and possess no terrestrial home, and that they subsist upon sharks, porpoises, and dogs.*

The N.E. extremity of the island is held sacred by them, and only visited for the purpose of feasting or preserving the dead, which they suspend in the sun, and never bury.

Their weapons are spears, which they procure from the New Holland natives; clubs, headed with stone, and bows, and arrows; the latter they get from New Guinea: the bows are made of bamboo, and so strong that none of the schooner's people could bend them to fix the string, which is a thin slit of the skin of the bamboo; the arrows are of cane, about four feet long, headed with a pointed piece of hard *casuarina* wood; some are barbed, but others are scooped out like a carpenter's gouge, and sharp at the point.

The canoes, which are obtained from the Indians of New Guinea, contain from fourteen to sixteen individuals; they are about forty feet long, and appeared to have been hollowed out of a single tree; † the planks, which form the gun-whale, or upper streak, are sewed together with strips of cocoa nut, and secured with pegs:—they are low forward, and high abaft, and so narrow that the men cannot pass each other without crawling between their legs, in the bottom of the boat. In consequence of their narrow form, they are furnished on each side with outriggers, or a stage about ten feet wide; which, when under sail, is absolutely necessary to prevent its upsetting; for with a fresh breeze they are obliged to stand out upon the outrigger to windward, to keep the canoe upright. In pulling, they had no chance with the schooner's boats, in consequence of the stern and bow being encumbered with mats, which hang into the water. These mats, called *soo soo* are made of the young leaves of the cocoa nut split into shreds; the sails of the canoes are made of the same material. Some have the head carved with the figure of a man, ornamented with strings of cowries. ‡ Their dwellings are of circular form, built of bamboo, with a thatched roof, and are surrounded with a bamboo fence, as a protection from the inclemency of the N.W. monsoon.

Each hut has a dead house close at hand, in which are suspended the skulls of their departed friends, and the skins of their hands: the latter on festive or funeral occasions are worn by the women. The bodies of the dead are suspended in the sun for some time, and then are taken down, and the skin scarified in water; after which they are again suspended, until the flesh is decomposed; the skin is then smeared over with ochreous earth, and the head ornamented with two immense eyes

* Upon Ireland's telling them that white people eat the flesh of bullocks, and describing their size, they would not believe him, but laughed, and said they must be dogs; never having seen any other animal but the dog, which they obtained from the north coast of New Holland.

† One of these trees was afterwards observed on the N.E. side of Darnley Island, measuring ninety feet in length, and four feet in diameter.

‡ Ireland, upon being shown the drawing of the canoes of Murray Island in Flinders' Voyage, describes the ornament that is placed in the stem, to be a pole surmounted by a black feather, which they procure from New Guinea and prize very highly. P. P. K.

made of mother of pearl, and hung about with cowries, which gives it a hideous appearance. After death they suppose that the spirit of the deceased haunts the island, and frequently visits them at night, coming to their hut and trying to enter, which they prevent by barricading the doors. This spirit they call "*lammoor*," which means a white man. They describe the *lammoor* as being very powerful, and having immense hands, and being able to kill them at a single blow. Ireland seems to be strongly impressed with the same superstitious feeling; for, although ridiculed for it, he feels satisfied that he has both seen and heard them by day and night. He describes this spirit to be very large, and painted over with red ochre.

The most remarkable feature in their character is their inexplicable fondness for the preservation of the skulls,* whether of their deceased friends or enemies. Those of their friends, as has been before noticed, are strung up about the huts; and so desirous are they to possess the skull of a white man, that they travel from one end of the Strait to the other in search of one. Ireland and young D'Oyly had a narrow escape for their lives whilst at Murray's Island, being sought for by the Indians of *Aureed*, who came to the *Dowar* and *Wyer*; but they were concealed by their friends, and thus saved, or their heads would have ornamented the canoes of these savages.

Marriages are thus concluded:—the friends of the man carries off the female, and conceals her in the bridegroom's hut, who withdraws himself into the "bush," and conceals himself from the girl's friends, for a few days, and then returns to his habitation, upon which a conflict with bows and arrows takes place between him and the brothers and parents of his wife. These fights frequently end with death. The husband considers it an honour to fight for his wives. Polygamy is practised; some having two and some three wives, who work to support the husband by gardening and fishing. The women go naked, with the exception of a bundle of grass hung round the loins which they never remove. The men have no covering. As with all savages, parturition is easily got over: the woman moves about until the pains of labour commence; and when the child is born, it is carried to the sea-side and exposed to the surf for some time, after which the mother goes about her usual occupation. Infanticide is of very common occurrence; not from any superstitious feeling or sacrifice, but merely to prevent the family being increased beyond the means of providing for its subsistence; and this inhuman deed is done secretly, by the women, soon after parturition. The women also sell their children to any who will purchase them.

In Captain Flinders' account of the Island he notices the poles which are erected round the shores, and considered them to be used for some fishing purpose, but upon inquiry Mr. Lewis found that they were merely as ornaments; each pole is surrounded by a string of shells.†

* In the account of Bampton and Alt's voyage in the introduction to Capt. Flinders' Voyage, (see Flinders' Voyage, Introduction, Vol. I. xxxvi.) skulls and hands were observed suspended in the huts of the Darnley Islanders, and hung round a wooden image rudely carved into the representation of a man, or of some bird; and painted and decorated in a curious manner. A dead body was also found laid out in a manner similar to what is above described.

† Ireland says they are placed there for birds to build upon. The birds he describes to be with long necks and legs and wings, like cranes: perhaps it is the blue heron. P. P. K.

They acknowledge no chief, each family being distinct and independent of each other. Quarrels frequently take place, which after a fight are generally followed by a speedy reconciliation.

On the 26th June, having finished his visit to this friendly island, Mr. Lewis prepared to sail, and went on shore to take leave; upon going towards the boat to embark, the Indians followed him, shouting "*Lewis, Lewis.*" In the evening, all the guns both large and small were fired off.

Ireland having by this time recovered himself sufficiently to give a tolerably clear account of what had occurred, and described that the natives of *Aroob* or *Daruley's* Island, frequently visit the island where his companions were massacred, and that before he was taken to *Aureed* he visited *Aroob*; Mr. Lewis determined upon visiting the latter before he commenced his search for *Aureed*, in the hope that the *Aroob* people might know something more of the fate of *Sexton* and *D'Oyly* than the *Murray* Islanders; especially since no communication, according to Ireland, had existed between the islands for the last fourteen months. Besides, *Aroob* being to windward, it would on that account be better to visit it before running to leeward to *Double Island* in search of *Aureed*, the position of which was very uncertain.

Ireland being able to interpret his wishes to the *Aroob* people would also enable Mr. Lewis to prosecute his inquiries and search. As yet, the only account he could obtain of the two missing boys was from *Murray's* Island, the Indians of which stated them to have been murdered; but no reliance could be placed upon information which might be given from interested motives. Upon every consideration of the case therefore, he determined upon going to *Aroob*, and the next morning (the 26th) made preparations accordingly, and at nine o'clock got under weigh. When *Murray's* Island centre bore S.S.E. and its extremes S $\frac{1}{2}$ W. and S.E. by E., a shoal was observed about half a mile off to the south, extending E.S.E. and W.N.W. The schooner passed to windward of the "*Canoe Reef*;"* in doing which, she grounded on a coral patch, detached from the eastern end of the reef. On sounding round the rock, seventeen and twenty fathoms water were found close to it; a kedge being laid out, the schooner was hove off without sustaining any injury, and only with the loss of the kedge. In the evening she anchored in twenty and half fathoms, coarse sand and coral; but as the wind freshened up, and soon blew a gale, a second anchor was dropped.

Ireland now informed Mr. Lewis that he thought the bad weather was caused by the *Murray* Islanders; who, when they wish the wind to blow hard, are in the habit of suspending a stone to the branch of a tree, by a string, and of vociferating loudly, and talking to it, and spitting on it, whilst they turn it about; which they suppose causes a gale. The stone is called by them *Dow-yumbe*. Such weather was not usual at any rate, and whether it was caused by the incantation or not, the gale lasted seven days; during which, the schooner was detained at her dangerous anchorage, quite exposed to the sea, and the breakers of the reef close under the lee. For four days the wind blew a strong gale from the S.E., with rain and heavy squalls. In such wea-

* When the *Murray* Islanders go to *Darnley* Island, they go to the westward (i. e. under the lee) of the *Canoe Reef*.

ther no ship could dare to make the Barrier Reefs, without a great probability of destruction. While there, the latitude was observed to be $9^{\circ} 41' S.$, and the longitude by chronometer $143^{\circ} 55' E.$ The tide was found to change the same time as at Murray Island, but to run more rapidly.

On the 5th July, heartily tired of the detention and of the uncomfortable anchorage they had been exposed to, they got under weigh, and with more favourable weather proceeded to the northward, passing in their way two reefs which are not noticed on the chart. "Indeed," Mr. Lewis says, "all the reefs here-about are very incorrectly laid down in the chart both as to size and shape; but being obliged to be constantly at the masthead, I could not correct them as I wished.* At noon, the latitude observed was $9^{\circ} 24' S.$, when the Sand Key to the N.N.E. of *Aroob*, † or Daruley's Island, was open with the island about two miles to the northward; we were four miles off. On Captains Flinders and King's chart the reef has two keys or patches of sand, but when close to it, from the masthead, we only made out one, and that was both large and high, so that it can never be covered with the tide. The key appeared to me, to be laid down about five miles too far to the south.

"I have invariably found that the reefs trend in an oblong direction, and generally terminate with a pointed end, instead of the circular shape given by Captain Flinders. I experienced much difficulty in directing the course by the chart, and was obliged to guide the vessel by a look out from the masthead. After rounding the N.E. end of the reef, we hauled up for *Aroob*, and at five o'clock anchored in Treacherous Bay, in eighteen fathoms, with the following bearings; extremes of Island, E. $\frac{1}{2}$ N. and S.S.W., its centre S.E. by S., about one mile and a half off shore. From the anchorage, Nepean Island bore W. $\frac{1}{2}$ S., and Stephen's Island, W. by N."—*Lewis' MSS.*

As the schooner closed with the land, large groups of Indians were observed on the beach, waving boughs of trees, and making other demonstrations of peace and friendship; and no sooner had she anchored, than several canoes came off; and one came alongside, containing fourteen people, vociferating loudly, and making most hideous gesticulations, and repeating the usual signs of peace. Trade being their object, they were made to understand, by means of Ireland's assistance, that no barter would be allowed until the white men, whom they might have with them, should be given up. They denied that there were any; but as their word was not to be taken, they were not permitted to come alongside.

Ireland pointed out two of the Indians in the canoes as belonging to the tribe who murdered his companions; and thought they were present when the barbarous deed was done. Soon afterwards, as no trade

* Neither Captain Flinders nor I can be expected to answer for these errors. I was never within one hundred miles of this part; and Captain Flinders passed at a considerable distance from it. This portion of the chart is laid down from the one which resulted from Bligh and Portlock's voyage in 1792, in which Flinders served as a midshipman. (Flinders' Introduction, Vol. I., p. xix.) P.P.K.

† Bampton and Alt state the Indian name of Daruley Island to be *Wamvax*; (see Flinders' Voyage, Introduction I., xxxvii.;) but as Ireland never heard the name, they must be mistaken. No such word as *Wamvax*, according to Mr. Lewis, was known to the natives.

was permitted, the Indians left the vessel, saying they would return in the morning.

The difference between these islanders and those of Murray is very striking; for, although speaking the same language, and otherwise the same, they are much inferior to the latter in figure and general appearance; their countenance also bespeaks them to be much more ferocious and treacherous. Their principal residence is at the south-west end of the island. The inhabitants are also more numerous than at Murray Island, particularly at this season, when they receive visitors from the neighbouring islands. Mr. Lewis supposes the number of persons on Darnley Island to be about two hundred and sixty.* The only water-hole on the island is on the north side, near the beach in Treacherous Bay, about the centre of the island.

The next day, seven or eight canoes, each containing about fourteen persons came off, Ireland and the little D'Oyly were recognized by them and received many presents. The Indians were apparently delighted to see them, and called them by their names *Wak* and *Uass*.

As the schooner required a supply of water, Mr. Lewis bargained with the Indians for supplying some, promising to give them an axe for every two casks of water they would fill for him. Accordingly they took two casks on shore to the watering-place, which bore from the vessel about S.S.E. $\frac{1}{2}$ E.; and on landing, the women rolled them up and filled them, whilst the men lay stretched out upon the grass. Upon being brought on board, the water proved to be of indifferent quality. In the evening several of the Indians being on board, and attentively examining everything, Mr. Lewis proposed that the guns should be fired, which they consented to; but the loud report, and the splashing of the grape-shot, made those on board terribly frightened, whilst the Indians who were on the beach scampered off and concealed themselves, until they heard from the others that it was intended only to amuse them—an amusement, however, which they would gladly have dispensed with, as they were much alarmed even at the sight of a gun, after seeing some birds shot with a fowling-piece; the effect of which, they acknowledged to be much more destructive than their bow and arrows.

In the evening the launch sailed about sounding the bay, which was found to be very deep close to the shore. A portion of a ship's sail was found in one of the huts, which they said was given them by the natives of *Aureed*. It must have been taken from the first raft.

The next morning (July 7th) a raft of empty casks was sent ashore to be filled. On reaching the well, the water proved to be of very inferior quality, and quite hot from exposure to the sun. Enough for five casks only was obtained, which the Indians filled; they would not allow the boat's crew to do it themselves, for which, as there did not seem to be any good reason, it was thought they had poisoned the water, but as they drank plentifully of it, of course that suspicion was at once dispelled. Probably, however, as they assisted in rolling down the casks to the beach, their aid was intended to show their friendly wishes, and not to disguise any mischievous design. The natives, certainly, were apparently very peaceably disposed; and a few of the women ventured to approach and shake them by the hand.

* Ireland, however, thinks there may be about four hundred; and that they are not so numerous as those of Murray.

Whilst on shore, Mr. Lewis made every inquiry that might throw a light upon the object he had in view. The Indians assured him that they had no white people on the island; and told him that the two natives, who had been pointed out by Ireland as having been implicated in the murder, had gone away to their own island. They were not seen again; but it was thought probable that they were only concealed on the island: at any rate, their absence proved the correctness of Ireland's information.

In the evening four of the Indians embarked in the boat to pass the night on board; but three becoming frightened, changed their minds, and leaping overboard, returned to the shore; the other, being more courageous, or perhaps placing more confidence in their visitors than his companions did, remained on board, and had no reason to repent of his having done so.

The next day, the 8th, the water casks were again sent on shore, when the well was found to contain much clearer water than previously, and enough to fill our casks; but in rolling them down, which was done by the Indians, one of them was accidentally stove. Whilst the Indians were filling the casks, Mr. Rens and the carpenter accompanied Mr. Lewis up the mountain to select some timber, but they found none to answer their purpose. On this excursion several turtle-doves were shot, and a pink-eyed pigeon. During the walk they discovered a native hut, surrounded by a spot of ground containing about eight acres, cleared and planted with yams, banana, and a species of potatoes similar to that which the New Zealanders call *coomery*. An Indian and his wife were industriously at work cutting down branches of trees to shelter the plants from the sun. To the latter, a present of beads was made, which pleased her very much. This little plantation displayed no small skill and even taste. It is probable that, as the Indians depend on yams and fruit for their subsistence during this season, when no fish is to be procured, they do not bring them forward to barter; for none was brought to the schooner: on one occasion, some iron tools were offered in exchange for sweet potatoes, which, valuable as they esteemed them, they refused. As yet, no weapons had been seen among these Indians; not even a bow and arrow were offered to barter, which, with the Murray Islanders, was the principal article of trade. This conduct was at least suspicious, and served to put the crew of the *Isabella* on their guard.* Mr. Lewis felt little doubt that they would not have hesitated to attack the schooner, if her crew had been incautious enough to go on shore unarmed, and they should have shared the same fate with the unfortunate crew of the *Charles Eaton*. The appearance however of the schooner's crew was always sufficiently formidable to command respect.

It would appear that the north-west monsoon must blow with great violence, as well from the appearance of the coral and drift thrown up high on the beach, as from the dwellings and plantations being situated on the south and south-west sides of the island.

Although they have no deity to worship, they possessed a figure roughly carved on hard wood, to represent a man, to which they at-

* Ireland thinks that their weapons were not shown to avoid being obliged to barter them away, as they are valuable, and obtained with difficulty from the natives of New Guinea.

tributed the power of causing as well as healing sores. Mr. Lewis endeavoured to obtain this figure from them; but they resisted his tempting offers, until the day before the *Isabella* sailed, when he succeeded in obtaining it. The number of leprous cases here as well as at Murray Island, was remarkable; for there were few who had not boils or sores upon them, which may be attributed to the nature of their food and the intense heat of the sun.

They have no form of worship, nor any idea of a good or evil spirit, excepting the wooden *doctor* mentioned above, and the *lam-moor*, described in the account of the Murray Islanders. On Mr. Lewis explaining to them, on several occasions, the existence and attributes of a Supreme Being, they seemed lost in wonder, and wished to know "where it lived;"* which was explained.

During the fish season, the Indians live principally on fish. For the purpose of taking them, extensive stone weirs are made on the south-east side of the island. They were seen making one of very large dimensions. This is also practised by the Murray Islanders.

Before we sailed, two letters, containing an account of what we had done, were written and delivered to two of the Indians, named *Mam-moose* and *Ag-ghe*, who had formerly been very kind to Ireland; in consequence of which they received many presents, and were much noticed by Mr. Lewis and the *Isabella's* crew. They were desired to present the memorandums to the first white people they should see, who would reward them with *toree* for them.

Mam-moose's property was close to the watering-place, near which a piece of ground was dug and sown with culinary seeds; which *Mam-moose* appeared much pleased with, and promised to cultivate. Among them was the rock-melon, and maize, also pumpkin seeds, potatoes and peaches, all of which may be of essential service; as the Indians seem, at this period of the year, to depend principally on fruit for their subsistence.

They remembered very well the visit of Bampton and Alt,† and the loss of the boat; but they did not seem desirous of offering much explanation on that subject. They acknowledged that several of the Indians had been killed on that occasion, and their canoes, huts, and cultivated fields, had all been destroyed; and that one of them had been taken by the white people who had cut his head off.

On the 17th of July, an attempt was made to sail; and to pass out by the channel between *Aroob* and Tobins Key reef, but after having been very nearly thrown on a shoal, which, in consequence of the hazy state of the weather, was not seen until close to,‡ the schooner resumed her anchorage in Treacherous Bay.

In the evening, they were treated with an *Aroob* dance. The Indians had dressed themselves out with leaves tastefully arranged on different parts of the body. The musicians, who were at least fifty in number, had squatted themselves at a little distance, singing and beating time by striking a piece of bamboo with a stick, and others by striking their hinder parts with their hands.

* Ireland, however, thinks that although the Indians listened attentively they did not give credence to what they heard. P.P.K.

† See Appendix.

‡ The shoal extends about a cable's length S.W. and N.E., and is about six miles S.W. by S. from the centre of *Aroob*.

Naval Chronicle.

PROJECTED DOCKS.—We congratulate the good people of our principal sea-port, and its vicinity, on the grand effects likely to follow the establishment of the

SPITHEAD AND LANGSTON DOCKS, BONDING WAREHOUSES, AND
SHIP CANAL.—*Near Portsmouth.*

It is well known to all nautical and commercial men, that the most hazardous portion of every homeward voyage to the port of London up the Channel, is that between the Isle of Wight and the port of destination; and that the same hazard exists to an equal extent in outward voyages, between the same points. It is also equally well known, that, in addition to the enormous risk, both of life and property, from wreck,* there is protracted detention, often for weeks, both in going up and down channel, entailing heavy expense of wages, provisions, wear and tear of gear, as well as occasional loss of markets.

These and other considerations, about two years ago, having powerfully attracted the attention of Mr. Charles Mackenzie and Mr. Alexander Robertson, it appears that they determined on devising, if possible, some mode for obviating the known and admitted difficulties. The objects they proposed to attain were, a safe and commodious port, easy of access, unembarrassed by the voyage between the river Thames and the Isle of Wight, so near the metropolis that any evil arising from distance might be fully overbalanced by the positive advantages of diminished risk and expenditure.

After a careful examination of the whole line of coast from Beachy-Head to the Lizard, Haslar Lake, near Gosport, was selected as a point combining all the objects sought; and Mr. Robertson devoted his professional skill to the formation of plans for the establishment of docks and warehouses, peculiarly adapted to the locality chosen, on a scale commensurate with the great objects in view.

An application to her Majesty's government was necessary. The lords of the Treasury received it favourably; but on referring to the board of Admiralty an insurmountable objection was raised, on account of proximity of the proposed site to the great naval arsenal at Portsmouth. Baffled in this point, it became necessary either to abandon the idea of remedying a notorious evil, or to select some new and unobjectionable position. After mature consideration, it was determined to fix upon Langston Harbour, a natural inlet of the sea, about four miles nearly due east from Portsmouth, divided from Chichester harbour by Hayling Island; having at low water (spring tides) twelve feet water, with a rise of tide of eighteen feet, together with a good entrance for vessels, drawing not more than twelve feet over the bar and the Horse Sands.

An application to the Treasury for the requisite lands in Langston

* The detention of vessels by adverse winds, for weeks, in the Downs, and the losses by shipwreck on the Goodwin Sands, are too well known to require more than to call the public attention to the fact.

Harbour was made, and being sanctioned by the boards of Admiralty, Ordnance, and Woods and Forests, her Majesty's government made the grant applied for.

As, however, the passage to the proposed docks and warehouses over the bar of Langston Harbour was not sufficiently deep for vessels of large burthen, it was proposed to construct a ship-canal, to connect the deep water at Southsea Castle with the deep water in the harbour itself; and after much consideration a line for the canal was selected by Mr. Robertson, and submitted to, and approved of by, the boards of Treasury, Admiralty, Ordnance, and Woods and Forests; being a direct line from South Sea Castle to Fort Cumberland, and thence diverging north-eastward into deep water at the entrance of the proposed docks, situated on the west or Portsmouth side of Langston Harbour. We understand that the necessary grants from the crown have been made of the lands for the docks, warehouses, and canal; and the plans, drawings, and general arrangement of the whole establishment are completed, so that a powerful joint-stock company (now forming) might carry every object of this truly national undertaking into perfect realization.

The docks comprise areas of surface water as follows:—

The Entrance Basin	14 acres.	} Capable of mooring with perfect facility upwards of 600 ships of 300 t. each and above. Moorage for seventy vessels under seventeen feet draft of water.
The Import Dock	23 „	
The Export Dock	23 „	
The Basin for Coasters	7 „	
And the Timber Ponds connected therewith	14 „	

Water 81 acres.

The depth of water above the sills of the lock-gates, and in the dock and canal, being retained by the flood-gates, never can be less than twenty-six feet; the breadth of the locks between the walls forty-five feet; and that of the canal seventy-five feet also, between the walls. Steam tug boats will be employed to tow vessels from the roadstead of St. Helen's, through the canal to the docks and back again. By this means, tide and wind serving, a vessel, however large her burthen, loaded in these docks, could be towed out, and be fully at sea, going down or up channel in the short space of one hour.

The warehouses, with covered and enclosed sheds on the quays, are calculated to contain 157,000 tons of goods. One warehouse, for wines and spirits, to contain 10,000 pipes. One warehouse for landing and bonding 20,000 quarters of corn. Wharfs and two warehouses exclusively for the use of the excise and customs, with proper offices. Covered sheds or warehouses for the coasting trade. Bonding wharf for 750,000 deals; and ponds for bonding 6,000 loads of foreign timber.

Thus, accommodation for every branch of trade is provided; and when to the advantages of locality, *reduction of expence*, (such as freight, insurance, lights, pilotage, and other heavy charges,) is added a smaller rate of dock and warehouse charges than those of any of the docks in London, (which will afford an ample return to the proprietary of the Spithead and Langston docks,) there can be no reason-

able doubt that these last will, as soon as they are ready, become a place of general resort, but most especially for cargoes destined to be bonded for exportation, or for the supply of the southern and part of the middle counties; as besides sea carriage, the rail-roads actually constructing, as well as those contemplated in every direction, will render facility of communication, as great as that of any other similar establishment in the kingdom. It is scarcely necessary to add, that wharfs and yards for building and repairing ships of the largest class, are intended subsequently to be constructed. Nor ought it to be overlooked, that, during the construction of these works, employment will be given to vast numbers of labouring poor, while the necessary expenditure will give a new impulse to the whole of the neighbouring district.

THE MONARCH AND APOLLO.—In our last number (page 690) we recorded the unfortunate accident of the collision of these two vessels. The result of the inquest, as reported in the *Times*, is as follows:—

The coroner observed, that from the number of witnesses examined, and the time of night at which the unfortunate occurrence happened, it was a matter of surprise that so little contradiction had taken place in the lengthened evidence which had been given during this important investigation. The evidence that day produced, differed but little from that which was given on a former occasion as to the question at issue, consisting, as it did, of what ought to be the rules for the more safely conducting of steam vessels up and down the river. The question, therefore, would be the same as if the evidence of that day had not been given. The jury would observe that, at the time the unfortunate collision took place, the tide was running up, and that the set of it was on the Kentish side of the river, and the eddy was on the opposite shore. It was the usual custom for vessels going up, to cross over from Tilburyness-point to the opposite shore, and those coming down to cross from Broadness-point over to the Essex shore, to get out of the tide, if possible. All the witnesses agreed in this. All agreed that both vessels were more in the mid-channel than on either side of the river; and he must say, that the evidence of Captain Bain appeared to be true and faithful, and did not differ in any material point from the testimony of the crew and passengers of the Apollo. There was a difference between the evidence on both sides as to distance and as to time; it must, however, be recollected the reaches of the river differed as to width; and hence the deception might easily be accounted for, and particularly when the time of night was considered. All the witnesses agreed that it was not quite dark; some said it was clear, and others said it was hazy. This discrepancy, under the circumstances, might easily be accounted for. With the exception of the men at anchor off Grays, there was little difference as to time; these stated the vessel to be a quarter of an hour in sinking, while others said it was only seven minutes. This showed the difficulty which existed when seconds were made minutes and minutes were made hours, all of which would depend on the state of feeling and relative situation of parties at the time. The proper question, after all, for the jury to determine was this,—Was the Apollo in her proper situation at the time she was run down, and the Monarch in hers? It was evident that both vessels, after they had

stopped their engines, would have way upon them according to their size. The way of the Apollo had no doubt increased in consequence of her going with the tide, while the Monarch's superior power acted of course to occasion the catastrophe. From the evidence of Washer, the bargeman, both steamers were more up the reach than down, and from his evidence it appeared he could throw a stone on both. The unfortunate collision was to be seriously regretted; but if it occurred by mistake, the law would not look upon it as a criminal act, but consider it as an accident; yet still, if it arose from negligence, although that negligence might not amount to criminal neglect, they had the power of punishing such negligence by levying a deodand. They would likewise consider, whether both vessels might not have been in fault, or whether the fault was with one only. They also would take into account a matter brought forward late in the inquiry, but of considerable importance: it was as to the lights exhibited by the vessels; for although there was no law compelling vessels to put out lights, any more than there was a law to compel stage coaches to have lamps, still the custom might properly come under their consideration. With respect to the cry, from the Apollo to the Monarch, to starboard the helm, it was important to recollect that none of the men on board the lighters heard any such call, and Captain Bain told them he heard a noise on board the Apollo, but could not make out what it meant. Captain Bain was standing on a paddle-box, under which was an engine of great power working; and the noise of the engine might readily account for Captain Bain not hearing distinctly what occurred on board the Apollo. Even if Captain Bain heard the call to starboard his helm, (it coming in the dark from a distant vessel, without any means on his part of observing the policy of the advice,) he was quite justified in preferring to act on his own judgment. As related to pilotage, there was no act of parliament requiring vessels, navigating between our own ports, to have a pilot on board; but if there were a pilot on board, and he gave the fatal order, he would be responsible.

The foreman of the jury observed, that in this case the person, called a pilot, it had been proved, was, to the knowledge of the captain of the Monarch, no regular pilot, and that the captain had declared that he never delegated his authority to him or to any one.

The coroner said the juror took a wrong view of the case. If the act were to be regarded as criminal, then the person giving the order would be liable; but if the act be regarded as one of negligence, and the proceeding be by civil action for damages, then the commanders or owners may be made liable. The coroner then proceeded to recapitulate the whole of the voluminous evidence given in the case, giving a running commentary as he went on. He concluded by saying they would declare by their verdict whether either, or both, or neither vessel were to blame. With the observations he had made, he would leave the case in their hands, satisfied from the attention they had paid to the evidence they would give a correct verdict.

The jury, after an absence of nearly half an hour, returned the following verdict:—

“That it is the opinion of the jury that Mary Ann Jones was drowned in consequence of the collision of two steam boats, called the Monarch and the Apollo, and which collision took place in consequence of cul-

pable negligence and a bad look-out on board the Monarch, and they therefore levy upon the Monarch a deodand of £500."

What were these gentlemen about when they gave such a verdict? A more unjust decision than the foregoing we have never yet met with. It savours more of prejudice and party spirit than the honest and upright opinion of English gentlemen. Had the Apollo taken the precautions, which the Monarch *did* take, of carrying good lights both at her bows and masthead, which she assuredly ought to have done, the accident would not have happened. Here was the *culpable negligence* wrongly attributed to the Monarch; which vessel, so far from keeping a *bad look-out*, saw the Apollo's single light, *such as it was*, and took it to be that of a vessel lying at anchor. Had the coroner's jury been nautical men, they would have been acquainted with this well-known law of vessels, which long custom has established in the absence of all other. As to the question of the right side of the river, it is no question whatever, for there is no law on the subject; but it is stated in the evidence, by two Trinity-house pilots, and that worthy seaman Captain Martin, the harbour-master of Ramsgate, that *the Monarch was in her proper place in the river* at the time of the collision. The Monarch's lights were allowed by the captain of the Apollo to be brilliant lights, and there is no doubt that a *bad look-out* on board the Apollo would bring that vessel too near to the Monarch to admit of her getting out of her way. These particulars seem to have been entirely (? wilfully) disregarded by the coroner's jury, who, like fish out of their water, have been out of their element in this affair; and, setting at defiance all principles of justice, have substituted for a verdict, which would have reflected honour on them, one which, in the opinion of seamen, will ensure them contempt. ED. N. M.

WE had briefly expressed as above, our own opinion of this affair when we received the following letter from An Eye Witness, in whom we can place every confidence, and which, as our readers will see, fully confirms all we have said:—

Mr. Editor,—Observing the view a correct one, taken by you in your last number, of the proceedings and verdict of the jury, on the body of Mrs. Mary Ann Jones, occasioned by the collision of the Monarch and Apollo; allow me to present you with the names, professions, and place of abode, of those worthy gentlemen who composed that immaculate and disinterested body. This notable jury, Sir, was formed at Gravesend, of

Mr. Holton	Grocer, Foreman	New Road.
Mr. Munns	Shoe-Maker	High Street.
Mr. Nonmus	Ditto	Ditto
Mr. Munn	Licensed Victualler	Ditto.
Mr. Flint	Ditto	Ditto.
Mr. Chumbler	Ditto	Ditto.
Mr. Birch	Ditto	New Road.
Mr. Missing	Ditto	West Street.
Mr. Curtis	Ditto	Ditto.
Mr. Howse	Ditto	King Street.
Mr. Hall	China Dealer	High Street.
Mr. Willoughby	Straw Bonnet Maker	New Road.

Mr. Hatton Draper High Street.
 Mr. Gregory Clerk, Star Steam Office Ditto.
 Mr. Lovell Eating-House Keeper . West Street.
 Mr. Barnichina . . Broker New Road.
 Mr. Steinbach . . . Half-pay Officer, Army, Panock Street.

Of the above number, you will observe one grocer, two shoe-makers, seven licensed victuallers, directly or indirectly connected with the Apollo's company, one china dealer, one straw bonnet maker, one draper, one clerk belonging to same company, one eating-house keeper, one broker, and a half-pay army officer; all of whom, you may readily conceive, are altogether ignorant of nautical matters, and were determined to find a verdict against the Monarch contrary to common sense and justice.

The want of *proper lights* on board the Apollo was the true cause of the catastrophe. After it happened, if there was time to lower boats down to send them to the Apollo, and bring on board thirty-four individuals, surely there was time sufficient to save the lives of the two unfortunate children; or if Mr. Granger, who was a passenger in the Apollo, who swore through thick and thin, and who was asleep when it happened, had time to dress himself, to go down to the cabin, where his wife was, and assist in dressing her, getting her on deck, and into the boat, no man in his right senses can for a moment suppose that, had the least possible exertion been made, there was not time sufficient for saving every one. It was proved in the evidence that the vessel was old and crazy, badly appointed, the captain inexperienced, and the very first person to find his way on board the Monarch; the mate asleep below, a boy at the wheel, and those on deck careless and indifferent.

Your obedient servant,

AN EYE WITNESS.

Oct. 9th, 1837.

Our correspondent, "An Eye Witness," has really done a service in sending us the names of this committee, for which he well deserves the thanks of all friends to justice, and particularly those of our nautical readers. Our brother tars have here a pretty picture set before them. We said there was not a nautical man in the committee, and there is not even one. Had they been gentlemen who possessed perchance some nautical experience, we might have looked for a more creditable verdict; but, alas! what do we see? a heterogeneous mixture of dealers in groceries, shoes, straw bonnets, china, drapery, the keeper of an eating-house, a broker, an officer in the army, a clerk of a steam-packet company, and a crew of licensed victuallers, *interested* men, (perhaps the rest were also,) to investigate an affair in which to pronounce a proper verdict required considerable nautical experience; and these, let our nautical readers observe, are the kind of persons who are called on to sit in sober judgment on such cases as the Monarch and Apollo, and to determine the degree of skill which is required to handle a heavy vessel in a narrow tideway, like the river Thames, at night.

STEAM BOAT ACCIDENTS.—The following letter which appeared in the *Times* on the recent occasion of the Apollo being run foul of by

the Monarch, will, it is hoped, not be lost sight of by the managers of the various steam-boat companies, whose vessels are continually plying on our crowded rivers. It is one among a few simple measures which must be adopted ere long, or we shall soon have to commence a set of tables similar to those of our "wrecks of British shipping," in which, probably, the number of lives lost will far surpass the number of ships, the loss of which we have annually to record.

Mr. Editor,—The late serious steam-boat accident on the river Thames, I mean the encounter of the Monarch and the Apollo, appears to claim the attention of persons who have had opportunities of considering such things, and of suggesting practical remedies.

In the United States of America every steam-boat has the steersman placed so far forward in the vessel that he can readily distinguish, even at night, any vessel which is meeting him, or any boat or other obstacle which lies in his course. The utility of this method of steering any vessel moving so fast as a steam-boat in a crowded river, even in day-time, need scarcely be insisted upon. But when the darkness of night is superadded, its advantages become still more obvious, and the plan ought certainly to be adopted in every boat navigating the river.

In practice nothing can be more simple than the American mode of steering. The tiller is generally shipped abaft the rudder, in order to leave the quarter-deck quite free for the passengers. The tiller-ropes are then led, through blocks, on the quarter, and along small trunks, to the foremost part of the vessel, where they are again rove through blocks, and made to pass round the barrel of an ordinary steering-wheel, which being raised on a platform, to the height of ten or twelve feet above the deck, and not far from the bows of the ship, the helmsman can distinctly see objects before him, and by the proper movements of the wheel readily avoid them.

It has been objected to this adaptation of the steering process, that the weight and friction of the ropes would be so great that the proper degree of celerity of movement could not be commanded. But I have myself often, and with the greatest ease steered boats as large as any of ours on the Mississippi and elsewhere, and I know that in other respects there exist no technical difficulties in the way of its universal adoption.

It is well known to professional men that only one person can steer a ship properly in an intricate navigation; and even those who are not bred to the sea well understand, that when a vessel, going at the rate of many miles an hour, is threading her way amongst shoals and boats, and numberless vessels, some meeting her, some crossing her, and some going in the same direction, there ought to be the most immediate communication between the sense of sight which is to distinguish these objects, the practised intellect which is to decide what is proper to be done, and the hand by which the regulating impulse is to be given to the guiding power. In other and plainer words, the helmsman ought to see what he is about, and not to act by the command of another.

In America the pilot himself is always at the wheel, and being raised up in the manner I have described, in the bow of the vessel, he can distinguish every obstacle, and know at once how best to steer clear of it.

With us the matter is very different. The helmsman is fixed in the worst position possible, at the very sternmost part of the vessel, where he can see nothing—first, owing to the want of elevation ; second, to the intervention of the masts and the chimney ; third, or to that of the crowds of passengers and their carriages and luggage ; and fourth, to his being at the whole length of the ship further from the object to be avoided. To remedy this inconvenience what is done by us ? The pilot stations himself on the top of one paddle-box, the captain on the other—both bad positions for seeing directly a-head. Only one of them ought to call out to the steersman what to do ; but, as the responsibility is shared by both, each of them does in practice interfere, as I have often indeed heard contradictory orders given by them respectively, while the bewildered helmsman knew not which way to turn the wheel. All this is bad enough in day-time, but I need not say how the confusion is worse confounded when it is dark, and when it is blowing and raining, and when several men have to be stationed along the deck to pass the word, as it is called, from the pilot to the helmsman, especially when the noise and bustle amongst the passengers, hunting for their carpet-bags, increase the difficulty. My wonder accordingly has much more often been excited how these vessels get on at all, than that occasional accidents should occur.

I must add, that when the remedy is so simple, so cheap, and when it has been so extensively tried and found effective, it is altogether inexcusable in those who have the power to regulate such things that this plan has not been universally adopted in our river boats. I have taken the liberty repeatedly to endeavour by letters, by personal remonstrance, and by publications in the scientific journals of the day, to rouse the steam companies and captains to the importance of this point, but hitherto in vain. I venture now to hope that you will take it up, and assist me with your powerful pen in obliging those who have so many lives, and so much valuable property under their charge, to adopt at least one very obvious means of adding to the safety of their boats. It is indeed ridiculous to think, that while every method which ingenuity or skill can devise for adding to the speed, beauty, or comfort of these vessels, is at once eagerly adopted, a mode of securing their safety, which ample experience has shown to be most efficacious, should be treated with neglect.

The only objection I have ever heard urged against this plan of steering is, that when the vessel left the river and entered a rough sea, the steersman would be needlessly exposed in the bow, and that in point of practise, he would be better if placed abaft, in the usual situation, than so far forward. In answer to this, it need only be said that nothing could be easier than to have another wheel and tiller ropes, fitted in the ordinary way, but the tiller not shipped till required, at which time the tiller used for the wheel in the bows might be unshipped or the ends of the tiller ropes cast off. In short, I think you will take my word for it, that, technically considered, nothing can be more simple than this device, which, by placing the whole power of guiding the steam-vessel in the hands of the pilot, (or of a man who stands by his side,) will not only essentially add to her safety, and that of all the other boats on the river, but enable her speed to be greatly accelerated without incurring nearly so much risk as at present.

I shall only further remark, that I cannot help thinking that when lives are lost, or property destroyed, on these occasions, a very serious responsibility falls on those who, having the means in their hands, stop short in the outfit of their vessels, in applying those methods of security which they or those who have attended to the subject know to be highly conducive to that object.

I remain your most obedient, humble servant,
Dunglass, Sept. 9. BASIL HALL, Captain R.N.

PORT OF MALAGA.—IT may be useful to inform captains of vessels connected with the Malaga trade, that the depth of water has materially decreased, since the discontinuance of the dredging work, which, till lately, was performed in that port with a government steam engine.

We have seen a very neat plan of Malaga, and another of Tarragona, by Mr. Henry Cox, of the Harlequin, which have been sent to the Admiralty by Captain Erskine; and we may perhaps be allowed to say, that, employing in this way the talented young men under his command, reflects great credit on the captain. Those officers who endeavour to raise the scientific character of their country, during the peace, by extending our maritime knowledge, and cherishing the useful arts, are assuredly those who will be the first to elevate her military renown during a war.

A WORD ON SIERRA LEONE.—IT is expected, and with too good reason, that in a few years more the English flag will carry on but little business between Cape Mount and Lahore. The American settlements are progressing in that extent of coast, and the peddling trade is the one in which they so particularly excel; they beat our people out and out, and actually come to this colony, purchase goods at the disadvantage of duties, and go along the coast collecting profitable returns. The good people in America, like the good Spaniards of the 14th century in that country, carry, in many cases, the Bible in one hand, and the sword in the other. Thousands of pious persons in America, and indeed in England, are subscribing their money to assist the negroes of America to establish themselves in Liberia, and I very much fear with sorrow to the Aborigines. I can only say, I wish their good intentions and donations were bestowed upon our own subjects in many parts of Ireland, Scotland, and particularly the Hebrides. I wish you could peep at this our colony of Sierra Leone, and see how England has been abused, how her munificence has been wasted and misapplied: we reduce our army and fleet; we leave many brave defenders to pine in poverty and unpromoted; we reduce our home establishments, become mean and miserable in our protection of sciences; while a place like this is allowed to hang a millstone on the neck of England. Believe me, our country pays dearly for this “whistle of the saints.”

A NAVAL OFFICER.

NEWLY DISCOVERED ISLAND.—The following account of an island, which has not hitherto appeared in the charts of the Pacific, is taken from the *Shipping Gazette*.

ENLARGED SERIES.—NO. 11.—VOL. I.

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The following extract from the log-book of the *Medway* has been handed to us by Captain Wright:—Monday, March 27, 1837. About 1, P. M., steering W. $\frac{1}{2}$ S., with a gentle trade-wind and fine clear weather, discovered a low coral island bearing due W. At 2h. 30m, the middle of the island bore due S., distant four miles. The whole island might be about seven miles in circumference, and containing a large lagoon. At the east end there is a reef about a mile long, on which the sea broke very high. The western extremity is woody, but without any cocoa-nut trees, as is frequently the case: it is apparently uninhabited. The middle of the island is in latitude $22^{\circ} 4' S.$, and longitude by a good chronometer, $136^{\circ} 20' W.$ This being a new discovery I have named it, "Wright's Lagoon Island."—*Australian Sydney Paper.*

A NOTICE * has been given by the Trinity House, dated Sept. 27, that the red flags, at present exhibited during the day at the mastheads of the several light vessels belonging to that corporation, were, on and from the 25th of October last, discontinued; and that, in lieu thereof, the said vessels would be distinguished in the day time by a red ball at the main masthead, which, in the event of the vessels driving from their proper stations, is to be taken down.

IRON STEAM VESSELS.—The *Rainbow*, an iron steam vessel, built for the General Steam Navigation Company, has been launched since our last, from Mr. J. Laird's yard, at Birkenhead, near Liverpool. She is the largest iron steam vessel built or building in this country, her dimensions being, length over all, 213 feet; beam, within paddle-boxes, 25 feet; extreme width, 49 feet. She is divided into six compartments, by five water-tight partitions, which entirely remove all danger of sinking in case of collision with other vessels; and if all the other advantages iron vessels possess are left out of view, the simple fact, that in them these partitions can be rendered most efficient and secure, will, we have no doubt, cause their general adoption, both for sea-going and river vessels. The *Rainbow* is now being fitted by Messrs. Forrester and Co., with a pair of ninety horse power engines; and her cabins, which are of the most spacious and elegant description, are also in a forward state. The *Rainbow* is the tenth vessel built by Mr. Laird, with water-tight compartments, and we understand that he has now three other large ones building on the same principle. We are induced more particularly to notice the launch of this vessel, as an iron steam-boat, called the *Sirius*, lately launched at the Isle of Dogs, is wrongly stated in the *Railway Magazine* to be the longest yet made of iron. She measures only 164 feet in keel, and 176 on deck, with a beam of 17 feet. She will have two high-pressure engines of thirty-five horse power each, with twenty-four inch cylinders of three and a half feet stroke, and three boilers with copper tubes worked expansively. She is divided into four compartments, by three iron water-tight bulk-heads, similar to those of the *Rainbow*; but it will be seen, on comparing the dimensions we have given, that she will not bear a comparison with her northern rival. It is confidently expected that the

* We have been asked why these and similar notices are not advertised in the *Nautical*. We really cannot tell, unless it is because we print them gratis.

Rainbow, from her superior model and light draft of water, will be one of the fastest vessels afloat. The Sirius is intended for the Rhone, and it is no difficult matter to see that these iron steamers are gradually becoming general.

NEW TRINITY HARBOUR.—We understand that operations are now about to commence at the new Trinity Harbour; and that ere long the works will be in active progress. Mr. Scott, the secretary to the company, assisted by eminent engineers, has lately caused the bottom of the Frith to be bored at the different places where the foundations are to be laid; and the nature of the ground has, in every instance, realized their most sanguine expectations. The anchorage of this harbour is said to be superior to any other in the Frith of Forth; and from its depth of water, being inaccessible at all periods of the tide, proximity to Edinburgh and Leith, and the extensive accommodation for steam ships, and all large classed vessels, the undertaking seems likely to be successful.

THE GUERNSEY FISHERIES.—A joint commission has been appointed by the French and English governments for settling the limits of the oyster fisheries on the coast of Normandy, and will shortly be assembled at Granville. On the part of France, Captain Depanis, of the navy, and M. Gerbidon, a naval commissary, have been appointed; and, on the part of England, Mr. Perrier, the English consul at Brest, and Lieut. Spark of the navy.

SURVIVORS OF THE EXPEDITION OF LA PEROUSE.—The *Journal de la Marine et des Colonies* states that an American captain, named Morell, has written to inform the *Societe de Geographie* that, in the course of his voyages in the South Seas, he has found two of the children of the surgeon attached to the above expedition; and the Minister of Marine has desired to be furnished with every particular collected concerning them, together with the precise latitude and longitude of the island in which they were found.

IRON STEAMER.—We noticed in a late number the launch and departure of the *Egyptienne*, built by Mr. Laird, of Birkenhead; and we find her thus spoken of, in a letter received from Alexandria. The beautiful little iron steamer, built for the Nile by Messrs. Laird, of Liverpool, arrived here on the 5th, in eighteen days steaming from England. All whose opinions are of any value acknowledge that a more perfect thing never walked the waters. She has since been to Candia and back; and last evening she sailed again with a report of the progress of the inundation, which this year, it is feared, will prove defective; that report showing a rise of sixteen and a half cubits only, while twenty and a half are required to constitute a good and sufficient Nile.

SIR GEORGE GIPPS.—The Upton Castle, Captain Williams, of London, left Plymouth on the 16th Oct. for Sydney, having embarked his Excellency Sir George Gipps, (the newly-appointed governor of that colony,) with his lady and family; also numerous highly respect-

able individuals as passengers. Although this ship experienced an unusually protracted passage round to this port, yet she has sailed on the precise day appointed for her departure; and it may be noticed as a remarkable coincidence, that though the Upton Castle is the fourth ship despatched from this port during the current year, each ship has been equally fortunate, as to the favourable state of the weather; and that the arrangements made by Mr. Marshall, the Australian emigration-agent in London, have been such as to gather into one focus, as it were, (they being on the spot,) the passengers from all parts of the kingdom, all of whom appeared highly gratified, and have left in good spirits, and with cheering prospects of a good voyage.

LAUNCH OF THE STEAM SHIP, LIVERPOOL.—Saturday, the splendid new steam ship, Liverpool, which, for a length of time past, has been building for Sir John Tobin, at Humble and Milcrest's yard, Trentham Street, in this town, was launched under the most favourable auspices. As a specimen of naval architecture, this is the most splendid we ever saw in the port of Liverpool. She was built by Messrs. Humble and Milcrest, and, with one exception, is the longest in the keel of any ship laid down. The ship measures 240 feet in length from her figure-head to her taff-rail, and 57½ feet over her paddle-boxes. She is 1,042 tons by admeasurement, but will carry a cargo of 1,500 tons; her depth of hold is 20 feet. When completed she will cost at least £45,000. She has occupied the builders twelve months in building. Her two engines are 460 horse power.—*Liverpool Paper.*

LOSS OF THE DON JUAN STEAMER.—The Peninsular steam company's vessel, the Don Juan, on her way from Gibraltar to Falmouth, went on shore near Tarifa Light, at about four P.M., on the 15th October, only a few hours after leaving Gibraltar, during a thick fog. The passengers, crew, mails, money, and some stores, were fortunately saved, through the aid of several fishing-boats which were near the spot at the time. She soon after sank, and has since gone to pieces.

It is stated in the *Hants Advertiser*, and we repeat it here with much pleasure, that Captain Engledue, has given entire satisfaction to his owners, by the zeal and energy of his conduct during the loss of the vessel; and so perfectly satisfied are they, that the loss arose entirely from fortuitous circumstances, and as a proof of "the high character he still holds in their estimation," they will appoint him to the command of another vessel for the same station, in the course of a short period. From the nature of the service in which the vessel was engaged, the Admiralty have inquired into the cause of her loss, and they likewise have exempted Captain E. from all blame, expressing their conviction that the most judicious course was followed.

THE SHIPPING GAZETTE.—It is with much satisfaction that we find the *London Shipping Gazette* establishing itself in the estimation in which it deserves to be held. It is now we perceive the largest evening paper published, and to the vast commercial and maritime interests of this country, is a channel of the most valuable information. We have adduced in every number proof of its utility in forming our tables of *wrecks*, and the accounts of *law proceedings*, and have

frequently collected from its columns valuable pieces of hydrography. We trust it will continue to enjoy the well-earned popularity which it has gained.

WYRE HARBOUR.—The embankment of the entrance to this harbour, which appears a great undertaking, is to be from eight to ten feet above high water-mark ; and upwards of 40,000 tons of stone have already been laid down ; the foundation is as solid as a rock, and has effected an improvement in the channel of the river, by narrowing its course, and causing the waters to flow in a more direct line. The oldest seamen belonging to the port state, that the Harbour Company has rendered the navigation of the coast much less dangerous, from the judicious way in which their buoys (marking the extent of the outer shoals) are laid down, and that when the light is established at its entrance by cross bearings with it and Walney Island light, a ship may, during the night, either run in and anchor or otherwise, and by the same means avoid every shoal between Rossall and Walney Island, which may be considered as forming the entrance to Morecambe Bay. The steam dredge is at work, with which it is intended to deepen the channel throughout, so as to render it easy of access, at any time of the tide, for the largest description of merchant ships ; and which we conceive may be readily done, as we noticed a vessel working in with the wind from the southward at the first hour of flood, without the slightest difficulty ; and so closely was she enabled to stand to the edge of the shingle beach, that a rope might readily have been thrown to her in passing. A part of the harbour called Cancha-hole, at low water, has from eighteen to twenty-four feet water, with good anchorage, and sheltered at every point of the compass. The channel in that part of the river is about 400 feet wide at the lowest ebbs ; the tide falling out from the highest high water-mark to the lowest ebb 225 feet, in this part of the harbour. It is intended to lay down ships' moorings on a new principle in the harbour ; so that it would appear that everything is doing to render the port a most commodious one ; and under the auspices of Mr. Fleetwood, no doubt appears of the complete success of every part of this enterprising undertaking.

PIRATES IN THE ARCHIPELAGO.—The following, coincides with the account of the Thomas Crisp, in another part of this number :—

A Trieste paper relates that on the 31st of August, a Greek vessel was surprised by pirates on the coast of Candia. The crew and six passengers were tied fast in the hold, and, after the vessel had been plundered, the pirates scuttled her. Three sailors and five passengers lost their lives, but the captain and one of the sailors succeeded in disengaging themselves, and swam ashore : a similar fate, it is feared, has befallen a vessel which sailed from Candia about two months ago, with a large sum of money on board, no tidings having since been received of her.

COURTS MARTIAL.—Mr. H. Arnot, late assistant surgeon of H. M. Steam Vessel, Carron, placed at the bottom of the list of assistant surgeons ; Commander Warren, of the Serpent, fully acquitted ;

Mr. A. I. Knight, assistant master of H.M. Ship, *Delight*, dismissed his ship; Mr. A. Lyons, late gunner of H.M. ship, *Delight*, dismissed the service.

Law Proceedings.

POWER OF THE CAPTAINS OF MERCHANT VESSELS.

THE following important case was decided on the 7th of last June, at the Thames Police Office, and is that which we have previously alluded to in this volume.*

Captain John Davis, the master of the ship *Manly*, and Robert Ray, the chief mate, were brought before Mr. Broderip and Mr. Greenwood, at the Thames Police Office, charged with assaulting and beating John Crofts and Thomas Foley, seamen on board, and inflicting three dozen lashes on their bare backs at Santander, on the coast of Spain.

Mr. Pelham, the solicitor, appeared for the prosecution, and Mr. Clarkson, the barrister, and Mr. Hadwen, an attorney, with three other professional gentlemen, for the defendants. The proceedings excited a good deal of interest. The defendant, Captain Davis, was the prosecutor of his two mates, who were tried for mutiny about three years ago, and attempting to seize the *Manly*. On that occasion it was stated, that the captain had placed a loaded pistol in a barrel of gunpowder in the cabin, and threatened to fire it off and blow up the ship if the mutineers advanced further. The mates were, after a long trial, acquitted, and are now at sea in other ships.

Mr. Pelham stated the case as it was afterwards detailed in evidence, and said the captain had exhibited great harshness to the men, and had taken advantage of his situation as master to revive the use of the cat-o'-nine-tails, with which the men had been cruelly flogged. He should first begin with the case of Crofts.

John Crofts, a well-dressed man, who, it was said, had come into possession of considerable property since his return from sea, was then sworn. It appeared from his evidence, that the ship had been on a trading voyage to South America, Santander, and other places, and the proceedings out of which the affair originated commenced on the 27th of December. On that day the vessel was lying at Santander, and Crofts, Foley, and two others, took the captain on board the *James Watt* steamer, which was lying near. The men remained on board all day, and in the evening were invited into the fore-castle, where they had supper, and were treated to a good deal of grog. At midnight, Captain Davis called for his boat's crew to row him back, and observing that Foley was in liquor, ordered him to remain on board the *James Watt*. Foley, however, got into the *Manly's* boat,

* We copy it from the *Shipping Gazette*, an evening paper, which we are very glad to see maintaining its proper place among the daily prints. The information on shipping affairs of all descriptions contained in one number of this valuable paper alone, is more than in all the rest of its cotemporaries put together; indeed it is not to be found anywhere else. We perceive also, that not only are the multifarious particulars of our numerous mercantile shipping given, but that the proceedings of the yacht squadron and those of her Majesty's navy seem equally to occupy the Editor's attention.—[Ed. N. M.]

and said, that was where he should stop. The captain got into a violent passion and threatened Foley. The men begged of him to come into the boat, and promised to pull him on board his own ship in safety. He got into the boat and abused Foley, whom he attempted to strike with a thick stick he had in his hand. Crofts, who was pulling the next oar, jumped up and said he should not strike the man. The captain then broke the stick about Croft's head, and called out, "Give me a boat-hook, I'll knock the —— down." A seaman named Steddford told him the boat-hook was an unlawful weapon, and he should not use it. The captain and the carpenter struggled for the possession of the boat-hook, when the boat, which was represented as a very small one, gave a lurch, went over, and filled. The captain and crew were all immersed in the water, and had a narrow escape of their lives. The people belonging to the James Watt picked them up, and the captain, who was in an exhausted state, remained in the steamer all night, while the crew returned to the Manly. Next morning Crofts and Foley were addressed by Ray, the chief mate, who said they had done a pretty job, and had attempted to drown the captain. Crofts told him it was an accident. The mate ordered Crofts and Foley to scrape the masts after breakfast. They said they had no knives, and the mate said they must find knives. The men said they left their knives on board the steamer, and if the mate would find them either knives or scrapers they would scrape the masts. The mate said, "O, you refuse duty." At ten o'clock the captain came on board, and the mate informed him that the two men had refused their duty. The captain said he would serve them out for it, and sent the two mates forward to bring them aft, and ordered them to be "seized up" to the gratings. The men refused to be served so. The captain laid hold of Crofts, who hailed the boat of his Majesty's ship *Castor*, which was passing. He was immediately thrown down by the captain on the hen-cobp, and used in a very rough manner. The captain knelt on his stomach and grasped his throat so tightly that he was almost choked, and became quite black in the face. The carpenter sung out, "Don't strangle the man;" and the captain released him, pushed him forward, and ordered him to be put into irons. Crofts asked the carpenter to assist him and prevent that being done. The carpenter said he was too weak to render any assistance. The captain and two mates seized Crofts and dragged him along like a dog by the hair of the head and handcuffed him. He was in handcuffs for three quarters of an hour, and was then stripped, tied up to the main rigging, and by the captain's orders received three dozen lashes on the bare back, which were inflicted by the mate with great severity. The captain stood by and counted the lashes, and told the mate to give it him well. After he was flogged he was put in irons and kept on bread and water for fifty-six hours. Foley received a precisely similar punishment.

In answer to questions by Mr. Pelham, Crofts said, the cat was made for the purpose with log lines by the defendant Ray. The punishment was a foul one—the stripes were not confined to his back but fell on his neck and loins. The mate and Foley quarrelled before the captain came on board, and Ray struck the man with a broomstick. They scuffled and fell on deck. He was about to pick Foley up, and the second mate pulled him back.

The witness was cross-examined with much severity and at great length by Mr. Clarkson, and it appeared that there had been a good deal of ill feeling and misconduct on the part of the crew towards the captain. The witness said he recollected being at Guayaquil, in South America. When the sails were bent, and ready for sea, the crew asked for two hours' liberty ashore, which was granted. They stopped twenty-two hours, and the captain employed the military to find them, and bring them on board. They had had no liberty before for five months. They were not in the habit of taking the ship's boat to go ashore, they took another boat. The crew brought spirits on board without the captain's leave, before the transaction in question occurred. They all got drunk, and there was a row, during which the second mate was beaten and abused. He believed no complaint was made to the captain. After much pressing and fencing with the learned counsel, Crofts said there was a complaint. The crew armed themselves with handspikes, and defied the captain. They told him to go below, and get his "bull dogs," meaning his pistols, which he always kept loaded under his pillow. With the exception of Foley and Crofts, who were absent, all hands were ready to receive the captain with handspikes. The captain went on board Lord John Hay's vessel, the *Castor*, and the British consul at Santander came on board with a guard of soldiers. Four men were sent to prison. He was not to say drunk on the night when they were drinking on board the *James Watt*. He was in the fore-castle from seven to twelve drinking. After the magistrate had frequently reprimanded Crofts for fencing with the questions, Crofts admitted the liquor was in a pannikin, and the boat's crew drank as much as they liked. They were all a little in liquor when the captain came into the *Manly's* boat. He did not call him a —, and would swear he heard no one else call him so. He did not give the captain any abuse until he struck Foley. He would swear he was not drunk.

Mr. Broderip—After you had been drinking liquor out of a pannikin from seven to twelve, you mean to take upon yourself to swear you were not drunk?

The cross-examination was continued. The words between Foley and the captain were words of abuse. Some of them left their jackets on board the *James Watt*, but it was not for the purpose of being prepared for a swim when the boat upset.

Mr. Broderip—What was it for?—mind how you answer that.

Crofts—The steamer's fore-castle was very warm, and when the captain called us, we flew up the ladder to obey his orders.

The cross examination was resumed by Mr. Clarkson—He and his shipmates were not called several times. He and Foley did not upset the boat. Foley swam very well. He did not say it was a pity the —, meaning the captain, was not drowned. The man did not strike the captain of the *James Watt*. The captain of the *James Watt* struck Foley. He hit him for nothing he supposed. Had some recollection of Foley's striking the captain of the *James Watt*, and begging his pardon for it, saying he thought it was the captain of the *Manly*. The captain struck Foley because he was bellowing when he was ordered to scrape the masts; he and Foley did not go to look for any knives, because he did not know where to find them. He did not

tell the mate he would see him d——d first—he did not say he would not scrape the masts; he and Foley did not strike the mate; there was a great scuffle between Foley and the mate, and the latter bled profusely from the nose, but did not bleed anywhere else. Their own knives had been left in their jacket pockets.

By Mr. Pelham—The carpenter had his full dress on, and was nearly drowned. Witness had his waistcoat, trousers, frock, and shirt on, and Foley the same. They wrote to Lord John Hay about the flogging, and he sent his first lieutenant on board.

Mr. Clarkson—And he left you and Foley in irons without interfering.

Crofts—Yes, Sir.

Mr. Broderip said the inference to be drawn from that was, that the lieutenant left the men where he found them, believing that they deserved the punishment.

Mr. Pelham said another inference might be fairly drawn from the fact stated, that the men felt the injustice of being subjected to such a disgraceful punishment, and wrote to Lord John Hay, the commodore on the station, complaining of it.

John Stediforth confirmed the statement of Crofts' as to the punishment inflicted on the men and the previous transaction; but he swore that Foley was quite sober, and that not a word was spoken before the captain raised the stick, which fell right athwart Crofts' head. Witness told the captain the boat-hook was an unlawful weapon and prevented him using it. Witness stood up in the boat, and the captain did the same, and put his foot on the gunwale, and capsized the boat.

Mr. Broderip—You say that Foley was quite sober, and that the captain upset the boat. Then the other witness has told a mass of lies, or you have said that which is untrue. Are you one of the men who were ready to receive the captain with handspikes?

The carpenter said he was not, and was subjected to a sharp cross-examination by Mr. Clarkson. He said he had never threatened, while the ship was in South America, to take the ship from the captain when she got into blue water. He had complained of the coffee which was served out. The captain complained that Foley was the cause of the boat upsetting. At the instigation of the master of the *James Watt* the mate beat Foley as hard as he was able. The witness, in answer to further questions, gave answers quite at variance with the statement of Foley, and said Crofts stood up to take the stick away from the captain.

Mr. Broderip—And Crofts has sworn he never got off his seat. You have been telling us a tissue of falsehoods.

Mr. Pelham submitted that the main facts remained uncontradicted. The captain had come on board, and without making any inquiry at all, on hearing a statement from the mate, had thought proper to beat the man, and, after seizing him by the throat, and nearly strangling him, had ordered the mate to inflict three dozen lashes with the cat. He contended that a *prima facie* case had been made out to warrant the magistrates in holding the defendants to bail; and that, under any circumstances, flogging with the cat could not be justified in a merchant vessel lying at anchor in a foreign port, where the authorities of the

place could have been applied to for redress, or the assistance of the British consul called for by the master.

Mr. Clarkson addressed the bench at considerable length. He said the captain was intrusted with a ship and cargo, valued at £5,000, and a great quantity of specie on board; and it was not until all other means of coercion had failed that he had recourse to the punishment complained of. In the first place, the crew had been in a disaffected state throughout the voyage; they deserted the ship at Guayaquil, when she was ready for sea, and after threats had been held out that the vessel would be taken, and the captain was compelled to sleep with pistols under his pillow, the men had the hardihood, while the ship was at Santander, to break out into open revolt and mutiny. The authorities were appealed to, soldiers were sent on board, and the principals were sent to goal. After this, as he should be able to prove, a plot was laid to drown the captain by upsetting the boat and leaving him to his fate; the men having previously left their jackets on board the *James Watt*, to give them an opportunity of swimming well. That scheme, fortunately for the men, had failed, or they would, ere this, have been on their way to a place of execution. This was followed up by a refusal of duty on the part of Crofts and Foley, and an attack upon the mate. The captain had, under these circumstances, been compelled to have recourse to a mode of punishment which he disliked as much as any man. The learned counsel then adverted to the circumstance, that the warrant was originally taken out against Captain Davis only; but when the men heard that Ray, the chief mate, would be brought forward as an evidence against them, fresh warrants were applied for, and Ray was included in them.

Henry Potter, the second mate, related the circumstances which occurred at Guayaquil, and said the men were not punished for their misconduct there at all. The men had been guilty of the most refractory conduct, and Crofts in particular had called him by the most infamous names. The men were all drunk except the carpenter when the boat was upset, and it was purposely caused by the two complainants, one of whom (Foley) struck the master of the *James Watt*, and behaved in a most disorderly and ruffianly manner.

Mr. Broderip said there was a great peculiarity about the manner in which the warrants were obtained, which was open to great censure. He had as strong objections to the degrading punishment of the cat-o'-nine-tails as any person could have; but he really could not see what other punishment the captain could have inflicted, after he had exhibited very great forbearance at Guayaquil, and called upon the authorities at Santander to interfere. The crew were as mutinous as any ship's company could be; and that was not the result of flogging, as it was clearly proved that there was no cat in the ship, and that the mate was obliged to make one after the men had capsized the boat and refused to scrape the masts. It did not appear from that that Captain Davis was a friend to flogging. He was of opinion this was not a case calling upon him to hold either of the defendants to bail; and he should dismiss the case, leaving the men to indict at the sessions or bring their action, as they might be advised.

Mr. Greenwood agreed with his colleague. More shuffling evidence he had never heard. He believed the men were in a state of open mutiny, and was surprised at the captain's long forbearance.

SYMINGTON'S WHEEL.

44, Burr Street, Sept. 15th, 1837.

MR. EDITOR,—I have observed the various articles from correspondents in your Journal against the Symington paddle-wheel, but refrained from answering them until able to produce the most convincing proof of the fallacy of their assertions, in an efficient steam vessel, fitted with a pair of such wheels properly constructed.

Being now possessed, not only of one, but of two, proofs of this kind, I have merely to invite those who take an interest in improving steam navigation, to come on board of the *Dragon*, or *William Symington*, and judge for themselves. A much better mode surely of arriving at an accurate conclusion than trusting to the criticisms of individuals, who, in attempting to decry the invention, have been obliged to confess their opinions were formed from mere hear-say evidence.

In the same spirit that this opportunity of proving or disproving the efficiency of the wheels is offered, I subjoin a few reports * in their favour, from parties who have ascertained their superiority; reports which, I hope, you will insert the more readily that I have not presumed to solicit a space in your valuable pages, until I could adduce something more decisive than theoretical conjecture.

Duly appreciating the liberal manner in which you have acted on this question, I remain, Sir, your most obedient humble servant,

ROBERT BOWIE.

P.S. I am authorized to say, that every facility will be afforded to those who may wish to see the wheel at work, on application being made at the office of the Symington Towing Company, 353, Hermitage, Wapping.

NEW WORKS, &c.

THE EASTERN SEAS; or, *Voyages and Adventures in the Indian Archipelago*, in 1832, 3, 4. &c., &c. By *George Windsor Earle*, M.R.A.S. Allen and Co., Leadenhall Street, 1837.

If we are tardy in our notice of Mr. Earle's narrative, it is not that we have disliked it, or found it tedious. On the contrary, we have followed him in his tour from Western Australia to Java, Batavia, Singapore, Siam, and Borneo, and his visits and re-visits to these places with much interest. He sees persons and things through a kind of favourable medium, and is in good humour with himself and every one he deals with: he picks up odd stories which lie in his path; puts up with hard fare, and harder *board*, as all travellers should do; and, by his cheerful and graphic descriptions, quickly gains the interest of his readers. We can with more satisfaction allude to his researches on the natural resources of the various places on the coasts which we have mentioned, and their historical relations, rather than to the small stock which he has contributed to our geographical knowledge; but we can assure those who are in search of information, on some of the principal islands of the Great Indian Archipelago, that they will find it in Mr. Earle's book.

* These reports being all highly in favour of the wheel, including one by Dr. Birkbeck, we consider it sufficient at present to state that they are so.—Ed. N.M.

TRAVELS IN CIRCASSIA, KRIM TARTARY, &c. *Including a Steam Voyage down the Danube, in 1836. By Edmund Spencer, Esq. In two volumes.* Colburn, London.

This may be looked on as one of the standard works of the day, the ground alone which the author has chosen, being sufficient to secure it respect. Mr. Spencer's steam voyages extended from Vienna down the Danube, through the Black Sea, Bosphorus, and Dardanelles, whence he returns, and makes his excursions into the Circassian dominions. In a future number we shall transfer some of Mr. Spencer's notes to our own pages. His descriptions are highly interesting, and the style of letters in which his observations are conveyed is familiar and pleasing: he gives fearful prognostications of Russian aggression, viewing every action of that powerful state with the most scrutinizing jealousy. These however are topics which we leave for parliamentary discussion; and in the mean time we cordially recommend Mr. Spencer's volumes to our readers, as a source of rich entertainment and valuable information, notwithstanding he has found fault with a statement of the Russian navy in a copy of our work, which he met with in a Russian vessel of war, without having stated that it was on French authority.

THE NATURALIST'S LIBRARY. *Conducted by Sir Wm. Jardine, Bart. Ornithology, Vol. VIII. By W. Swainson, Esq. S. Highley, 32, Fleet Street, London.*

This is another of those enticing little volumes, containing thirty-two elegantly executed plates of the birds of Western Africa, and forming the eighth volume of Ornithology. It is satisfactory to find so much useful and interesting information given to the world in so cheap, and yet so perfect, a form; and we are glad to find the labours attending such a work duly rewarded by the patronage it receives. To our nautical readers, we again repeat, here is a delightful little volume, well worthy your attention.

We have received Mr. Hale's pamphlet on electricity. The author has given proof of an acute and comprehensive understanding, and has evidently a mind well adapted to reason on scientific matters; but his deductions, although apparently true, and such as are quite warranted up to a certain point in electrical knowledge, are still, in the present state of it, fallacious. It would require the aid of diagrams to go into the theory of Mr. Hale, and we cannot afford space either for them or a protracted discussion; but we may briefly state his meaning to be, that, if one side of a coated glass be connected with the insulated rubber, and the other with the insulated prime conductor, of an electrical machine in action, there is no disposition in the rubber to take electricity from other bodies; the rubber, according to his view, being negative by the usual theory of electricity. This, no doubt, is true enough, so far as it shows no disposition to abstract electricity from any body brought near to it; but he does not seem to apprehend that it really is neutral on ordinary principles. Franklin has shown, that in accumulating electricity on one side of a coated plate of glass, an equal quantity is forced off by induction on the other; but whether there be electrical repulsion or not, the arguments advanced by Mr. Hale do not determine.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Commander, A. Reed. *Lieutenants*, W. B. Money Penny, J. T. H. Tracey, A. Lowe, W. A. Heseltine, W. W. Webster.

APPOINTMENTS.

Clerk, W. H. Norman. CALLIOPE.—Captain, C. Boyle. COAST GUARD.—Commanders, J. Gape, A. Baird; *Lieutenants*, G. Pooley, H. S. Smith, C. Goullet, J. H. Bellairs, G. Pooley, J. Ray, E. Baugh, H. S. Smith, L. Halliday. COMET, St. V.—*Assistant Surgeon*, G. F. Rowe. DOCK-YARDS; AT DEAL.—Commander, E. Boys, in charge. DONEGAL, 74.—*Flag Lieutenant*, E. Ommaney; *Lieutenant*, J. M. Langtry; *Mate*, J. O. Bathurst. EDINBURGH, 74.—*Lieutenants*, W. Hamley, W. Bough; *Mate*, J. C. Broges; *Midshipman*, H. Chads, B. Hawker. EXCELLENT.—*Mate*, G. H. Gardner, J. Mitchell; *Surgeon*, J. Urquhart. FAVOURITE, 18.—*Assistant Surgeon*, E. Davies. FEARLESS, St. V.—*Second Engineer*, additional I. Price. FORRESTER, 10.—*Second Master*, A. L. Panchin; *Assistant Surgeon*, J. McNicoll; *Clerk*, W. F. Bannerman. GREENWICH, *Out Pension*.—Commander, W. Burgess; *Hospital Assistant Surgeon*, J. Haig, M.D. HYACINTH, 18.—*Lieutenant*, W. H. Giffard; *Mate*, T. G. Drake; *Vol.*, S. Osborne. IMOGENE.—*Mate*, E. W. Lang. JUPITER.—*Master*, to command, Mr. R. Easto; *Second Master*, W. Langdon; *Master's Assistants*, E. Rowe, J. Hawkins; *Assistant Surgeon*, J. Aitcheson; *Clerk*, W. A. Hopkins. MADAGASCAR, 46.—*Clerk*, T. E. B. Robins. MELVILLE, 74.—*Mate*, A. Little; *Assistant Surgeon*, W. Bateman; *Midshipmen*, W. Lockyer, R. W. H. Alcock, E. Lyons, W. N. Lockyer; *Clerk*, R. Loney. MESSENGER, St. V.—*Master's Assistant*, S. Maddock; *Third Engineer*, J. Turner. PACKET AGENTS:—AT DOVER.—Commander, H. Boteler. PENINSULAR COMPANY'S PACKETS.—*Agents*, *Lieutenants* G. G. Miall, H. Tryon; *Ocean*, *Lieut.* Roepel. PIQUE, 36.—*Mate*, B. Collier. PRESIDENT, 46.—*Mate*, J. Morich; *Assistant Surgeon*, J. Rees; *Master's Assistant*, R. Reed; *Mate*, S. Morich; *Midshipman*, R. Patey; *Vol.*, G. Hitchins. RHADAMANTHUS, St. V.—*Lieutenant*, Hon. G. Hastings. ROYAL ADELAIDE, Yacht.—*Assistant Surgeon*, C. Taite. ROYAL GEORGE, Yacht.—*Mate*, G. H. Seymour. RAVEN, Sur. V.—*Mate*, A. C. Gladstone. SALAMANDER, St. V.—*Surgeon*, A. Bryson; *Boatswain*, G. Phillips. SCOUT, 10.—*Purser*, R. Mason. SEMAPHORE.—At Haslemore, *Lieutenant*, J. Poad. THUNDER, Sur. V.—*Lieutenant*, T. Smith; *Mates*, W. Mooney, R. Ellis, S. Maddock; *Clerk*, G. W. G. Robins. TYNE, 26.—*Lieutenants*, R. S. Robinson, J. West; *Surgeon*, J. Carmichael; *Second Master*, W. Moriarty; *Volunteers*, R. H. Dundas, T. T. Plomer. WELLESLEY, 74.—*Lieutenant*, Selim Mustafa, an Egyptian; *Chaplain*, Rev. H. Jones; *Clerk*, J. R. Tatc. VICTORY, 104.—*Master*, A. Thompson; *Clerk*, J. Colwell.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION TO 25th OCTOBER, 1837.

AT HOME.

African, Steam V., Capt. F. W. Beechey, surv. St. George's channel. *Alligator*, 28, Capt. Sir G. Bremer; 30th Sept. sailed from Portsmouth: 3rd Oct. arr. at Plymouth, fitting. *Andromache*, 28, Capt. H. D. Chads, C.B., paid off at Sheerness, 25th Sept. The Port Admiral, Sir Robert Otway, on inspecting her, passed some high encomiums on Capt. Chads and his officers, on the efficiency of the ship and the crew. In this ship the system of free leave on shore has worked well, and on paying her off, although it was given to the last, every man was sober, and no one attempted to leave the ship before the captain, who must have felt the high compliment of being rowed ashore by four gentlemen, mates of the *Andromache*, steered by the first lieutenant, amidst the hearty and honest cheers of his ship's company. *Lieut.* Archibald Reed, first lieutenant, has been promoted to the rank of commander, and Mr. Webster and Mr. Haseltine, mates of the *Andromache*, have been promoted to the rank of lieutenant. *Britannia*, 120, Capt. W. D. Dundas, Portsmouth harbour. *Cracker*, *Lieut.* Rochel, 13th October, at Jersey. *Crocodile*, 28, Capt. J. Foote, Plymouth, fitting. *Comet*, St. V. *Lieut.* Gordon, 28th Sept. left Plymouth for Spain. *Donegal*, 78, Capt. J. Drake, Plymouth, fitting. *Edinburgh*, 74, Capt. W. H. Henderson, Portsmouth, fitting. *Excellent*, Capt. T. Hastings, Portsmouth. *Fairy*, surv. vessel, Capt. W. Hewett, 25th Sept. left Sheerness to continue the survey of the North Sea. *Favourite*, 18, Com. Croker, Plymouth, fitting. *Forrester*, 3, *Lieut.* G. P. Rosenburgh, Plymouth, fitting. *Delight*, 10, *Lieut.* W. Lory, 27th Sept. left Plymouth for W. Indies. *Electra*, 18, 28th Sept. launched at Portsmouth. She was constructed by Professor Inman: her princi-

pal dimensions are as follows:—Length on deck, 113 ft. 3 in.; length for tonnage, 92 ft. 11 in.; breadth extreme, 30 ft. 10 in.; depth in hold, 8 ft. 1 in.; burthen in tons 462. *Hyacinth*, Com. L. Warren, at Spithead. *Jupiter*, Mr. R. Easto, 25th Sept. paid off and re-commissioned at Portsmouth. *Lily*, 16, 28th Sept. launched at Pembroke. *Medea*, Steam V., Com. Austen, arr. from Mediterranean; 3rd Oct. paid off at Woolwich, in a most efficient state as a steamer of war. *Melville*, 74, Capt. Hon. R. S. Dundas, Portsmouth, fitting. *Nautilus*, 10, Lieut. Croke, 25th Sept. paid off at Portsmouth. *Pantaloon*, 30th Sept. sailed from Plymouth, for north coast of Spain. *President*, 52, Capt. J. Scott, Portsmouth, fitting. *Raven*, surv. vessel, Lieut. G. Bedford, 8th Oct. sailed for coast of Africa. *Rhadamanthus*, St. V., Com. A. Wakefield, left Plymouth for Mediterranean, 6th Oct. *Thunder*, Lieut. B. Allen, Portsmouth, fitting for W. India survey. *Tyne*, 28, Capt. J. Townshend, Portsmouth, fitting. *Vestal*, 28, Capt. W. Jones, 25th Sept. paid off at Sheerness: We understand that Captain Jones has received an elegant sword of the value of 200 guineas, brought home in the Skylark, as a present from the Captain-General of the Havana, for his services in quelling the riotous proceedings in the island of Cuba. *Victory*, 104, Capt. T. Searle, Portsmouth, fitting. *Wellesly*, 74, Capt. J. Maitland, Flag R. Admiral, Sir F. Maitland, 28th left Portsmouth for Plymouth: 12th Oct. sailed for East Indies.

ABROAD.

Actaon, 26, Capt. Lord E. Russell, 16th June, left Callao for Valparaiso. *Basilisk*, Lieut. Mc Donnell, 17th June, left Valparaiso for Callao. *Beagle*, surv. vessel, Com. Wickham, 17th Aug. arr. Bahia; 25th sailed for Cape. *Bellerophon*, 80, Capt. S. Jackson, 4th Sept. arr. at Malta from Tunis; 13th Sept. remained. *Belvidera*, 42, Capt. Strong, 12th Aug. at Vera Cruz on her way to England. *Blonde*, 46, Commodore Mason, left Valparaiso for England, 4th July. *Camelion*, 10, Lieut. T. Bradley, 18th Sept. arr. at Lisbon. *Carysfort*, 26, Capt. H. B. Martin, 27th August left Constantinople for Marmora; 7th Sept. returned. *Castor*, 36, Capt. E. Collier, 20th Aug. arr. at Malta; 27th sailed for Corfu. *Champion*, 18, Com. G. King, 24th Aug. arr. at St. John's, and 12th Sept. arr. at Quebec. *Cleopatra*, 26, Capt. Hon. G. Grey, 11th June at Callao. *Comus*, 18, Hon. P. Carey, 1st Sept. arr. at Jamaica from Halifax. *Confiance*, St. V., Lieut. Arlett, 13th Sept. arr. at Malta, from Smyrna. *Conway*, 28, Capt. C. R. Drinkwater, 16th June left Madras for Trincomalee. *Curlew*, 10, Com. Lieut. E. Norcott, 24th August at Ascension. *Dolphin*, 3, Lieut. T. L. Roberts, 24th August at Ascension. *Fair Rosamond*, 2, Lieut. W. B. Oliver, 17th July at Sierra Leone. *Gannet*, 16, Com. W. G. Whish, 28th July at Barbadoes. *Hastings*, 74, Capt. H. Shifner, flag ship, 15th Sept. in the Tagus. *Harlequin*, 16, Com. Erskine, 4th Oct. at Gibraltar. *Harrier*, 5th April at Islay, 30th May at Arica. *Hercules*, 74, Capt. M. F. Berkley, 6th Sept. arr. at Lisbon; 18th remained. *Hermes*, St. V. Lieut. W. S. Blount, 2nd Sept. at Malta. *Hornet*, 6, Lieut.

27th Sept. left Falmouth for West Indies: *Inconstant*, 36, Capt. D. Pring, 6th Sept. arr. at Lisbon. *Malabar*, 74, Capt. Sir W. A. Montagu, 15th Sept. in the Tagus. *Minden*, 74, Capt. A. R. Sharpe, 15th Sept. in Tagus. *Orestes*, 18, Com. Newell, 27th Sept. at Gibraltar; 4th Oct. remained. *Pearl*, 20, Com. Lord C. Paget, 13th Aug. at Madeira. *Pelorus*, 16, Com. E. Harding, 25th June, arr. at Mauritius from Portsmouth. *Phoenix*, St. V. Com. W. Henderson, 2nd Oct. at Passages. *Pembroke*, 74, Capt. F. Moresby, 23rd Sept. sailed from Cork for Malta; 4th Oct. off Lisbon. *Pelorus*, 18, Com. F. Harding, 25th June arrived at Mauritius. *Pickle*, Lieut. Haste, 15th Aug. left Jamaica for Carthagena; returned 6th Sept. sailed on a cruise. *Princess Charlotte*, 104, flag of Admiral Hon. Sir R. Stopford, 10th Sept. arrived at Malta. *Pylades*, 18, Com. W. L. Castle, 27th May arr. at Mauritius from Cape. *Rapid*, 10, Hon. Lieutenant Kinnaird, 10th Sept. arr. at Malta; 22nd Oct. to Malta, from Tunis. *Racer*, 16, Com. Hope, 16th Aug. 12th Aug. arr. at Jamaica with two prizes; left Jamaica for Chagres: 8th Sept. returned to Jamaica. *Rattlesnake*, 28, Com. W. Hobson, 18th May left Sydney for New Zealand. *Ringdove*, 16, Com. Nixon, 26th Aug. left Halifax for West Indies. *Rodney*, 92, Capt. H. Parker, 10th Sept. arr. at Malta. *Russell*, Capt. Sir W. Dillon, 26th Aug. arr. at Athens. *Salamander*, St. V., Com. S. Dacres, 2nd October at Passages. *Samarang*, 28, Capt. W. Broughton, 8th July at Buenos Ayres. *Savage*, 10, Lieut. Hon. E. Curzon, 7th Oct. at Oporto. *Scout*, 18, Com. Hon. R. Craige, 2nd Aug. at St. Helena. *Scylla*, Com. Hon. J. Denman, 7th Oct. at Oporto. *Seringapatam*, 46, Capt. I. Leith, 12th Aug. arr. at Nassau with the Romney. *Snake*, 16, Com. A. Milne, 7th Sept. arr. at Port Royal. *Sparrow*, 10, Lieut. R. Lowcay, 5th Sept. arr. at Teneriffe. *Sparrowhawk*, 16, Com. I. Shepherd, 6th Aug. arr. at Rio. *Tribune*, 24, Capt. I. Tomkinson, 17th Sept. at

Smyrna, *Terror*, Capt. G. Back, Oct. left Lough Swilly. *Vanguard*, 84, Capt., Sir T. Fellowes, 10th Sept. arr. at Malta. *Wanderer*, 16, Com. T. Bushby, 3rd Aug. left Jamaica on a cruize. *Winchester*, 52, Capt. E. Sparshot, 13th June, arr. at Madras: 18th remained; going to Calcutta. *Wizard*, 10, Com. E. L. Harvey, 27th Aug. arr. at Bahia.

Births.

On the 4th Oct., at the residence of Captain Clavell, Chatham dock-yard, Mrs. W. Simpson Blount, wife of Lieut. Blount, commanding her Majesty's steamer *Hermes*, of a son.

On the 19th Oct., at Waddon Lodge, the lady of J. C. Schetky, Esq., of Addiscombe, of a daughter.

At Swan River, Australia, the lady of Captain Sir J. Sterling, of a son.

On the 17th Oct., the lady of Lieut. R. Holman, R.N., of a daughter.

On the 4th Oct., at Malta, the lady of George Thorn, Esq., Purser of H.M.S. *Bellerophon*, of a son.

On the 27th Oct., at Cheltenham, the lady of Norwich Duff, Esq., Captain R.N., of a son.

At Manheim, Baden, the lady of Captain Rowland Mainwaring, R.N., of Whitmore, Staffordshire, of a son.

On the 14th Oct., at Lee Terrace, the Lady of Captain Hewett, of H.M.S. *Fairy*, of a daughter.

Marriages.

At Kingston, on the 17th Oct., by the Rev. J. F. Stewart, Mr. J. Bragg, R.N., to Miss S. Hyde, of Gloucester Street, Portsea.

Lieut. T. T. Fowke, R.N., son of the late Rear-Admiral Fowke, of Sible Hedingham, to Margeretta, daughter of G. Nottidge, Esq., of Castle Hedingham, Essex.

At Alverstoke, by the Rev. C. B. Rosenberg, George Johnstone, Esq., Surgeon, H.M.S. *Britannia*, to Agnes Elizabeth Milne, eldest daughter of James Henderson, Esq., of Haslar hospital.

At Stoke church, Plymouth, John Ingle, Esq., Lower Durnford Street, Stonehouse, to Sophia Browell, fourth daughter of Rear-Admiral Curry, C.B. Belmont Place, Stoke.

At Donagh, R. Ramsay, Esq., Lieut. R.N., to Anne, daughter of F. O'Donnell, Esq., Cardonagh, Ireland.

On the 16th Oct., at St. Pancras church, John Ray, Esq., to Sarah, only daughter of the late Captain Richbell, R.N.

On the 23rd Sept., at Kingston church, Lieut. Richard Bastard, R.N., to Miss Bowyer, daughter of the late John Bowyer, Esq., Landport.

At Kingston, 5th Oct., by the Rev. J.

V. Stewart, Lieut. John Henry Norcock, R.N., to Jane Money, eldest daughter of Lieut. Lowcay, R.N., commanding H.M.C., Sparrow.

On the 28th July, at Llanidloes, N. Wales, by the Rev. John Davies, the Rev. George Fisher, of Greenwich Asylum, to Elizabeth Alicia Woosnam, only daughter of Bowen Woosnam, Esq., Llanidloes.

Deaths.

Lately, John Broughton, Esq., Rear-Admiral of the White, at the residence of his son-in-law, the Rev. F. A. Glover, Rector of Charlton, Dover.

Lately, at his residence in Piccadilly Terrace, Vice-Admiral J. R. D. Tolle-mache, aged 65.

In Wales, Rear-Admiral W. P. W. Parry, in his 71st year.

At Braziers, Oxford, Isaac George Manley, Esq., Admiral of the Red, aged 81.

On the 18th Oct., of consumption, at the residence of her mother, Mrs. Ross, 11, Somerset Place, Somerset House, Fanny Vincent Courtis, aged 32, eldest daughter of the late Captain Daniel Ross, R.N., and widow of the late John Theodore Rooney, Esq., late of Newry, Ireland.

At Gatchell House, near Taunton, 27th Sept., aged 69, Captain Webb Stone, late of the H. E. I. C. S., and many years an active and upright magistrate for the county of Somerset.

On the 17th Oct., at Amelia Row, Landport, Mr. William Briant, son of Captain Briant, R.N., aged 21 years.

At Cheltenham, Mary Ann, relict of Captain Flint, R.N., and sister of the late Sir Stamford Raffles.

Lately, Alice, youngest daughter of Captain Walker, R.N., of Bocking, Essex, aged 15.

At Lymington, John Forbes, Esq., late of the Navy Pay Office, aged 59.

On the 11th Sept., off Madeira, on board H.M.S. *Pearl*, Lieut. Edward Williams, R.N., aged 37 years. He was buried with military honours on the 13th, in the Protestant burial-ground of that island.

On the 27th Sept. last, at Walmer, Kent, Mary Fuller, the wife of Rear-Admiral E. W. Browne.

Lately, the infant son of Lieut. Spurring, R.N., of the Coast Guard, at this place.

Lately, at Colchester, Lieut. Edward Hallum, R.N., aged 73.

On the 1st June last, on board H.M.S. Columbine, off the Bonny River on the West Coast of Africa, Mr. A. Rolls, Master in the Royal Navy, in his 49th year.

At Ipswich, Lieut. Richard Carter, R.N., (1815.)

Lately, near Hull, Captain G. Acklom, R.N., (1812,) in his 66th year.

At Manchester, aged 34, Lieut. R. E. Martin, R.N.

Lately, Captain Cumby, C.B., Superintendent of Pembroke dock-yard.

At St. Colomb, Cornwall, Commander John Stokes, on the retired list.

At Twickenham, Michael, eldest son of Captain Houston Stewart, R.N., in his 17th year.

At Dublin, Captain Edward Whyte, R.N.

At Otterington Hall, Yorkshire, Captain J. G. Boss, R.N., late M.P. for Northallerton.

At Stebbing Park, Essex, Commander J. Smith, R.N., in his 70th year.

In the Old Kent Road, Richard Daly, M.D., Surgeon, R.N., aged 68.

METEOROLOGICAL REGISTER,

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

SEPTEMBER, 1837.

Month Day.	Week Day.	BAROMETER. In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	F.	In. Dec.	In. Dec.	°	°	°	°	S.W.	S.W.	2	3	Or 1)	Bcpl. (3)
2	S.	29.35	29.39	51	59	45	61	N.E.	N.	4	6	Or 2)	Qp (5)
3	Su.	29.43	29.50	55	60	47	60	W.	W.	3	3	Bcmp. (2)	Bcmp. (3)
4	M.	29.66	29.70	55	55	48	69	N.	N.W.	4	4	O.	Bc.
5	Tu.	29.90	29.92	52	58	50	59	E.	N.E.	4	3	Op 2)	Bc. (4)
6	W.	29.86	29.90	57	62	45	63	N.	N.	2	2	O.	Bc. (4)
7	Th.	30.04	30.02	51	62	44	64	S.	S.W.	5	6	B.	Qbc.
8	F.	29.94	29.89	58	66	48	68	S.	S.W.	5	6	Bc.	Qbc.
9	S.	29.93	29.95	56	62	54	64	N.	S.W.	1	1	Or. (2)	Bc.
10	Su.	29.87	29.78	62	69	55	70	S.	S.W.	3	4	Owd. 2)	Bcp. (4)
11	M.	29.91	29.96	59	65	53	67	W.	S.W.	4	5	Bc.	Bc. (4)
12	Tu.	29.76	29.66	62	64	52	66	S.W.	S.W.	5	5	Bc.	Bc. (4)
13	W.	29.66	29.56	54	62	51	63	S.E.	S.E.	2	2	Or. (1)	Bc.
14	Th.	29.19	29.15	60	65	52	66	S.W.	S.W.	3	5	Bcp (2)	Qbc.
15	F.	29.37	29.48	52	61	47	62	N.W.	W.	6	6	Qber 1)	Qbcp (3)
16	S.	29.63	29.80	50	58	43	60	W.	W.	3	2	B.	B.
17	Su.	30.00	29.97	54	61	46	62	S.	S.W.	2	4	Od. 2)	Bc.
18	M.	30.05	30.09	62	67	54	68	S.W.	S.W.	4	5	Bcm.	Bcm.
19	Tu.	30.03	30.03	66	64	62	67	S.W.	S.W.	4	5	O.	Od. 3)
20	W.	30.16	30.14	63	68	57	69	S.W.	S.W.	2	2	Bcm.	Bcm.
21	Th.	30.03	30.00	62	65	60	66	S.E.	E.	1	3	B.	B.
22	F.	29.92	29.98	60	64	52	66	N.E.	N.E.	4	4	Fbc	B.
23	S.	30.08	30.10	60	64	51	65	N.E.	N.E.	2	4	Fbc	B.
24	Su.	30.13	30.13	54	58	50	60	E.	E.	4	4	B.	B.
25	M.	30.20	30.25	52	54	42	55	E	E.	5	4	Bc.	B.
26	Tu.	30.31	30.32	48	56	44	58	N.E.	N.E.	4	4	B.	B.
27	W.	30.29	30.27	50	56	40	59	N.E.	N.E.	2	3	B.	B.
28	Th.	30.10	30.08	51	55	50	60	N.E.	N.E.	2	2	Fb	B.
29	F.	30.07	30.05	55	59	42	61	N.E.	N.E.	2	2	Bcm.	B.
30	S.	30.05	30.03	53	57	41	60	N.E.	N.E.	2	2	O.	B.
		29.98	29.94	49	64	43	67	E.	E.	2	2	B.	B.

SEPTEMBER.—Mean height of the Barometer=28.898 inches; Mean Temperature=56.2 degrees
Depth of Rain fallen=1.15 inches.

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

LONDON: T. STANLEY, PRINTER, WHEATSHEAF-YARD, FARRINGTON-STREET.

ORIGINAL PAPERS.

DECEMBER, 1837.

PACIFIC ISLANDS.

H.M.S., *Actæon*, Valparaiso, Feb. 4th, 1837.

MR. EDITOR,—Having just returned from a cruize among the South Sea Islands, I have much pleasure in affording a small portion of information for your useful Magazine: the positions given are all from actual observation, by

Yours, &c.,

G. BIDDLECOMBE, *Master R.N.*

[As we propose, in an early number, to insert the remarks of Mr. Biddlecombe, we shall then have an opportunity of comparing his observations with other authorities. But we may here observe, that "Raraka" and Maria Island, to which he alludes, are both already laid down in the charts. Ed. N.M.]

Resolution Bay, Island of St. Christina, (Marquesas,) watering-place, $9^{\circ} 55' 30''$ S. Longitude $4\text{h. } 28\text{m. } 46\text{sec.}$ W. of Valparaiso, by Chros. Lunars $138^{\circ} 50' 45''$ W. of Greenwich. Variation $3^{\circ} 45'$ E.

The whole of the MARQUESAS are laid down in the charts about fifteen miles west of their true position.

Fort at WOAHOO, lat. $21^{\circ} 18' 10''$ N. Long. $158^{\circ} 0' 40''$ W. of Greenwich. Variation $10^{\circ} 42'$ E.

FLINT'S ISLAND, lat. $11^{\circ} 20' 30''$ S. $151^{\circ} 53' 30''$ W. Variation $4^{\circ} 57'$ E.

MAURICE ISLAND, lat. $16^{\circ} 26' 30''$ S. $152^{\circ} 11' 48''$ W. Variation $6^{\circ} 55'$ E.

BOLABOLA ISLAND, lat. (north end) $16^{\circ} 27'$ S. $151^{\circ} 49'$ W.

TUBAI ISLAND, (north end,) lat. $16^{\circ} 11' 26''$ S. $151^{\circ} 52' 45''$ W.

OTAHA ISLAND, (north end,) lat. $16^{\circ} 33'$ S. Long. (west extreme) $151^{\circ} 38' 10''$ W.

ULIETEIA ISLAND, (south end,) lat. $16^{\circ} 55'$ S. Long. (west extreme) $151^{\circ} 25'$ W.

HUAHEINE ISLAND, (north end,) lat. $16^{\circ} 41'$ S. Long. (west extreme) $151^{\circ} 5' 47''$ W.

SIR CHARLES SAUNDER'S ISLAND, (its peak,) lat. $17^{\circ} 28' 40''$ S. Long. $150^{\circ} 43' 15''$ W.

EIMEO ISLAND, (north end,) lat. $17^{\circ} 27' 30''$ S. Long. (centre) $149^{\circ} 56'$ W.

THETHUROA ISLAND, (centre,) lat. $17^{\circ} 5'$ S. Long. $149^{\circ} 34'$ W.

ST. PAUL'S ISLAND, (west point,) lat. $19^{\circ} 46'$ S. Long. $145^{\circ} 5'$ W. East point, lat. $19^{\circ} 50'$ S. Long. $144^{\circ} 52'$ W.

MARGARET ISLAND, lat. $20^{\circ} 26'$ S. Long. (east end) $143^{\circ} 35'$ W.; (west end) $143^{\circ} 35'$ W.

DUKE OF GLOUCESTER'S ISLAND, (eastern island,) lat. $20^{\circ} 42'$ S. Long. $142^{\circ} 54'$ W. Western Island, $20^{\circ} 40'$ S. Long. $143^{\circ} 11' 20''$ W.

ACTÆON'S GROUP, discovered on the 3rd Jan., 1837. Three ENLARGED SERIES.—NO. 12.—VOL. I. 5 G

Islands: Melbourne Island, S. 1st, lat. $21^{\circ} 28' 30''$ S., and longitude $136^{\circ} 26' 46''$ W. Minto Island, its centre, in lat $21^{\circ} 23'$ S.; Long. $136^{\circ} 32'$ W. And Bedford Island, its N.W. point, in lat. $21^{\circ} 18' 30''$ S., and long. $136^{\circ} 37' 46''$ W.

PITCAIRN'S ISLAND, latitude of its northern part $25^{\circ} 3'$ S., and longitude of the village by chro. $130^{\circ} 9' 26''$ W.

I insert this information from Mr. T. Ebrill, the master of a merchant-vessel trading among the islands.

There is an island called, by the natives, Raraka, in latitude $15^{\circ} 52'$ S. Longitude $144^{\circ} 47'$ W., about four miles in extent.

Three low islands in lat. $16^{\circ} 45'$ S., and long. $144^{\circ} 15'$ W.

One island in lat. $16^{\circ} 5'$ S., and long. $139^{\circ} 41'$ W.; very low.

An island he landed on, and named it Maria Island, in lat. $22^{\circ} 5'$ S., and 136° W.; about four miles extent.

A shoal level with the water's edge, one hundred yards in extent; lies ninety miles E.N.E. of Gambia Island.

A Monieur Morone reports Bird Island in lat. $23^{\circ} 7'$ S. Long. $137^{\circ} 17'$ W.; it is not in that position, as we were precisely on the spot at 4 P.M., and nothing seen; yet it may be in that latitude.

He reports Michel Group, a group of seven low islands, in latitude $31^{\circ} 27'$ S. Long. $130^{\circ} 15'$ to $130^{\circ} 40\frac{1}{2}'$ W.

DIRECTIONS FOR PORT PHILLIP, *Southern Australia.*—By Captain W. Hobson, R.N., H.M.S. *Rattlesnake*.

IN approaching Port Phillip from the Westward, the entrance cannot be distinguished until Point Nepean bears N.N.E.; then you open Shortland's Bluff and obtain a view of the estuary. But the position of this entrance is easily determined by its situation, with respect to Mount Flinders to the Westward, and Arthur's Seat to the Eastward.

Mount Flinders is a small flat-topped hill, at the extremity of low land; it makes like an island, and bears W. $\frac{1}{2}$ N. from Point Nepean.

Arthur's seat is the highest land on the coast, westward of Western Port. From the southward, its N.W. extremity appears precipitous: it slopes to the S.E., and its summit bears from Point Nepean E. $\frac{1}{2}$ S.

Point Nepean, on the eastern side of the entrance, is situated at the extremity of a peninsula, which slopes gradually from the base of Arthur's Seat; at one-sixth of a mile N.W. by W. from the point is a low rocky islet, connected with the shore by a reef, which dries at low water: even in calm weather the sea breaks on it with considerable violence.

Point Lonsdale, on the western side, is a low point jutting out from a dark rocky cliff, from which a reef runs two cables' length to the eastward, and forms the southern extremity of a bay that terminates at Shortland's Bluff, to the northward.

To enter Port Phillip.

A fair wind, or a flood tide is indispensable.

With a fair wind, keep in mid-channel, between Point Nepean and Point Lonsdale, and steer in for Shortland's Bluff, until Point Nepean

bears S.E. by S., then shape a course as hereafter directed for the channel through which you mean to pass.

With a beating wind do not approach Point Lonsdale nearer than a quarter of a mile, and be careful to avoid a sunken rock, which lies N.W. by W., two cables' length from the rocky islet, off Point Nepean.

The soundings across the entrance are very irregular, varying in one cast from seven to twenty-four fathoms, and again suddenly shoaling to five or six. On the edge of the reef off Point Lonsdale, is a depth of five fathoms close to the rocks, and the same depth on the southern edge of the reef that extends from Point Nepean to the rocky islet.

The tide in the entrance runs with considerable force. In the height of the springs, the Prince George cutter could not make head against it, when going at the rate of seven knots: from its impetuosity, and the irregularity of the bottom, a rippling is created, which, in rough weather, would render it very unsafe for an undecked vessel to pass through, and presents to a stranger so much the appearance of breakers that it requires good nerve to venture on.

If the wind should be light, care must be taken to get into the fair way, before you come too near the reefs, as the flood tide sets across them towards the entrance of the port with great strength.

As the entrance is only contracted by projecting points, with a favourable tide or a fair wind you are soon within them, and then if you are desirous to anchor, a good berth may be found anywhere between Observatory Point and Point King, within half a mile of the shore, in seven fathoms, clay bottom.

When bound through the Western Channel, take care to avoid a little shoal, called the Pope's Eye, on which there is only twelve feet.

The following marks will place you exactly on it. Swan Point N. 1° E. (Magc.) Mount Eliza summit, on with north end of Flat Island.

If bound through the Western Channel.

Pass to the westward of Pope's Eye, by keeping Swan Point to the northward of N. $\frac{1}{2}$ E., until Shortland's Bluff bears W. $\frac{1}{2}$ S., and steer for the entrance of the channel which lies between a shoal that commences two cables' length to the northward of Swan Point, and the West Bank.

To clear the bank off Swan Point, keep Point Lonsdale just open with Shortland's Bluff, until Swan Point bears N. $\frac{1}{2}$ W.

The course then is N.N.E., and mid-channel will be preserved by keeping Point Nepean a finger's breadth* open with Swan Point. The

* This is the first time we have heard of "a finger's breadth," in navigation; "a sail's breadth," "a marlin spike's length," "a handspike's length," and even "a ship's length," being terms common enough, but all of them evidently vague and indefinite. A quarter, or half a point of the compass, is sometimes put in requisition; but neither of these may after all be so minute as a finger's breadth; and yet who will say they are not less, for it would puzzle Jack to squeeze the least of his digits into so small a space on the compass card. But it is evidently the angle that is desired to be expressed at a guess. Now some of our continental neighbours, the Danes, we believe, refer all this to the sun's diameter; rather minute perhaps, but by no means too much so, as it is very easily multiplied, and is, at all events, a constant quantity. We recommend our seamen not to be above taking a leaf out of our neighbour's log, and to accustom

soundings are from four fathoms in the centre, to a quarter less three at the sides, from which the banks shoal suddenly to five or six feet, and, in some places, dry at low water.

When Station Peak is seen over the north red cliff, bearing N. 72° W., you are clear to the northward of the banks, and will be in seven fathoms water.

In approaching from the northward, bring Point Nepean open with Swan Point, before the north red bank bears N. 72° W., and follow the leading marks.

In beating through you must be guided by the eye on the eastern side, when the shoals show themselves very distinctly; and take care not to shut the marks in standing to the westward; at all times it is advisable to keep a person aloft, whence the shoals may generally be distinguished. The tide runs from two to three knots per hour, and follows the direction of the channel.

To pass through the South Channel.

When fairly within the Port, keep along the south shore, at a mile distance, in nine or ten fathoms water until abreast of Point King; from which situation an E. by S. course, with very slight deviations, will carry you through. It is impossible to find any leading mark for a channel so long, and in some places so narrow, that is not more liable to perplex a stranger than to guide him; the only certain means of navigating it, until regularly buoyed, is by the eye from aloft; and when the weather is too hazy, to show the banks, it is not safe to go through.

The soundings in the south channel are very irregular, from sixteen fathoms to five, and close to the edge of the banks from that to three, two, and one fathom. Although the deepest water is to be found in this channel, it is not to be preferred by vessels drawing less than sixteen feet water; the absence of any leading mark, and its great length, being a serious objection.

The south sand that commences near Point King, forms the south side of the channel; its eastern end bears S.W. $\frac{1}{2}$ S. (Magc) from the White cliff, and to the eastward of that, deep water extends close to the shore.

The northern side of the channel is formed by the middle ground, the western end of which bears N. $\frac{1}{2}$ E. (Magc) from Point King, and extends seven miles eastward; when Station Peak is on with Indented Head, bearing N.W. by W., (Magc) and White Cliff S.W. by W $\frac{1}{2}$ W. you are clear of the middle ground, and may steer to the northward.

themselves to it, simply by practice in measuring with a quadrant or sextant a few small horizontal angles between defined points. By dividing them by thirty-two minutes, they will then have the number of semi-diameters. They will thus accustom the eye to the horizontal angle of one diameter, and enable it to arrive at a degree of exactness in course of time, so as to divide this into minuter portions; and we might possibly hereafter hear of Point Nepean at Port Phillip being kept a *diameter*, a *semi-diameter*, or even a *demi-semi-diameter*, open of Swan Point; the last being only eight minutes of a degree, or not an eighty-fourth part of a point of the compass, and, certainly, either something more or less than "*a finger's breadth!*" But we must by no means be supposed to be blaming Captain Hobson, for following an old established, but unsatisfactory rule. Ed. N.M.

Symonds Channel.

Symonds channel may be made available in northerly or N.W. winds when unable to fetch through the western channel, but it is not recommended for any but small vessels until it is buoyed.

The Pinnacle Channel is only suitable for small vessels. The deepest water will be found close along the edge of the great sand.

To pass clear of the shoals to the northward, keep Station Peak on with the extreme of Indented Head, and do not shoal the water under nine fathoms.

From the edge of the banks over the area of Port Phillip, to within a mile of the shore, there is deep water everywhere, with the exception of the Prince George Bank off Indented Head; and in running or beating towards Hobson Bay there is nothing to apprehend.

Hobson Bay is situated at the northern extremity of the Port, and is the principal anchorage within it. At present it is not very easily distinguished; but the site of a town is marked out on Point Gillibrand, which will hereafter denote its situation, and furnish good marks for anchoring. At present, the only direction I can furnish is, to steer in for Point Gillibrand, and pass it at two cables' length distance, taking care, in so doing, not to shoal the water under five fathoms; and to anchor when you bring Point Gillibrand to bear S.S.W. in four and a half fathoms water. Small vessels may bring it to bear south in two fathoms.

If you are bound into Geelong Harbour from sea, be careful to give a birth of at least two miles to Indented Head, to avoid the Prince George Bank; which extends from it in a N.E. direction. In rounding the shoal on the east and north sides, do not shoal the water under seven fathoms, until Point Richards bears W. by S.; you may then haul up for Point Henry. Do not approach the northern shore nearer than one mile; and in passing Point Wilson keep Point Henry to the westward of W. by S. (Magc.)

One mile east, or E. by S., from Point Henry, there is tolerable good anchorage.

It is to be regretted that on the bar at the head of Geelong Harbour you cannot ensure more than seven feet at high water. At a cable's length within the bar, there are five fathoms; and the depth may be carried close up to the shore. The rise and fall of tide does not exceed four feet in any part of the port; and more commonly it does not rise beyond two feet six inches on the springs. Both the time of high water, and the extent to which it rises, are greatly influenced by the wind. The force of the tide through the channels, leading to the northward from the mouth, may be estimated at from two to three miles per hour. In the south channel, it runs with less force; and in the wide expanse northward of the banks, it is scarcely perceptible. We have never been able to estimate the force of the tide in the entrance, except by the report of the captain of the Prince George revenue cutter. When it acquires its greatest strength, it is not safe for an open boat to venture out. But it is easy to conceive the rapidity with which it must run to raise the level of 875 square miles of water four feet, by means of so small an embouchure.

W. HOBSON, *Captain R.N.*

ATLANTIC STEAM NAVIGATION.

London, October, 1837.

MR. EDITOR,—A perusal of the account given in your number of this month, of the proceedings of the "British Association," on the subject of steam navigation, induces me to make some further observations on *sea-going steamers*. I am also prompted to do this by seeing, in the Nautical, the logs of the Hon. East India Company's ships, *Atalanta* and *Berenice*; as it appears to me, that there must be some gross mistake as to the consumption of fuel stated to have taken place on board them; and that Dr. Lardner has wanted some good practical information, which would have enabled him to have elucidated the subject (which he is so laudably anxious to do) better than he has succeeded in doing. Dr. Lardner has stated the extreme difficulty of obtaining correct information on matters of detail, from the proprietors of private steam vessels; and, although it may be admitted that such parties are naturally prone to give a too favourable colouring to the performances of their vessels, yet I cannot help being of opinion, that there are companies, and proprietors of steam vessels, of such character, as would have been most ready to have given him information, such as would have enabled him better to understand the real working of steam in "sea-going vessels" than he appears to do. His application to the Admiralty does not seem to have been attended with better success, as proved by the table of the performances of some of her Majesty's ships; the great difference which appears in that table having apparently so confused the learned Doctor, as to induce him to abandon all attempts to deduce any average of their performances, and to take the *Medea* as his *modulus*.

Dr. Lardner, having concluded, (see page 693, Nautical,) that the *Medea's* station, the Mediterranean, "might be taken as an average of Atlantic navigation, though perhaps worse;" let us adopt this statement, and regret his subsequent assumption, which I think we may fairly do, as theoretical, and not altogether sound, as to "the outward passage to New York, being twenty-five per cent. worse: let us take the ship he has chosen, and concluding that her performance is the *ne plus ultra*, to which steam navigation is at the present day perfected: let us assume, that a ship of equal qualities may do in the Atlantic what the *Medea* has accomplished in the Mediterranean. The table states, that one ton of coals per horse power propels that vessel 2,105 miles; consequently, $1\frac{1}{2}$ tons would carry her 3,157 $\frac{1}{2}$ miles, which is more by 157 $\frac{1}{2}$ miles than the distance from Cork to New York; and her power being stated at 220 horse, this would require 330 tons of coals; the Doctor having said she is capable of carrying 360 tons without being put out of trim. Here then is plain fact according to Dr. Lardner's own showing, that a ship, built according to Mr. Lang for sailing as well as steaming, can accomplish easily and without the aid of sail, that which the learned Doctor has pre-determined to argue cannot "be profitably effected," for to this he has come now; not that it is "as impossible as a voyage to the moon," but that it cannot be attended with "profitable results." Leave the matter of profit to those who are investing capital in such proceedings; they are better used to calculate "profitable results" than

the learned professor; and let him for the present take the opinion of one who has thought of and observed what is doing in steam navigation, and believe me when I say, that such are the important results *which must flow* from steam communication, that let it only be proved practicable, and we may safely conclude, that the proprietors must indeed have chosen a *bad station* if they do not reap abundant profit from applying this improved mode of communication with it. New York will hardly be considered a station of such description, seeing that art has been exerted to the utmost in producing the finest and most expensive sailing vessels in the world, to carry on the intercourse thus far. I will add that, as it is thus shown, by the statements of an authority bound in consistency to disbelieve it, that there exists a steamer capable of communicating with New York—that this steamer built expressly as a man of war, for sailing as well as steaming, may easily be so far improved on in important qualities *as to be surpassed immeasurably*; such as, in great length, very flat and long floor; just such beam *and no more* as will give stability with the *least possible dead weight*; the least depth consistent with room for the machinery; extreme sharpness forward, to divide the water without raising a wave; to be propelled *over* which, a great waste of power is continually in operation;—these are qualities to ensure to a “sea-going steamer” (and all others) the greatest advantages; the expenditure of coals having the least effect upon the draught of water of a ship of this form—a description of form, which, excepting probably good lines forward, I apprehend the Medea to be very far from possessing, as well as the new ship Gorgon, for her Majesty’s service, as given in page 700 of your work. In these men-of-war, their draught of water is too readily altered by expenditure of fuel, and which would have been more felt in the performance of the Medea, than it probably has been, had she not been furnished with Morgan’s paddle wheels, which dipping more, cause alteration in trim to be of less importance than with the common wheels.

A very important item, and which seems hardly ever to be alluded to in the discussion of this subject is, *the quality of the machinery*. There is such immense difference on this point, that it seems to me quite unaccountable, that steam proprietors generally should be so indifferent, perhaps ignorant, on this subject. The fact is, that until of late years, the great steam operations, with few exceptions, were carried on for coasting and very short sea voyages, and mostly from parts of England, where the cost of coals was not an object of first consideration, nor was the room occupied by them for such short trips, a matter of very great moment. But for “sea-going steamers,” when their supplies must be partly obtained at foreign ports, and these supplies enhanced in cost by being carried there in sailing vessels, the consumption of coals is an item of the very first importance; and, of consequence, the perfection of the machinery, which, the more perfect it be, of course the less will be the consumption of fuel.

I think it may safely be asserted, as a rule not to be controverted, that no expence in first cost ought for a moment to be considered, provided that the additional cost *procures corresponding improvements in the quality of the machinery*. It is surprising that this is not better understood: I know instances where a misplaced economy

has, under the idea of saving perhaps a couple of thousand pounds, entailed a *greater annual charge* in consumption of coals alone, for the whole duration of the ship; to say nothing of the inconvenience and loss of carrying so much more weight, and thus impeding the ship's way. The room which might otherwise be profitably occupied, the expence and delay of continually taking in so much more coal, the curtailing the extent of the voyage, the serious danger of the greater chance of breaking down, and the certainty of more frequent repairs being required, are other consequences of such bad economy.

It is truly astonishing that Dr. Lardner never seems to have perceived that *this is the real cause* which has prevented him coming to anything like a conclusion as to the average performance of steamers. How, indeed, can any conclusion be come at from comparison of the consumption of fuel, speed, &c., &c., of two steamers, perhaps of similar size, one of which has engines, nominally forty or fifty per cent. larger than the other, and a consumption of fuel to work inferior machinery of even greater disproportion? and then, should the vessel of inferior nominal power go even faster than the other, the question becomes still more confused. No wonder that Dr. Lardner felt puzzled: and upon the same ground may be accounted for, the curious table given us in the Nautical, page 693, of the comparative performances of some of her Majesty's steamers. These vessels, according to the said table, consuming coals from 8·3 lbs. per horse power to 10·9 lbs.; making a difference, on this head, of more than twenty-five per cent., and going at the rate, per each ton of coals consumed, from 5·13 to 7·9 knots; (the latter, the *Medea*;) causing above a difference of fifty per cent. in what Dr. Lardner terms "the duty of coals." How are such anomalies to be reconciled, but from the difference of the machinery principally, and next, from the total absence of any good principle in the construction of the ships; some of which, in her Majesty's service, are old sailing vessels, metamorphosed into steamers, though of forms in every way objectionable? How can any "duty" be assigned to coals under such circumstances?

In the next line of the table alluded to, showing the number of miles one ton of coals to each horse power took the ship, as it is but a multiplication of the former line by the nominal horse power, it appears to me to be erroneous; as the *Medea* is stated, just following the table, to be 220 horse power, which, multiplied by 7·9, = 1,738, instead of 2,105. This latter amount of the duty of the coals, if properly stated, is *more than twice* that which it appears to be in the *African*, in which vessel one ton of coals per horse power seems only to have propelled her 1,045 miles. The private steam vessel, "*Duchess of Sutherland*," is stated, in the same table, to consume 12½ lbs. of coals per hour; one ton to propel her 7·7 miles, and one ton per horse power (the power not given) 1,380 miles. I have obtained, from another private ship's performances, upon which I can rely, the following results: coals consumed per hour, 10½ lbs.; propelled by each ton, 10 and 7 tenth miles; and for each ton per horse power, 1,712 miles. How can any reasoning person come to anything like data, upon which to form even an opinion, from such statements, much less to lay down rules and principles? No; steam navigation is far, very far, from having attained that state to yield data on which to form any calculations on what is

going forward, so as to assign limits to what *may* be effected. It is even a very difficult matter to come at anything like a correct conclusion of a single ship's proceedings. A vast amount of error might attend even the most careful attempts at deciding anything upon partial or short trials. Difference in the quality of the coal, (which is very great; and I quite agree with Dr. Lardner, that Llangelloch are the best,) difference in the *degree* of honesty in the measure (or rather weight) of them, weather, stoppages, &c., &c.; and these may be so considerable that, although I believe the performance of the private ship above alluded to is the result of observation, during a period wherein she has run 30,000 miles, yet, that even with such means of forming an opinion, the result may be very far indeed from anything near what the same vessel is capable of doing; her proceedings having been, of course, materially affected by perhaps all the causes above enumerated as leading to error; to which number may be added, the extreme ignorance, stupidity, and consequent obstinacy of those who have the management of the fires, and the general direction of the engine-room.

The results which appear upon the logs of the *Atalanta* and *Berenice*, in respect to their consumption of fuel, leads to another remark or two. What is their nominal power, upon which results are obtained so far different from all other vessels? I find that 200 horse power for *Atalanta* brings out what is said to be her consumption of coals, and which is stated to be only $6\frac{1}{2}$ lbs. per horse power per hour; and one ton of coals per horse power gives its "duty" at 2,040 miles. The power of *Berenice* I am obliged to come at in the same way, (by inference,) and I make it 230 horse: consumption being stated at $7\frac{3}{4}$ lbs., and the duty of the ton of coals will amount to 2,160 miles. Now, I see in the advertising sheet of your Magazine, Mr. Editor, a print of this latter vessel advertised; wherein it is stated that she is of 246 horse power! which would reduce her consumption of coal per horse power even below the incredible small amount her log gives; and, if I am not very much mistaken, *Atalanta's* engines are more than two hundred horse, and which also would reduce her relative consumption below $6\frac{1}{2}$, by far the least amount ever heard of. It seems difficult to suppose errors where the quantity of coals consumed in the gross is given, the time of being under steam, and the distance run; but if there be no mistake, all I can say is, that they are the very best performances of steamers ever yet heard of; and I would recommend the makers of the machinery to favour the public with an authentic statement of success, which would undoubtedly redound so much to their credit and future profitable employment. In the mean time, I must entertain doubts upon such very extraordinary statements.

At the meeting alluded to, the Nautical reports Mr. Guppy to have stated, that the *Great Western* is to have four boilers apart, so that a man may pass betwixt them; thus, separately, they can not only be emptied, cooled, and thoroughly cleaned, but may even be repaired, and the engine not stopped. This is excellent, but must occupy much space; it is, however an arrangement well worthy the serious consideration of engineers; and if room cannot be afforded equal to what is done in the *Great Western*, if the boilers were separated ever so little, nay, even were they in contact, so as they were formed to cut off all

communication the one with the other, it would be an evident great advantage; for, in the event of one becoming damaged, the others would still be effective.

Dr. Lardner is stated to have expressed himself, in reference to Mr. Hall's condensers, not so as to be quite intelligible. Does he seriously mean to say, that to use with effect the condensed steam, after the manner adopted by Mr. Hall, an air pump is necessary to produce the necessary vacuum, and to draw up the water, of such size as forms any, and what drawback to the power of the engine, as compared with one condensing by injection?

In reply to an inquiry, by Mr. Collier, whether or not I have seen his boiler, I have to answer, no; but I have formed an opinion of it from drawings and description. At the same time, although I do not mean to question the advantages claimed for it, I admit that I have not given it that attention which it may merit, from an idea of mine that the application of steam to sea navigation, would require boilers probably not admitting of some of the advantages claimed for his invention. On this subject I intend to address you, Mr. Editor, on some future occasion; having, for the present, occupied as much of your space as I dare venture to believe you will think my communication worthy of.

I am Sir,

Your most obedient servant,

MERCATOR.

ROUGH NOTES ON THE ISLAND OF ASCENSION IN 1836.

SINCE the slight mention we made last month respecting the Island of Ascension, and the proposed change in its establishment, we have been favoured with the following notes on the Island, showing its capabilities, and what has been already done for their advancement:—

ASCENSION, before Napoleon was exiled to St. Helena, had been long known to the voyagers of the Atlantic as a barren volcanic island; barren even to the summits of its craters, which, once teeming with combustion, might have served them as beacons. Though ships, rolling down the south-east trade, frequently touched there for turtle, of which the shores afford an abundant supply, from the beginning of the month of January, to the end of June; it was not then imagined that any portion of the soil could be brought into sufficient cultivation to allow the formation of a settlement in so isolated a region. Such an experiment would never have been tried, had not England, for the better security of Europe's solitary prisoner, after long years of warfare, at St. Helena, thought it advisable to plant an outpost of observation at Ascension; and a small party detached from a British man-of-war formed the first establishment on that island in 1815.

Ascension is about twenty-five miles in circumference; though, from the inequalities of surface in the circuit of its cindery cliffs, this estimate might be considerably more than twice told by the wearied explorer. The lava within four miles of the sheltered roadstead, to leeward of the island, is in many places partially decomposed; but, showed only a

scanty herbage of purslane and euphorbium, scattered amidst fantastic formations of scoria. Craters here and there raise their towering heads in the blackness of desolation, only relieved by the arid pumice plains at their base; whilst, on every side, high cones of red cinders claim their origin in the blazing matter discharged from adjacent volcanoes, as scattered into air it descended in fiery hail; thus forming pyramids, to remain as mementos of departed power.

About four miles across such a district, brought the earlier settler to the principal drip of water then known on the island; a most precarious supply, first discovered by Dampier, in 1700. This precious deposit was found in a gorge, of what has since been denominated the Green Mountain; and here verdure may be said really to commence; the meagre herbage of the cinder plains scarcely deserving that appellation. The further the ascent was prosecuted, the greater field there appeared for cultivation; till, on arrival at the extreme height, 2,800 feet above the level of the sea, the rich soil seemed actually courting the exertions of the hand of man to rescue it from the rankness of vegetation.

Near this locality a house was built, and gardens laid out for the cultivation of vegetables; but little more was then effected on the island, except the erection of some scattered huts on the leeward shore, and the clearing of a few necessary roads. After the death of Napoleon, it being determined by the Admiralty Board, to make Ascension a depôt and place of refreshment for the use of the African squadron, a detachment from the corps of royal marines relieved the naval garrison in 1822. A year after this epoch in the annals of Ascension, a fever of the most virulent kind was unfortunately introduced on the island, by his Majesty's ship *Bann*, which, for awhile, suspended the exertions of the new settlers. Many women and children, the families of the soldiers, were by this time located there; the population altogether amounting to about one hundred and fifty souls; but sad to say, of these, more than a third were in a short space of time swept off by the exterminating pestilence. The crew of the man-of-war, whose encampment on the under plains, had caused this evil, suffered even in a greater proportion; and Ascension possessing a climate the salubrity of which was the theme of every visiter, became a lazaret-house of corruption.

The mountain alone escaped, the fever reached its base, and found several victims at Dampier Springs; but here was its course stayed; communication with the agricultural station being put under severe restriction, and all supplies of vegetables and fresh meat thence derived were placed at certain points of road, from whence they could be conveyed to the town without danger arising from the contact of parties engaged on this duty.

In a few months the fever, which was declared to be of the same character as that so fatal in our West India Islands, seemed to have expended its power; the tone of health in the settlement was restored, and the works once more progressed. The garrison now received gradual additions to its strength, till at length two hundred marines and about forty negroes were attached to the island. A pond, open to the flow of the tide, was formed to secure a constant supply of turtle for the shipping, without respect to season; many plants, shrubs, and trees, were introduced into the mountain, where the guinea-fowl, brought

from the coast of Africa, bred in great abundance; while flocks of wild goats, long naturalized to Ascension, gave recreation to the hunter, and moreover, in the form of excellent mutton, became a useful article of food. As yet, the habitations of the garrison had not improved with the general advancement of the establishment; but in 1829, orders arrived from England for the erection of regular buildings and fortifications.

The plans of these contemplated works were laid down by an intelligent and scientific officer of engineers, sent out for that purpose; and entrusted for execution to officers and artisans, selected from the marine corps. All that was then proposed has not been carried into effect, in consequence of that economy which the pressure of the times has called for in every department at home or abroad; but a commodious hospital, barracks for one hundred and fifty men, officers' quarters, and large victualling stores, together with regular fortifications, commanding the anchorage and approach to the town, have given the little settlement an imposing appearance, which its earlier inhabitants could not have imagined it would ever attain. Water, in the early days of the establishment, was so scarce that, on several occasions, it was necessarily landed from the shipping, for the use of the garrison, is now to be had in great abundance. A well, sunk twenty-four feet deep in the mountain, gives an average of three tons per diem: a tunnel, nine hundred and thirty-five feet in length, from the mouth of this supply, establishes a communication with several other drips or springs, all owing their origin to the percolation of rain through the soil; and four miles and a half of iron pipe is employed in conducting this water, through tanks sunk at intervals, to a reservoir regularly built in the town for its reception. Here, though granting to the full all demands of shipping, the island boasts a constant reserve of 1,200 tons.

At the agricultural station on the mountain, much has been effected by the small detachment which could be spared from other works. There the decomposition of volcanic matter is going on rapidly, and consequently producing a rich and productive soil; a large portion of which is cultivated with trees, shrubs, edible, and other plants. In this soil, mosses, grasses, heaths, and flowers, have also been carefully and successfully planted. The botany of Ascension boasts one hundred and seventy varieties. Among the more essential vegetables may be found balm, thyme, horehound, borage, potatoes, beet, parsnips, carrots, turnips, lettuce, endive, celery, mustard, parsley, fennel, radishes, sorrel, winter cherry or Cape gooseberry, arrow-root, horse-radish, water-cress, French beans, leeks, onions, shallots, artichokes, capsicums, cucumbers, pumpkins, tomatos, mushrooms, cabbages, &c., &c.

All these are of course more or less in abundance as the season proves propitious to their culture; and, unlike the periodical rains of the coast, the tropical showers at Ascension are too eccentric in their recurrence to allow of calculation; a peculiarity of climate which frequently involves the loss of crops. It is, however, fortunate that large tracts of land have been devoted to the cultivation of the sweet potato, which yields so plentifully that this vegetable may always be procured. Several other edible plants are equally to be depended on; and the garrison and shipping have for some years been readily provided with

refreshment of this nature. Many trees and shrubs are luxuriant in their growth on the island, but want of space forbids our particularizing them. The orchil, so useful as a dye, by the growth of which the Portuguese government draws so large a revenue from the Cape de Verde isles, is found at Ascension, and only wants culture to yield abundantly.

Some of the grasses are particularly fine, and afford grazing to numerous flocks of goats and sheep. There is as well a very good breed of horned cattle, horses, and donkeys on the island. Of these latter animals, a stallion was shipped in 1835 for New South Wales; having been purchased of the authorities for £25.

Returning from the mountain to the shore, the turtle and sea-fowl claim attention. Of the former, thousands may be taken in a season, weighing from five to seven cwt; and, though difficult to import into England alive, offer a profitable opening to any speculator who would support a small establishment at Ascension, for the purpose of preserving the fins and calliper in tin cases, hermetically sealed, as is practised with this and other meats in Europe. From some varieties of the sea-fowl also might be derived a source of trade, which could not fail of profit. The skin of these birds, when young and properly dressed, bring equal to the finest swan's down; and, even with the feather in full growth, presenting an appearance which would, if once introduced into England, render this commodity valuable as an article of female attire: at present it is only used on the island in the form of stuffing for beds.

These general statements respecting the Island of Ascension may be concluded with the gratifying observation that this development of its capabilities, during a period of twenty years, is the result of the exertions of a garrison never consisting of more than two hundred and fifty men; and which, for a considerable part of that time, amounted to less than one hundred. Such a result is at once a convincing and valuable proof to England of how much the small but reiterated work of perseverance may effect on an island which had long remained a barren and inhospitable speck on the ocean.

R. S.

PROFESSOR WHEWELL ON AUSTRALIAN TIDES.

Trinity College, Cambridge, Oct. 30, 1837.

MR. EDITOR,—I shall be obliged if you will allow me to make a few observations, in the Nautical Magazine, in reference to some speculations on the unexplored part of Australia, which Mr. Earl has inserted in his account of his voyages and travels in that country. He states several reasons which induce him to believe the existence of a sea, occupying a large portion of the interior of that continent, and opening into the Indian Ocean by a passage in the neighbourhood of Buccaneer's Archipelago. I shall not make any remarks on the other considerations alleged by Mr. Earl; but I will notice some arguments, which he derives from the phenomena of the tides upon those shores. He states that the rise and fall of the tide near Buccaneer's Archipelago is much greater than it is

along the rest of the coast ; (amounting to thirty-seven feet ;) and he conceives that this circumstance may arise from the communication between the internal and external seas taking place in that neighbourhood.

I remark, in the first place, that this supposed internal sea would not produce such an effect. The internal sea could not possess any independent tides, at least not any of perceptible magnitude, any more than the Caspian sea does ; and therefore the tides in the channel of communication could not be exaggerated by the meeting of two tides, as a consequence of the supposition. Any constant current, whether in a river or in a marine strait, would not increase the *rise* and *fall* of the tide, since it would affect high and low water equally ; and thus the hypothetical internal sea would not explain the large tides of the Buccaneer's Archipelago.

But I remark further, that these tides can be sufficiently accounted for (at least according to the analogy of the tides in other places) from other known causes. According to the general chart of the cotidal lines, which I published in the Philosophical Transactions in 1833, it appears that the tides on the north side of Australia travel from east to west, while those on the west side of that continent, probably, at least, travel from south to north ; and thus the two tide waves would meet somewhere in the north-west quarter of the coast ; and, so far as can be judged from the lines drawn in my map, the place of meeting must be very near the position of the Buccaneer's Archipelago. And we know that such a meeting of tides may very much increase their amount within a very short range of coast. Such cases we have in the Irish Channel, opposite the north part of the coast of Lancashire ; also, in the straits of Singapore, as remarked by Mr. Earl ; and probably the same is the reason of the remarkable high tides on the east coast of Patagonia, opposite to the Falkland Isles ; for a tide appears to come along the coast round Cape Horn, besides the general tide of the Atlantic.

I may observe, moreover, that even when there are no such meetings of two tides, we have many instances of exaggerated tides, arising, it would seem, from the form of the coast, and causing very great differences in the rise and fall of the tides within such superficial distances. I need only refer to the well-known cases of the Bay of Fundy, the Bay of St. Malo, the Bristol Channel, and many other places. In the Irish Channel we have a strong instance how much this difference of tides in adjacent places depends upon the position, as well as upon the form, of the coast ; for the tide on the coast of Wales, about St. David's Head, rises twenty or thirty feet, while, on the opposite coast of Ireland, the rise is not more than two or three feet in many places. Such instances are very curious ; and connected observations made along lines of coasts when they occur, by those persons, naval men or others, who may have the opportunity of making such, would be very interesting.

I will only add that though I cannot assent to Mr. Earl's argument respecting the tides, I have read with great interest his speculations on the interior of Australia ; and also that I see in his statements respecting the tides of the Indian Ocean, abundant reason to desire that the tides of that region should be more fully observed and studied than they have yet been. Coasts so varied in position, form, and connexion, cannot fail to prove full of instruction ; but nothing of value can be

collected except the *times* of high water as well as the heights, are observed several days at each place.

I am, dear sir,
Yours very faithfully,
W. WHEWELL.

VOYAGE OF THE COLONIAL SCHOONER ISABELLA.—*In search of the Survivors of the Charles Eaton.*

(Concluded from p. 760.)

THE next day, Mr. Lewis had another conversation respecting the massacre, with a large party who were assembled round him and Ireland: the latter interpreted, as usual, what they had to say. They gave him to understand that the heads of the "white people," who had been murdered at *Boydan*, were in a state of preservation at the huts at *Aureed*; and that the Indians every night and morning danced round them, and expressed their delight by yelling and hooting, and displaying the most horrid gestures; but repeated the oft-told tale, that there were no survivors, and confirmed the story he had previously heard from Ireland, that the Murray Islanders had seen the heads of Sexton and George D'Oyly at one of the islands, and that the hair of one of them had been so much admired that the Indians had cut it off and made it into an ornament. They told him the name of the Indian who murdered Mrs. D'Oyly, was *Cut-Cut*, a very large powerful man. Little George D'Oyly's murderer was named *Māām*, and Sexton's, *Ab-ōō-yōu*.* They also described these three savages so particularly that Ireland easily recognized them.† And that the murderers had eaten the eyes and cheeks of their victims, to excite them to the deed; but this was generally done, whenever any fell in battle or are murdered. The children are also made to partake of this disgusting food, in order to make them "*brave*," (i. e. ferocious.)

Mr. Lewis now determined upon proceeding to *Aureed*, to recover the heads of his unfortunate countrymen. In describing the situation of *Aureed*, they pointed to the S. W. by S., and gave him to understand that it could not be mistaken, since it was the only island that had cocoa-nuts on it; from which he anticipated that the search would be rendered comparatively easy. According to the Murray Islanders, he thought it might be Double Island, but he now found that it is much nearer to *Aroob*; and probably one of the group situated to the north of Halfway Island. By a tempting offer of axes some of them consented to go with him to the island; but when the time came, and the point was pressed, they declined.

During the *Isabella's* detention at Darnley Island, the crew had daily communication with the Indians, without any rupture or even the

* Ireland informed me, that the name of the Indian who endeavoured to murder him was called *Bis-kea*, and that *Maroose*, who spared Sexton's life, *Ooni-ooni*, and *Mal-goor*, were also of the party: he does not recollect the other names.—P. P. K.

† *Maam* resided on an island nearer to New Guinea than *Jarmuth*, but *Ab-oo-you* belonged to *Jarmuth*; Ireland had never seen these natives, but had frequently heard of them.—P. P. K.

least misunderstanding; notwithstanding which, Mr. Lewis had much reason to doubt the sincerity of their professions of friendship, for they were evidently impatient that the schooner should sail. Several canoes had left the island in the direction of *Aureed*, and there was reason to suppose they contained the very people of whom he was in search, and had probably been concealed until the weather permitted them to sail. Upon inquiry whether they had gone to *Aureed*, they answered, No! but they were gone to an island called *Pooram*, situated near *Aureed*. Some days previously, however, a canoe had gone in the same direction, which they said was returning home to *Aureed*, in expectation of the Isabella's visit, with the intention of piling up large heaps of tortoise-shell, as a propitiation for their brutal conduct, and that their lives might be spared.

On the 20th Mr. Lewis again took leave, when he repeated his hope, that they would never injure or ill-treat any white person who might be cast away upon the island, and was again and again promised they would attend to his wishes.* They stated that all the people who had been hitherto murdered, had been destroyed by their fathers, and not by any now living; alluding of course to the murder of the Hormuzeer's boat's crew.†

Upon going away the Indians were all seated in a circle, when one took Mr. Lewis by the arm and led him round the party, to shake or rather scrape each other by the hand, and to receive an affectionate embrace. The latitude of the centre of Darnley Island was found by Mr. Lewis to be $9^{\circ} 34' 25''$.

The Isabella sailed on the 21st July, and proceeded towards Nepean (Attagore) and Stephen (Hoogar) islands. On the latter, several Indians were observed, making signals and invitations to land, but they passed on without noticing them. There were no natives on Campbell Island, (Jarmuth,)‡ but a few huts were seen, in a small bay, fenced in. The course was now held to the S.S.W. At 1h. 10m., when York Island (Cabbican) bore S.E. by E., and Dalrymple Island (supposed to be Tood) west, a shoal, about a quarter of a mile in extent, was observed, situated about four miles off the E.N.E. end of the latter island, trending nearly E. and W. Proceeding, they saw another shoal, of a long and narrow shape,—three quarters of a mile long and one hundred yards wide,—which bore from the schooner E.N.E. three or four miles, at which time Darnley Island bore E. by N., Campbell Island N.E. by E., and York Island S.E. $\frac{1}{2}$ S. Afterwards, a third shoal was seen close to the vessel; Marsden Island bearing S.E. by S., and York Island east; the depth being fifteen fathoms, soft bottom.

The anchor was dropped in the evening, in fourteen fathoms under the lee of Marsden Island,§ its centre being S.E.

* Ireland, however, thinks that no great dependance can be placed upon their promises, for even were they inclined to protect them, the Indians of the *Aureed* group would attack them to obtain their skulls. He thinks, however, that the Murray Islanders would take great care of them for the sake of "torres," and trade.—P.P.K.

† See Appendix.

‡ Or Japcar.—Lewis's MSS.

§ Ireland informed me that the Indian name for Marsden Island, is "Sirreb." Mr. Lewis, however, understood it to be "Oucan." It was at Sirreb that Ireland was taken, on his way from Boydan to Darnley Island. It contains a spring of water in the centre, which is collected in a hole dug by the Indians.—P. P. K.

Ireland recognized some of the islands, particularly Keat's Island; where he recollected having seen some of the skulls of his shipmates exhibited by the natives, and thought it probable that there were still some on the island. He had remained some time there, on his way to Murray Island, and found the natives by no means friendly to him.

As it blew very hard the following day, (22nd,) and as the anchorage was very secure, Mr. Lewis remained, and took the opportunity of examining Marsden Island. In the chart it is laid down as two islands, surrounded by a reef, but it proved to be only one. At noon, an observed latitude made the beach at the north end, in $9^{\circ} 42' S.$, which is three and a half miles to the north of the position assigned to it on the chart. Between Keat's Island and Marsden Island, also between York Island and Keat's Island, the passages appeared to be clear for a large ship.

Finding no inhabitants or dwellings on Marsden Island, they pulled over to Keat's Island, which is formed by two islets, the northernmost called Massied, or Massieb, and the southernmost, Cuderal, surrounded and connected by a reef; and landed, at half-past three o'clock, on Massied. This island had many cocoa-nuts on it; and, according to Ireland, is always inhabited: for they cultivate cocoa-nuts and the banana, and there is a spring of water in the centre of the island. On landing, the Indians came forward to trade, bringing cocoa-nuts, a small quantity of tortoise-shell, and some shells of little value, in exchange for which some empty bottles (tarpoor) were given.

These Indians are of the same character as those of Murray and Darnley Islands, and speak the same language. Ireland understood everything they said, and was therefore enabled to communicate with them without difficulty. He first demanded the white men, to which they replied they had none; and on being asked what had been done with the "white skulls," they denied having them in their possession; they had only been brought by the Indians of Aureed, to show to them, but had been taken away again. Mr. Lewis, however, not feeling satisfied with their answers, ordered eighteen men out of the boats, armed with muskets, and fixed bayonets, and cutlasses, and then having them in his power, peremptorily demanded the skulls; but as they were much frightened and produced none, it was thought probable that their story was correct. They also stated that the natives of Aureed had left their island, having heard that the schooner was on her way to punish them for the murder they had committed; that all the white men had been murdered, and that some of the skulls had been sent to New Guinea. During this parley the Indians were shouting loudly for assistance from their friends, but the boats' crews were too strong for them. After some time, finding that no satisfactory intelligence was obtained, room was made for them to pass; upon which they scampered off with great rapidity. Two of the seamen very improperly fired their muskets over their heads; which, however, did not injure them, and served only to increase the rapidity of their flight.

These islanders told them that their principal food was cocoa-nuts and yams, and that they were frequently robbed of them by the Indians of other islands. On Mr. Lewis wading across to the southernmost island, the Indians who were there escaped in their canoes, and steered to the W.S.W. A strict search was made all over the island, but no remains of Europeans were found. The party then returned on board.

The next morning being fine, and the wind moderate, the schooner proceeded; and when Marsden Island bore N.E. by E. and Keat's Island E. $\frac{1}{2}$ S., a sandy reef and a dry key on it, about three quarters of a mile in length, trending north and south, bore S. by E. $\frac{1}{2}$ E. two miles. As she passed Rennel Island, some Indians were observed on it, also a canoe on the beach. The channels between the islands were very clear of reefs, and the soundings from fourteen to seventeen fathoms. At noon, an observation made the latitude $9^{\circ} 47' S.$, when Marsden Island bore N. $\frac{1}{2}$ E., York Island N.E. $\frac{3}{4}$ E., Arden Island W.N.W., and a small island, which was incorrectly supposed to be Aureed, bore S.W. by S. The anchor was dropped in the afternoon under the north-west end of the last, at half a mile off; when a boat visited the shore, but found no trace of what they were in search of. A few deserted sheds, used probably when fishing, were the only marks of its ever being visited by the Indians. Several birds, viz., pigeons, quails, and rails, were flushed; and an immense number of rats were seen. The trees were principally swamp-oak, and a fig; and a species of vine also, and some creeping plants, were noticed. Mr. Lewis carved his name and the nature of his mission on one of the trees.

At this anchorage they found themselves surrounded with numerous islands. The latitude of the anchorage is $9^{\circ} 53' S.$; Arden Island bore N.W. by W., Keat's Island N.E. $\frac{1}{2}$ N., and Marsden Island N. by E. $\frac{1}{2}$ E., and a sandy isle over the one under which they anchored bore S.E. The islands around were called by Mr. Lewis Sir Richard Bourke's Group, in compliment to his excellency the governor of New South Wales. One bore E. by N. $\frac{1}{2}$ N. ten miles, another south nine miles, and another east nine miles; besides many others which were too indistinctly seen to be distinguished. The chart bore no resemblance to them; and there was not sufficient time to lay them down. A very strong tide was observed, running three miles and a half an hour.

The next morning, (25th,) the schooner got underweigh, and worked to windward towards an island, which, having cocoa-nuts on it, and being very low, answered to the description given of Aureed by the Murray islanders. At a quarter before twelve the anchor was dropped under it, the centre bearing S.E. by S. three quarters of a mile; and the extremes E. by N. and S. by W. At noon the latitude was found by observation to be $9^{\circ} 56' 7'' S.$, Marsden Island bearing N. by E., Arden Island W.N.W., and the small island near the last anchorage N. by E.—(? N $\frac{1}{2}$ E.) A low island was also seen, at the distance of eleven miles, bearing N.E.

Several dogs were noticed howling on the beach, but no Indians showed themselves. Mr. Lewis then caused the boats to be manned and armed, and to proceed to the shore; and, having landed, walked towards the cocoa-nut trees near the centre, where he fully expected to find the inhabitants or their dwellings; but after a diligent search neither were found. However, perceiving another group of trees at a distance, he proceeded thither, and discovered a low thatched shed, containing the long-searched-for heads. They were attached by a piece of European rope to a grotesque representation of a man's face, formed by turtle-shell, and ornamented with cowries and other shells. Several of the skulls had evidently belonged to Indians, but many were of

European origin, and bore marks of violence; some few having the hair dirven into indentations made by blows with a tomahawk.

In order not to mutilate or destroy this figure, Mr. Lewis caused the shed to be unroofed, and then carefully removed it to the boat. Whilst one party was doing this, another proceeded to make a diligent search through the island: at a short distance, they came to a circular spot, planted with tobacco, which they destroyed. Several trees bore the recent marks of a tomahawk. Searching farther, they discovered what under other circumstances might have been considered a very romantic spot, shaded by large trees, which the Indians probably used to celebrate their infernal orgies; for an avenue led to it from the skull-house, both sides of which were ornamented with shells stained with ochre: in the centre of this spot was a pile of drinking cups, made of the cocoa-nut shell cut in half. As there were no marks of any recent feast, it is probable that the island is only used as a depository of skulls. Mr. Lewis was now satisfied that he had found the identical Aureed; and therefore, by way of showing his anger at the horrid deed they had committed, destroyed everything that could be useful to the Indians: the skull-house was burned down, and the fire raged over the whole island, and burned down some huts at the north-east end, which had been examined previously, but only a club, a sort of bird-cage, and a few pieces of deck-plank were found in them. The following day was spent in destroying all the cocoa-nuts, and cutting down the other trees, and doing all the mischief they could. It will take some time for the cocoa-nuts to grow up again, but the other plants will very speedily re-appear.

After another search, a sheet of copper and an eye-bolt, and near the ruins of the shed, two more European skulls were found, the last were a little scorched with the fire, but they were taken on board and deposited with the others in a case.

Leaving Aureed, the schooner proceeded and stood to the E.N.E. towards another island, but as there were no Indians on it, Mr. Lewis did not land. It was evident, that the object of the schooner's visit was known throughout the group, since every island was deserted by the inhabitants as she approached, for fear of being punished; for it is probable that the Indians of all the group are more or less implicated in the brutal transaction. At noon, the latitude being $9^{\circ} 55' 32''$ S., Skull Island, or Aureed, bore W. $\frac{1}{2}$ S. two miles off; the low sand isle, above-mentioned, E. $\frac{1}{2}$ N.; another islet, N. by W.; and a sand bank, S.E. about eight miles off. In the evening, the schooner was anchored at three-quarters of a mile off the N.W. side of Half-way Island, from which Aureed, bore N. by W. $\frac{1}{2}$ W. twelve or fourteen miles.

Having landed, the island was examined, but nothing worth notice was found, excepting the marks of former visitors, and some natives' fishing huts, at the N.E. end. Some culinary seeds were sowed in many parts of the island; and a letter, corked up in a bottle, was buried in the ground, under a remarkable tree on which the words "dig under" were carved. The letter contained an account of what had been done.

Here an immense specimen of the *chama gigas* was found: to take it on board, it was slung to an oar, but six of the boat's crew could not lift it, so they were obliged to roll it to the boat.

The next day (29th) they proceeded and anchored on the north side

of Mount Adolphus Island, at a mile off shore; and the next day arrived at Double Island, on which some Indians were observed, waving, and as usual calling out "poud, poud." As soon as the vessel was anchored, Mr. Lewis communicated with them, but could obtain no account of any white people. He thought they spoke the same language as the Murray Islanders, but as Ireland could understand but few words, he supposed they were more connected with the Aureed Indians. The canoes were similar in shape to those of Murray Island, but of much smaller size.

On the beach some planks and a vessel's mizen-mast were found, but the ship to which they belonged must have been wrecked many years since. The plank was teak. The mast was cut up for firewood, for it was useless for any other purpose, being rent in every part and much decayed.

The next day (31st) the ship *Thomas Harrison*, (Harrison, master) from Sydney, bound to Java, having left the former place fifteen days, passed by. Mr. Lewis went on board and communicated with her. By this vessel, he heard that one of the Honourable Company's cruisers had been dispatched from Bombay, to search for the survivors of Charles Eaton, and consequently must be in some part of the strait. Mr. Lewis gave a memorandum of the particulars of his voyage, which the master promised to publish at Java. During the absence of the boat, on board the *Thomas Harrison*, another vessel arrived, which proved to be the Company's cruiser, the *Tigris*, commanded by Captain Igglesdon; who informed Mr. Lewis that he had received the letter, which had been left with Duppar at Murray Island, and had also found the one that had been buried at Half-way Island, which had informed him of everything that had transpired. The surgeon of the *Tigris* visited the *Isabella* with Captain Igglesdon, and examined the skulls; seventeen of which he was satisfied were the heads of Europeans.

It was now arranged that both vessels should proceed to Raffles Bay for water, calling in their way at Wednesday Island. At the anchorage off Double Island, very strong tides were experienced.

The following morning (August 2nd) the *Tigris* and *Isabella* anchored on the north side of Wednesday Island, near a reef. Whilst Mr. Lewis was sounding it, a group of about twenty Indians appeared on the beach hallooing and waving boughs, and inviting him to land; which he did, and found them principally to be females. One of them, an elderly women, told him that she had then with her ten daughters besides more children in the bush. He made the old lady a present of handkerchiefs, and also one to each of the rest, and then returned on board. Captain Igglesdon's people also had a friendly interview with them, and made them some presents, which gained their good-will.

In the afternoon, Captain Igglesdon accompanied Mr. Lewis, with three armed boats, to the head of the bay, where the Indians lived, and found six canoes on the beach, and a large number of Indians standing around their huts, whose appearance was not of the most friendly complexion. However, after a short interview, they separated without a quarrel. It was with some difficulty that they could obtain an answer to their question respecting the existence of any white men amongst them; but after a little they told the interpreter that they knew of none. Mr. Lewis gave them a few presents, for which, in

return, they presented them some mother-of-pearl. At a short distance from the beach, Mr. Lewis found a heap of sea-elephant bones, collected in the form of a grave.

Not having succeeded in eliciting any information from these Indians they returned on board; and the next day, proceeded onwards and arrived off Booby Island, where Captain Igglesdon sent on shore and brought off some documents announcing the safe passage through the Strait of several merchant vessels.

At about thirteen or fourteen miles from Booby Island bearing E. $\frac{1}{2}$ N., two shoals were passed, which Mr. Lewis named, "Lewis Western Fields"—the depth between them was nine fathoms; breakers were perceived on the southernmost reef.*

The vessels crossed the Gulf of Carpentaria, steering a W. $\frac{1}{2}$ S. course; and on the 5th passed round Cape Wessel, off which much discoloured water was observed, which they passed round, and had not less water than thirty-five fathoms: the Cape, by Mr. Lewis' observation for the latitude, appeared to be laid down several miles too far to the northward†.

The next afternoon, they passed round New Year's Island; and between two shoals to the north of Oxley Island, not laid down on the chart. Mr. Lewis called them, "Trekenny Shoals." Mr. Lewis thinks that Oxley Island is laid down too far to the eastward‡.

At seven o'clock, standing towards Cape Croker, Mr. Lewis was suddenly alarmed by observing minute guns fired from the Tigris, which was three miles a-head. Of course the Isabella was immediately hauled up and anchored; and on Mr. Lewis going to the Tigris, he found she had grounded on a small patch off the Cape. By the time he arrived to her assistance, she had got off into two and a half fathoms, with the loss of her false keel and rudder, and having injured the stern post. Happily no other damage was sustained. At ten o'clock, she was brought to an anchor in nine fathoms, and rode heavily the remainder of the night; the Isabella had also a very uneasy berth from the heavy swell, caused by the tide setting to windward.

The next day, 7th August, being near Raffles Bay, both vessels got

* Captain Igglesdon also mentions these shoals in his journal; but I think if they existed they would long ago have proved fatal, as they lie in the direct route of ships; and I have three times passed close to, if not over, the spot without observing the difference even of a quarter of a fathom in the sounding. The surface of the sea hereabouts, and particularly where the water is shoal, is much occupied by fish spawn; whereby a resemblance to a sandy shoal is formed, and so much like one that the most experienced eye might easily be deceived. Had I charted every spot of light coloured water resembling a shoal that I saw, the space between New Holland and the Eastern Archipelago would have been thickly studded with imaginary dangers. The appearance of breakers may have been caused by the larger fish preying upon the spawn or "young fry." Appearances never ought to be depended upon without sounding.—P. P. K.

† The position of Cape Wessel's extreme, I consider to be well-placed; for I had a very good meridinal observation for its latitude, made by three different observers, only differing half a mile: the Cape bearing at the time N. 79° E., five miles. I do not think the error, if any, can be more than half a mile. Three times I have passed round the Cape, and through the coloured water—it is caused by the mud being stirred up from the bottom by the tides, which set at more than three miles an hour. I am satisfied that no shoal exists off the Cape.—P. P. K.

‡ If Oxley Island is placed too far to the eastward, then New Year's Island and Cape Croker, and all neighbouring places must be equally incorrect.—P. P. K.

under weigh and proceeded thither, where a new rudder was made by the assistance of the Isabella's carpenter. The Tigris and the Isabella anchored off the old settlement, and had several interviews with the natives, particularly *Wellington* and *Waterloo*, who cut a very distinguished figure in Dr. Wilson's narrative of his visit to the Bay, previous to its being abandoned; but by Mr. Lewis's account they did not conduct themselves in the amicable light that one would have expected, after having experienced the benefits of civilization. They evidently appeared jealous of the visit, and feared that the vessels had arrived to take possession again of the country. Mr. Lewis found the settlement much destroyed; indeed, scarcely a vestige was left by which it could be distinguished. During their stay several robberies were committed by the natives.

Having sailed from Raffles Bay, the ships reached Coepang on the 24th, where they separated, and the Isabella sailed on the 28th for Sydney.

On the 30th, being in latitude $14^{\circ} 27'$ and longitude $119^{\circ} 29'$ a shoal with high breakers was seen, bearing from the schooner S.S.E. sixteen miles.* The trade-wind ceased in latitude 18° south and longitude 115° east; and after an interval of light southerly winds, a strong southerly gale set in, which impeded their rounding Cape Leewiu, and which they did not effect without suffering some very severe weather.

On the 5th of October, the Isabella entered Bass Strait; passing round the north end of King Island, and arrived at Sydney on the 12th, having been absent nineteen weeks and three days.

It now only remains to say that the skulls of the unfortunate crew and passengers of the *Charles Eaton* were interred in a grave in the burial-ground at Sydney, which may afford some consolation to their friends. A list of the crew and passengers is subjoined. The fate of *George D'Oyley* and *Sexton* is still in some remote degree uncertain. Every pains and trouble seem to have been taken to ascertain the certainty of their fate; and Mr. Lewis has no doubt of the fact. Had either been alive, the desire of possessing the valuable iron implements which were offered in exchange for them, would have insured their being brought forward by the Indians; and their not having done so, is a more than presumptive proof of their not being in existence. The same story of their having been murdered was told throughout the islands without prevarication, together with the names of the murderers, as well as the circumstance of the hair of young *D'Oyley* having been preserved as an ornamental trophy.

LEVEL OF THE SEA.

AT the late meeting of the British Association, the following observations were made by Professor Whewell. After eulogizing the communication of Mr. Lubbock on the tides, Professor Whewell proceeded to the question more immediately before him;—the proceedings of the committee appointed to fix the relative level of the land and sea, with a view to ascertain its permanence, or the contrary.

* The shoal must therefore be in $14^{\circ} 41'$ S. and $119^{\circ} 22'$ E.—P. P. K.

He observed, that "the committee had not taken any active practical steps for the important purposes for which they were appointed, because they had met with many unexpected difficulties requiring much consideration. It was, however, intended to appoint a committee for the same purposes, who should be furnished with instructions founded upon the views at which the former committee had by their labours and experience arrived. One method proposed was, that marks should be made along various parts of the coast, which marks should be referred to the level of the sea; but here the inquiry met us in the very outset, What is the proper and precise notion to be attached to the phrase the *level of the sea*? Was it high water-mark or low water-mark? Was it at the level of the mean tide, which recent researches seemed to establish? In hydrographical subjects the level of the sea was taken from low water; and this, although in many respects inconvenient, could not yet be dispensed with, for many reasons, one of which we might glance at;—that, by its adoption, shoals which were dry at low water, were capable of being represented upon the maps as well as the land."

The second method proposed, appeared to the learned Professor to be the one from which the most important and conclusive results were to be expected. It consisted in accurately levelling, by land survey, lines in various directions, and by permanently fixing in various places numerous marks of similar levels at the time; by the aid of these marks, at future periods, it could be ascertained whether or not the levels, in particular places, had or had not changed, and thus the question would be settled whether or not the land in particular localities was rising or falling. Still further, by running on those lines, which would have some resemblance to the isothermal lines of Humboldt, as far as the sea coast, and marking their extremities along the coast, a solution would at length be obtained to that most important practical question—what is the proper or permanent level of the sea at a given place?

Until something like this were accomplished, the learned Professor expressed his strong conviction of the hopelessness of expecting anything like accuracy in many important and even practical cases. As an example, he supposed the question to be the altitude of Dunbury Hill,* referred to the level of the sea: "If the level of the sea were taken at Bristol†, where the tide rises, as before stated, fifty feet, the level of low water would differ from the same level on the coast at Devonshire, where the sea rises, say eighteen feet; and supposing, as is most probable, the place of mean tide to be the true permanent level by no less a quantity than sixteen feet, which would therefore make that hill to appear sixteen feet higher, upon a hydrographical map, constructed by a person taking his level from the coast of Devonshire, than it would appear upon the map of an engineer taking his level at Bristol. In the method proposed, the lines of equal level would run, supposing from Bristol to Ilfracombe in one direction, and from Bristol to Lyme Regis in the other, and by these a common standard of level would soon be obtained for the entire coast."

* Probably Dundry Hill was meant.

† Query, Kingroad.

THE HURRICANE OF THE 29th OF NOVEMBER, 1836.

WE have the following additional particulars of this storm, given by Mr. W. H. White, in his Meteorological Retrospect for 1836.* He says—"The violent gusts of wind, chiefly from the N.W., did much damage, leaving many a sad memento behind, both by land and sea.

"From the most authentic accounts of this gale which have reached me, it appears that it commenced † on the 23rd, on the eastern shores of North America, off St. Lawrence. A ship from Poole fell in with it on the 26th, in lat. 47° N. long. 32°. 20'. W, and was thrown on her beam ends. It continued its progress across the Atlantic, and reached the Land's End about 7½ A.M.; Plymouth, 8½ A.M.; Exeter, 9½ A.M.; Weymouth, 10 A.M.; Poole 10½ A.M.; Farnham, at noon; London, 1½ P.M.; Suffolk coast, 2½ P.M.; and Hamburg, at 6, P.M.

"Thus the storm travelled at the rate of about fifty miles per hour; but the circular motion of the wind had a velocity of from 120 to 150 miles per hour. The fury of the gale was most felt on the coast of France and Belgium. At Ostend there was scarcely a house which was not unroofed; and so great was the demand for tiles, that they rose from sixteen to thirty florins per 1,000.

"The motion of the mercury in the barometer, during the most violent part of the hurricane, attracted great attention. On the morning of the 29th, at nine, the mercury stood at 29.30 in.; it soon afterwards began to sink very rapidly, exhibiting much agitation during the violent gusts of wind for which this hurricane was particularly remarkable, till twelve at noon, when it stood at 28.82 in. At 2 P.M. the barometer had risen to 29.35. Soon after which the wind lulled into almost a calm."

ON VENTILATING THE HOLDS OF SHIPS.

THE vitiated air in the pump-well of a ship, may be completely removed by letting down an air trunk from the main-deck into the fore-hold, as near to the galley as may be found convenient. The air trunk to be carried along either or both wings immediately under the beams, and turned into the pump-well, a connexion being formed between the upper end of the air trunk, and the ash-pit of the copper-hole. The doors of the copper-hole and ash-pit being shut, it is evident that the air requisite for the support of the fire must be drawn from the pump-well by means of the air-trunk, and the air in the pump-well, consequently that in the hold will be changed in a time proportionate to the strength of the fire.

This mode of ventilation, may be applied with great advantage to men-of-war, transports, passage-ships, and at a very moderate expense, and the fittings even for a line of battle ship could not exceed £30. The cook's fire does the rest. The foregoing might also be worth the attention of those concerned in the China trade, it being generally allowed, that tea deteriorates much on ship-board; and no person who has seen the effects of what is called *the sweating of the hold* in warm

* Loudon's Magazine.

† Probably first noticed, authentically.

latitudes, can have any doubt on the subject. I would therefore suggest that a separate stove be used for the hold alone, and kept going twelve hours out of the twenty-four. Cast-iron stoves are cheap enough, and six or seven tons of coal would be ample allowance for the passage home. The cargo assuredly would come to market in a much better state, and repay the trifling expence incurred.

The stove may be of the common square form, with the addition of a double square back, the outer one provided with a short projecting tube or nozzle of five or six inches to receive the funnel, or connexion between the air trunk and the stove; the inner back to be four inches from the outer one, and that part of it below the level of the furnace bars cut away, to admit of the fire being supplied with air from beneath. If an ash drawer is used, as is generally the case, it must go home to the outer back, otherwise it will intercept the passage of the air to the fire.

The stove for the object in view, admits of various modes of construction, perhaps the one pointed out is as simple as any.

X.

DESCRIPTION OF A LIFE BUOY, *constructed by T. J. Grant, Esq., Storekeeper of the Royal Clarence Yard at Gosport.*

THE form of the life buoy partakes of a spheroid and cylinder together, forming an air-tight vessel, containing about 7000 cubic inches of air. The buoyant portion of the buoy is internally divided into four compartments, that, in the event of injury occurring from a blow, there may still remain sufficient buoyancy in the other divisions to support one person in the interior, and also two persons holding on by the exterior of it.

The buoy is calculated to afford much greater security to the seaman in the hour of peril than the one constructed on the old principle; as an upright or sitting position can be retained in the interior of it, whereby he is protected from the constant immersion which he is subjected to when on the buoy hitherto in use.

The seaman can retain his position in the new buoy for a much longer period than he can by holding on by the outside of the old buoy, particularly if much exhausted from previous exertion used in swimming; whereby he remains in comparative safety till further assistance is rendered him from the ship, and he is perfectly secured from the attack of sharks.

The new buoy is of sufficient buoyancy to support two persons in the inside of it, and three persons holding on from the outside. It also drifts considerably less in rough weather, or in a heavy sea, than the present one, the action of the counterpoise in the water keeping it nearly stationary.

The size of the new buoy is 27 inches by 22 inches diameter, and 29 inches deep; but it may be materially reduced if protection is required only for one person in the interior of it; in which case it need not occupy more space, nor would it exceed the weight or cost of the buoy hitherto used.

Mr. Grant's contrivance for letting go the buoy from the stern of the

vessel differs from the method hitherto adopted, inasmuch as the lock for igniting the fuse must of necessity be fired before the buoy is disengaged from the ship.

Reference to the Plate. (No. XII.)

Fig. 1—Represents the buoy in section when suspended at the stern of the ship.

Fig. 2—Is a drawing of the buoy with its rods and vane counterpoise.

Fig. 3—The contrivance for firing the lock and disengaging the buoy from the ship. On pulling the handle *a* the lock is fired, which brings the stop *b* in contact with the box *c*, which contains a spiral spring, to which also is attached a stop; this stop acts on a lever *d*, which disengages the ring *e*, which suspends the buoy on the joint of the lever.

EXPLANATION OF A COMMON GUN LOCK, ALTERED TO SERVE AS A PERCUSSION LOCK.

By Lieut. Jerningham, R.N. (Pl. XII.)

LIEUTENANT JERNINGHAM, of her Majesty's ship Excellent, has lately introduced a method of altering a common gun lock to serve as a percussion lock; the plan he has adopted is extremely simple in arrangement, and, at the same time, highly ingenious.

The advantages which this lock will have, are its economy, its facility of being fitted by any ship's armourer, and its readiness to be used as a *flint lock*, in cases of any accident happening to the detonating tubes, as it may be fitted to all flint gun locks, under the expense of a shilling. A detonating hammer, of a crooked form, *a* fig. 4, is fitted to the common ship gun lock, and made to strike close to the vent without danger of accident from the discharge. It can be replaced by a flint in the space of twenty seconds, when the lock appears precisely the same as any other flint lock, and can again be fixed in the same time. This hammer is placed between the jaws of the cock, into which it is firmly fixed by a screw, and is hollowed out underneath to receive the jaw screw; the upper part is made convex to receive the concavity of the upper jaw.

The face of the hammer, *b* fig. 5, has two sharp edges, instead of a flat surface.

Most ship gun-locks have a space between the pan and vent patch, of about one eighth of an inch, which if decreased to about one twelfth, the arm of the tube may be confined close down to the vent patch, and will offer a more solid resistance to the hammer, and consequently receive a sharper blow than if allowed to lay loose. An additional improvement is made to secure the arm of the tube more effectually, which will render it unnecessary to look over the vent to place the arm of the tube fair for the hammer to strike it, by placing a small shoulder or pin, *c* fig. 4, under the pan, which prevents the arm turning any further than is required. The tubes are made of coarse cannon powder, instead of meal powder, and spirits of wine. The explosion from this description of tube is instantaneous.

Judging from the result of the various experiments that have been made with a view of ascertaining the efficiency of the lock in question, the alteration as proposed is likely to prove of material advantage to her Majesty's service.

Fig. 2.

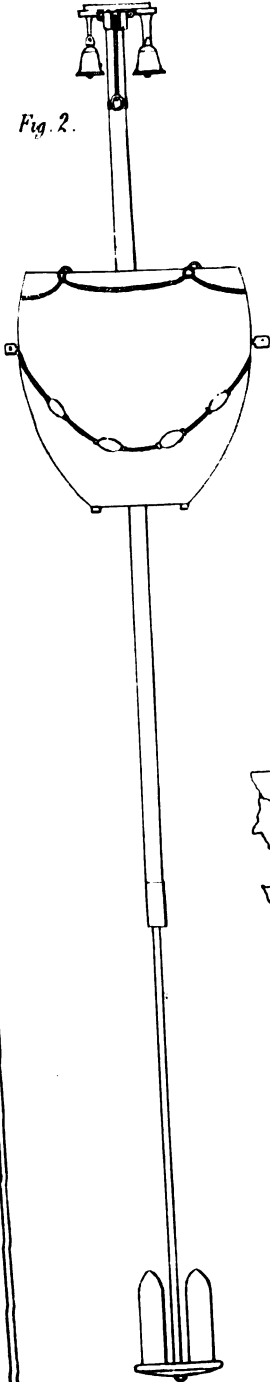


Fig. 1.

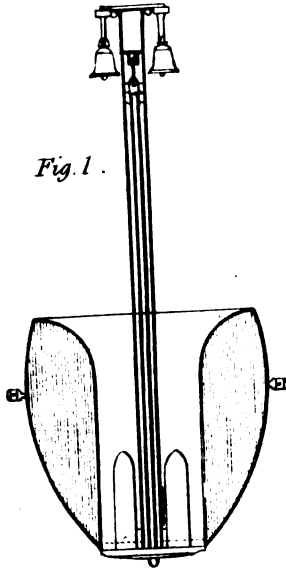


Fig.

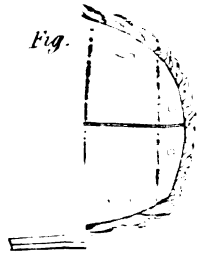


Fig. 4.

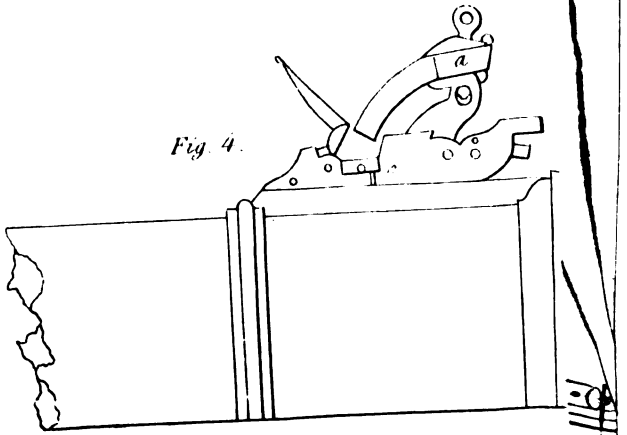
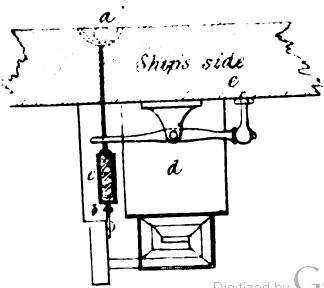


Fig. 3.



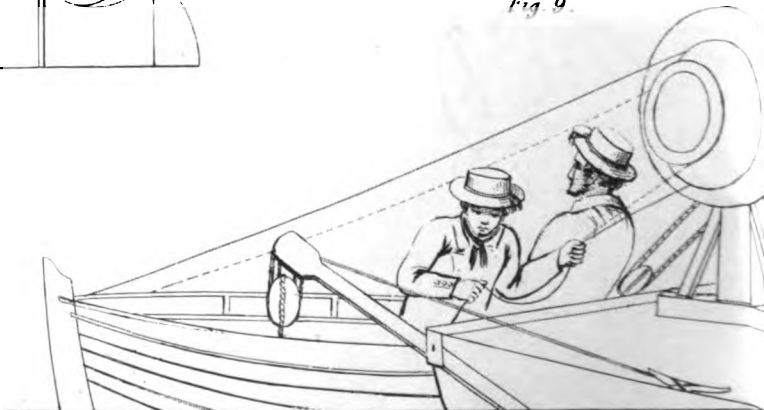
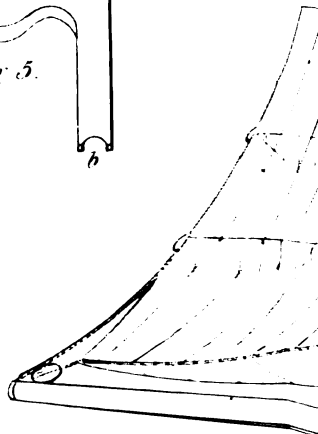
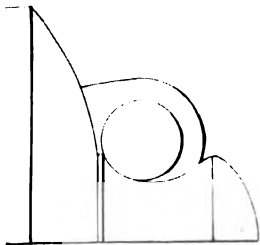
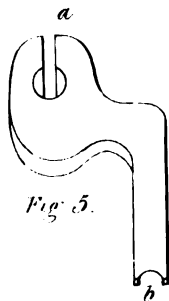
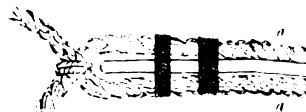
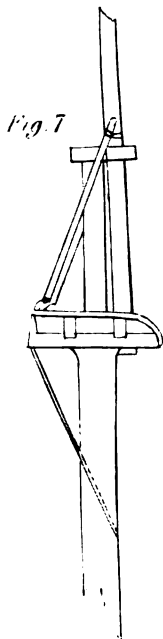
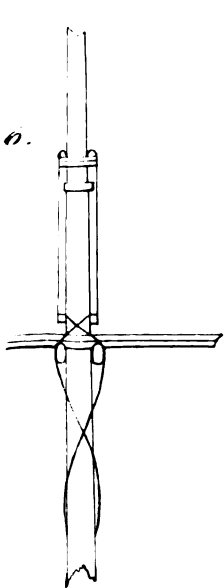
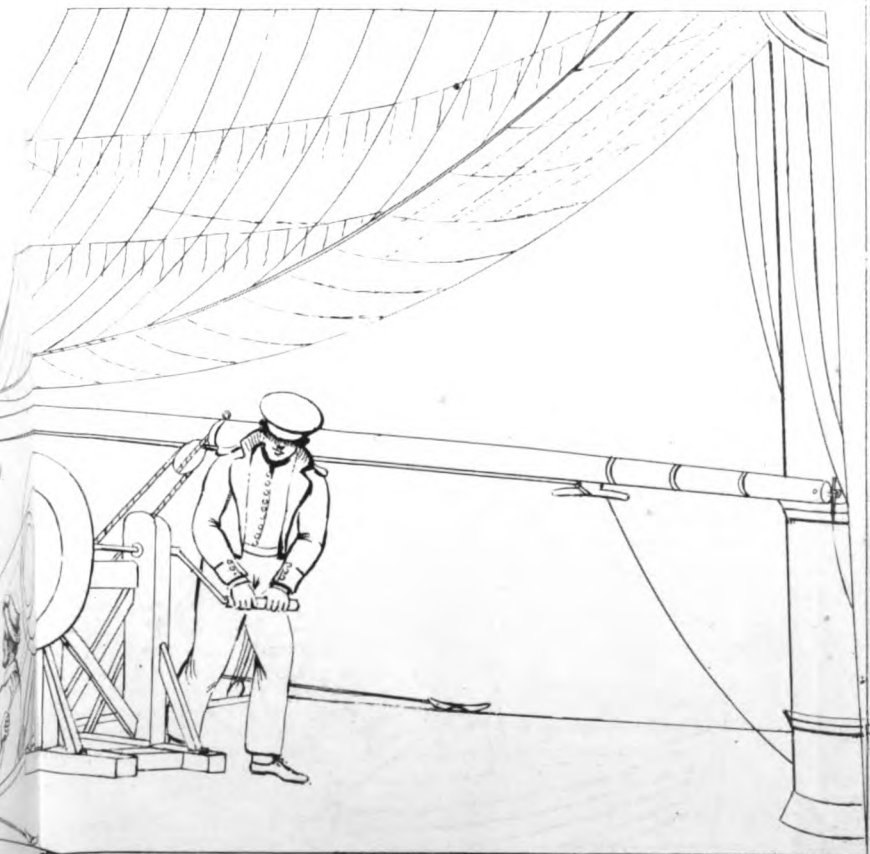
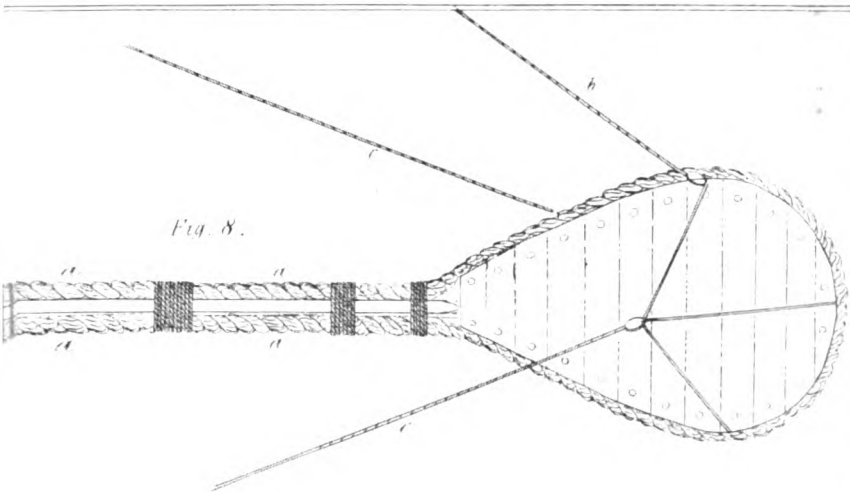


Fig. 8.



WELCH CAPS FOR SECURING THE CAPS OF LOWER MASTS.

London, March 8, 1837.

MR. EDITOR,—I have great pleasure in forwarding to you the annexed letter, with a model for securing topmasts in cases of decayed mast-heads, loss of caps, &c.

The plan appears, both from its simplicity and efficacy, as well deserving a place in your valuable Magazine.—I believe the most effectual channel for communicating it to the nautical world.

I am, Sir, your's, &c.,
W. L. SHERINGHAM,
Lieut. R. Navy.

Figures 6 and 7, plate XII., represent a fore and aft, and broadside view of this contrivance, according to the model.

Pwllheli, Feb. 4, 1837.

SIR,—The great number of merchant vessels which meet with damage every year to their mast-heads or caps, and lose a great deal of time in consequence, by bearing up for the nearest port, has induced me to take the liberty of sending you a plan, which I once adopted on a passage from Wales to New York with slates and passengers.

Your knowledge in nautical science, will, I am sure, enable you to see at once the great utility of this simple plan; which, I think, would save thousands of pounds every year to ship owners and underwriters if made generally known. We were on the point of losing both mast-heads in the middle of the Western Ocean, when the idea struck me, that they might be saved in the manner shown.

A Spanish cap, cap shores, and every usual means had been resorted to in vain, but in about half an hour after I thought of this means of security. Our rotten foremast-head which had broken off twice in the cap, and nearly off the third time, was as strong as ever it had been when this contrivance was applied to it. The main mast-head broke off in the middle at the same time, and was soon equally well secured as the other; and I did not think it necessary to get new masts at New York, but proceeded with the same to St. Andrews. Two spars of equal length are taken, and the ends securely lashed to the top-mast, above the lower cap, as shown in figures 6 and 7, plate XII.; a chain secured to the other end of each spar is then led down abaft, and crossing and passed outside the opposite trussel tree, is hove tight on deck. Two pieces of studding sail boom, a lashing, and two rafting chains, leading down to the windlass ends, were all the materials used. The plan excited much curiosity in New York, and the name of *Welch cap* was given to it.

I have seen a large fleet of West Indianmen, homeward bound, detained long at sea in consequence of one ship having a bad main cap.

I am, Sir,
Your most obedient servant,
JOHN HUGHES.

To Lieut. W. L. SHERINGHAM, R.N.,
Admiralty Surveyor.

TEMPORARY RUDDER.

WE have already laid several contrivances * for temporary rudders before our readers, and fig. No. 8, in plate XII., is copied from a model of one which was forwarded to us by that late excellent officer Lieut. C. C. Nelson, R.N.† He did not, however, claim it as his own invention, having obtained it from Lisbon dock-yard, while serving in H.M.S. Hastings, in 1836. It is stated that a Portuguese steamer was steered home from the Pacific with a rudder of this kind; but we have not succeeded in obtaining any particulars as to when Portuguese steamers were in the Pacific; nor indeed how many of these kind of vessels they possess.

THE sketch, No. 9, plate XII., represents a plan adopted by Captain Hewett, of H.M.S. Fairy, in sounding. The surveying operations of Captain Hewett, in the critical examination of the North Sea, which he is carrying on, require the incessant use of the lead. Hence it becomes a heavy task, and but for the methodical plan he has adopted, would be more than his few hands could perform. With the winch represented in the figure two hands are sufficient, one to heave in, and the other to coil down, the line. The line being coiled in the jolly boat astern the deck is kept dry. The wheel on which the line is shown in the figure is of cast-iron, having a projecting circumference of smaller diameter for deeper water when the strain is greater; and by the arrangement of the machine the line is readily slipped off and on. By this means some thousands of soundings are obtained in the course of the day.

OBSERVATIONS ON STEAM NAVIGATION.

August 13th, 1837.

MR. EDITOR,—The liberal conduct of the East India Company in submitting to the public, at the earliest period, the logs of the *Atalanta* and *Berenice*, deserves the thanks of all persons interested in steam navigation, and particularly of those concerned in the success of the vessels destined to cross the Atlantic. At the end of the logs I would suggest the insertion of an authentic list of numerous particulars of the engines, vessels, and paddle-wheels, convinced that the requisite information would be supplied from the same liberal source to render the whole complete. The tonnage and horse power given in a previous number are insufficient for many purposes of comparison.

Bristol, to her honour, takes the lead in the attempt to reach New York direct by steam. In the extract from the *Albion*, in a letter under the signature of Chimera, the speed at which the passage ought to be made, appears to have been overrated, since engines, in reference to load, fuel, and space passed over, seldom work to most advantage at the top of their speed. Chimera observes, “I have not allowed anything in this calculation for the saving of fuel that would accrue to these large engines by working expansively, but have taken the consumption at 9½ pounds per hour per horse power. The superiority of large over

* See page 266 of our Vol. for 1836.

† See page 63, for a notice of death.

smaller engines is notorious, in consequence of the friction and other resistances bearing a less ratio to the gross power of the steam on the piston of the larger engine."

The saving of coal by working expansively is proportional to the lessened consumption of steam; but the reduction of power is in a less proportion, from the decreasing pressure of the steam cut off exerted in the remainder of the cylinder. The advantage may be estimated as follows, taking the cylinder as unity, and using the steam at 16 lbs. — 6 lbs. = 10 lbs. per square inch in the cylinder before the valve is closed.

Steam cut off and saved.	Steam cut off and saved in decimals.	Mean gross pressure per square inch.	Resistances per square inch.	Mean heat pressure on square inch.	Reduction by expansion in decimals.	Advantage of expansion in decimals.
One 5th	.2	16	6	10	.0	.0
One 6th	.25	15.8		9.8	.04	.16
One 3rd	.33	15.4		9.4	.08	.173
One half	.5	14.9		8.9	.11	.22
		14		8	.2	.25

Did the *Atalanta* and *Berenice* expand their steam? and if so, at what part of the stroke was it cut off? or was the small consumption of coal owing to the size of the engines, and their superiority of manufacture?

Your correspondent Hiram,* in his first letter, has pointed out a possible abuse of expansion, dependent on an intentional deception on the part of the engine-maker; but the full velocity of the stroke mentioned can only be obtained by reducing the load, that is in steam boats, lessening the size of the floats or the diameter of the wheel. We should agree in the importance of ascertaining what I have termed the *gross power* of the steam, Hiram's *actual horse power*; but I cannot coincide in the propriety of the latter term, conceiving actual horse power should be derived from the neat power *actually* exerted by the piston, and contrasted with *nominal*, which is little more than an expression of the size of the engine, since the neat pressure is taken as constant, and likewise the velocity.

There seems another point in the management of steam boats in extended voyages, which requires considerable judgment and some skill, both in seamanship and engineership, to determine, namely, under what

* In our last number, page 752, we inserted a table of some important particulars, although it was by no means so full as we could have wished it; but from which some general conclusions may be obtained useful to steam boat proprietors, as to the quantities of fuel, &c., required for sea voyages. Much, however, remains to be done before true results can be obtained from steam navigation; and this a Steam Committee, formed at Bristol, of which Dr. Lardner is the chairman, appears to be in a fair way of achieving. We shall advert to an ingenious plan, devised by Dr. Lardner, for the purpose of arriving at true steam data hereafter, and are glad to see experience and theory thus working together. We have devoted a considerable portion of our space to show the imperfect state of steam navigation, but in the course of the discussion on Morgan's wheels a paragraph escaped us which was foreign to the subject, and entirely out of its place in our pages. Much as we esteem the communications of our friend Hiram, this had nothing to do with scientific discussion, and was quite inadvertently admitted. Ed. N. M.

circumstances it becomes advisable to desist from forcing the vessel against strong winds. Practice alone will best determine the point; still the principles on which it rests are easily understood, and a general knowledge of their existence may be of service, as tending to prevent dissatisfaction among passengers, on lying to under sail, with a few revolutions of the paddle per minute to keep steerage way, without absolute necessity from danger, or the alarm of danger, when the real object is economy of fuel, for the subsequent security of the voyage. The *Atalanta* seems to have been able to make five knots against strong winds; hence the necessity of a powerful vessel lying to will but seldom occur.

It is obvious, however, that a vessel provided with one and a half the allowance of coal sufficient for her voyage, at the usual speed, would never reach her destination against weather, by which that speed was reduced to half its amount. On a reduction to half speed, it has been said, that it is then time to lay to, with the head in the most favourable position under sail, with the paddles just in motion; but this limit must differ much at the end and commencement of a voyage, as it would be safe to force the vessel with the port almost in sight; while an heavy expenditure of coal, without an adequate gain in distance, would be imprudent in the highest degree at an early period of the voyage. S.

P.S. It is singular that America should be just that accidental distance (if the term may be used) that, in the present state of steam navigation, success will probably chiefly be dependent on the adoption of expansion. There seems some hints of its adoption by an eminent maker in London in Vulcan's letter, &c., &c. The size of his engines, in comparison with others, *favours this assertion.*

STEAMER'S ALARM.—*To prevent collision by night or during a fog, in the rivers.*

September 8, 1837.

THE following suggestion of Commander Downs, R.N., arising from the unfortunate collision between the *Monarch* and *Apollo*, deserves the attention of our steam boat proprietors. It is obvious however, that some power must be found to answer the purpose of the paddle-wheel when not in motion.

A piece of noisy machinery should be fitted to the outside of each paddle-box, (the *fore*-part if possible,) so as to be set in motion by the paddle-wheel, and so arranged as to be stopt by a laniard, or otherwise, by a person stationed by it: the one on the starboard side, when in motion, to make a noise like that of a watchman's rattle, but much louder; and the one on the larboard side to make a noise like the cymbals of a band. A bell-ringing sound I think would be objectionable, as most vessels have a bell occasionally ringing, and therefore it might be mistaken.

Steamers going *down* the river, should set the *cymbals* in motion at intervals of two or three minutes, for about a minute at a time. Steamers *coming up*, should keep the rattle in motion in the same

manner: a boy might be stationed to attend the stop and motion-laniard; and being thus always near the person conning the steamer on the paddle-box, could always be kept in check, so as not to prevent the man at the helm from hearing the necessary directions relative to steering.

I have mentioned watchman's rattle and cymbal-like noise, merely for the sake of their sound being so unlike each other; any other two noises would do if equally dissimilar, and not liable to be mistaken.

It might be as well probably for the man at the con to have hold of a laniard fast to the "alarm" worker, so as to give him a tug (if occasion required) to stop the noise: and this laniard might be so contrived as to lead from one paddle-box to the other over the heads of all, in case of the man at the con being required to be on the opposite paddle-box, to that on the "alarm" in use.

H. D., Com. R.N.

ANOTHER WORD ON MARINE INSURANCE.

Q. "Is it the practice to insure ships for more than their value?" A. "I conceive there is a very large proportion of the mercantile navy, that would be scarcely saleable at any price whatever, which are sent to sea insured for many hundred pounds."

"A person can insure his vessel for what sum he chooses at present; he has merely to state a sum, and the underwriters will take her; if she is lost there is no risk."—*Shipwreck Committee, Minutes of Evidence.*

THE wrecks of merchant vessels are attributable to two main causes: First, their original defective construction and subsequent defective condition; and second, the notorious ignorance of seamanship and navigation of many of the masters and officers in charge of them. Dividing shipwrecks into four parts, one half of them may be attributed to original defective construction, and subsequent defective condition; a fourth part, to the ignorance of masters and mates, and the remaining fourth part, to the danger of the elements and the errors of judgment which man will ever be subject to. It is unnecessary to occupy space in proving that safe merchant vessels could be had, if they were desired, because the case is proved in the Royal Navy, wherein, since the introduction of solid bottoms and sides, men-of-war are now preserved in nine cases out of ten, where they would, as they were constructed previous to the adoption of these improvements, inevitably have been lost. The proofs are so numerous, so various, so full, and so irrefutable, on this point, that they cannot be disproved; and as it never can be fair to compare a merchant vessel, when exposed in danger, with a vessel of war in the same predicament, the only just comparison is to compare a ship of war with another in similar circumstances, and this is the one made. Whilst therefore cause and effect hold good, it is obvious that, if the same means were adopted, they would produce the same effect in merchant vessels, in point of safety as they do in ships of war.

Safe merchant vessels, under the system on which they are now conducted, would be decidedly against the interest of ship owners. If I am owner of a merchant vessel which has cost £2000, and send it to

sea insured for that sum, I can have no interest in its loss, whilst it is in the ordinary performance of its duties. If it should become exposed to danger, and be totally lost, I call on the underwriter and receive the £2000 for which it was insured. I may also have the freight either paid in advance or insured, and in such cases it is clear that I escape all loss.

But if the vessel, instead of being lost, be preserved in a damaged condition, she must be repaired; and supposing the whole expenses, including the detention of vessel, whilst undergoing the repairs, the wages and victuals of master and crew, and the repairs received by the vessel, and every expense included, from getting the vessel off the rocks or strand, to getting her afloat again on the prosecution of her voyage, should amount to £600, (or any other sum more or less,) I find I have to pay £300, or one half of this sum, whatever it may be, although my vessel was insured to the full value, (this may not be the exact proportion, but it is near enough to state the case,) and that I would have saved this £300, (or other sum,) had my vessel been totally lost. Here then I have a strong interest in the destruction, instead of in the preservation, of my vessel.

So strongly does this operate with ship owners, that I am firmly convinced that if safe vessels were offered to them at the same price as unsafe ones, they would prefer the unsafe ones, by which, by means of insurance, their capital is protected against all loss, to the safe ones, by which when their vessels were exposed to danger, their capital would be subjected to loss. It is mere dissimulation then on their part to pretend, that it is the additional cost which prevents them getting safe vessels, and mere delusion on the part of the public, in supposing that ship owners have an interest in the safety of their vessels, when they are exposed to danger and insured. A tenth part additional cost of a well-built vessel, and a sixth part additional cost of an ill-built vessel, would, in each of these cases, give upwards of ten times additional safety to the vessel, simply by adopting the method of construction of solid bottoms and sides, now in practice in the Royal Navy. I may here remark that, although the adoption of them, (solid bottoms and sides,) were made obligatory on condition of obtaining a register, it would leave the tonnage or admeasurement act, which is producing such obvious improvements in the shape of our merchant vessels, as free and uninterfered with, as if they did not both relate to the same description of property.

On account of the portion of risk, as above explained, which is thrown on the ship owner, he prefers an unsafe to a safe vessel, and in order that he may escape this loss, ship, merchandize, and lives, are all frequently lost in the sea. I need not say that although the ship owner and merchant may, by means of insurance, and, by throwing the risk entirely off themselves, guard themselves against any loss, that the loss must be, and is in fact, borne by the public. By the ship owners' own showing, they say, "We do not deny that strong and safe merchant ships can be had, and shipwrecks thereby to a great extent prevented, but the vessels would cost us more money, and we cannot afford it." If then human life be sacrificed, as it is, owing to unsafe ships being employed, are the lives not so sacrificed for money, even by the ship owners' own showing?

In four vessels from Liverpool last winter, the Bristol, Mexico, Jane and Margaret, and Glasgow, about 400 human beings were drowned. In each of these cases, although it were quite possible that the wreck might not have been prevented in any one of them, yet, had they had solid bottoms and sides the probability is, that they would have held together, till every life lost in them might have been saved. The probability is too, that the owners of these vessels suffered no pecuniary loss whatever. So also with the convict ships; and yet all these vessels were complete and seaworthy by Lloyd's Rules. This shows how fallacious, not to say intentionally fraudulent, these rules are.

Considering that a full half of all shipwrecks are attributable to defective construction, and subsequent defective condition, whilst a ship owner can escape all loss, by having an unsafe, instead of a safe vessel, he never will provide safe vessels, unless it be made his interest so to do. The professional deficiency of the masters and officers may all be traced to the same cause. The ship owner cares little about these points, so long as he can guard against the effects of them by means of insurance. Here is the analogy. If I have a horse, value £10 uninsured, and I starve it to death, I lose £10. If it be insured and I get £10 for it, I probably become indifferent whether I starve it to death or not. If the horse which cost me £10 be worth only £5 in the market, and unable to do its work, but I can still insure it for £10 without any questions being asked, I will probably take means to starve it to death and get £10 for it, with which I can purchase a new and a better horse, capable of doing the work. By means of sea insurance, every word of this analogy applies to merchant ships, and the ship owner charges not only the freight of goods, but also the premium of insuring his ship to his employer, or, in other words, to the public.

Whilst matters remain in this state, the competition will ever be amongst ship owners, as to who can get the cheapest vessel, without any regard to her safety; and hence a competition amongst merchant ship builders, of who can build the cheapest vessel, and thereby effect the most ready sales. No matter whether she will float when she is launched; she can be made to float afterwards, and will be cheaper than a better vessel. The effect of this, on ship building, is exemplified in the following extract of a letter from a secretary to a seamen's society at South Shields:—

“ Indeed, not many months since, a fine looking vessel came round from Sunderland, and commenced to load for the East Indies; when but half loaded, she was found so defective that she was again delivered, and had to be repaired before she would swim to sea. There is a new ship of theirs from Sunderland, now here, that has only made one voyage to London, and proved so leaky that one of her crew absolutely died at the pumps. Another of their sloops was some short time since put into dock, and the shipwright employed, informed me that he took off two long riders, which reached from the transom-hook to the pump-well, which were each supported and fastened only by three half-inch copper bolts, the whole of which he teemed out with his hand hammer; the rest, which were two in number to each rider, appeared to be bolts, but proved to be quakers; viz., short studs about two inches long. But if you notice the paragraph, the writer introduces a miracle in favour of the Sunderland-built vessels, viz., that eight men and only one boy did build a good and perfect Sunderland vessel of 206 tons in eight short

weeks. This, in my view, confirms their method of building more than anything I could have said about them. Yes, I must confess, if without chocking, fastening, or tempering the plank for the round of the bow or curve of the quarter, together with slack treenails, and slender caulking is perfection, you may get as well supplied with that at Sunderland, as in all other parts of the kingdom put together."

I therefore attribute three-fourths of wrecks to the effects of the present system of sea insurance, and the remaining fourth only to being inevitable.

As to Mr. Buckingham's bill, control is either wanted, or it is not. If it be not wanted, then leave matters alone with shipwrecks; every year increasing, out of a same given number of vessels afloat, notwithstanding all our increased knowledge of improving navigation. If it be wanted, then it appears to me, there could be nothing more injudicious, than to throw power, to continue the evil, into the hands of the very parties whom it is necessary to control, in order to remedy it; and this would be the effect of his bill, so far as the constituency of his marine board, or a part of the constituency of it goes. The resistance to control, by ship owners, can be no reason why it should not be applied; but, I may be allowed to state that, of the public bodies, who, in last session of parliament, sent three petitions from Edinburgh; and of the public bodies, who have sent three petitions from Kirkcaldy; they are unanimous in thinking, that no member of either house of parliament could carry a bill curative of the evil, unless it be taken up by government.

BRITANNICUS.

We have added the following pithy letter of Lieut. Kelly, R.N., which appeared in a recent number of the *Shipping Gazette*, as a fit appendage to the communication of our correspondent "Britannicus;" and we have also selected two interesting paragraphs, which appear to belong to the same subject, as a postscript to Lieut. Kelly's letter. We shall leave all these for the reflection of our readers; and in case they might imagine that *wrecks* do not go on as they used to do, from not seeing our *tables* continued of late, we subjoin one, with the assurance that we are as watchful of them as we have been for the last five years, since indeed we commenced this journal. It is gratifying to find the example set by Sunderland, in establishing the examination of captains and mates, appears to have been taken up at Newcastle, and is likely to be followed at South Shields, as the incompetency of masters seems to be one among the various causes of shipwreck. Let this example be generally followed, and let the plan of a Savings' Bank for seamen be taken up in earnest by some active and energetic individual, and we shall see the good effects of these and a few other measures, to which they will inevitably lead, and which have been pointed out by the master of a British merchant ship, in our own pages, and by Lieut. Kelly in the *Shipping Gazette*, in the reduction of the fearful loss of life and property which now takes place.

WRECKS OF BRITISH SHIPPING—CONTINUED FROM THE SHIPPING GAZETTE.

(Continued from page 276.)

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
Active	Dixon	Fogee Islands	Tonga Islands		15 June	
Adelaide	Of Calcutta				28 July	Three drowned.
Admiral	Warren	Plymouth	Mopus	Cl. Devon	15 June	
300 Aid	Of Bombay				28 July	
Ajan	Care			Stag Rocks	15 June	
Ajlon (schooner)	Hopper	Sines	Newcastle	Plymouth	1 Nov.	Crew saved.
Alexander	Weaker	Liverpool	New Orleans	Antigua	27 July	Hull, &c., sold.
Alexander (sloop)	Brookie		Inverness	Loggie H.	26 Aug.	
305 Amelia	Hopper	Nassau	Liverpool	S. Bernard	6 Aug.	
Anastais	Of London			abandoned	4 Jan.	Waterlogged in Pacific.
Atlas (sloop)	Wilson	London		Crossie	30 Aug.	Crew saved.
Bannerman	Light	Linton		China Sea	19 Dec.	
Bob Logie	Hull	St. John's N.B.		Sable Island	5 July	Crew saved.
310 Boston Packet	Horsburgh	Newcastle	Stockton	Off Fees	25 Oct.	Run down.
Brilliant	Fig	Newport	Quebec	Off C. Clear	21 July	Crew saved.
Briton				Bombay	15 June	
Brothers	Of London			Bermuda	2 May	
Bysell	Bunfield	London	Newcastle	Newcome I.	2 Nov.	Crew saved.
315 Cephalonia (sch.)	Wade	Dartmouth	Cephalonia	Aveiro	28 Aug.	
Charles	Mills	St. Thomas	St. Domingo	St. Domingo	Sept.	
Cour de Lion	Robinson	Liverpool	Quebec	Dundrum B.	10 Sept.	Six lost.
Colouist	Smith	London	Bombay	Mother Bk.	26 Oct.	By fire.
Concord	Lawson	London	Abandoned	Off Pillan	25 Aug.	
320 Cornair	Of Singapore				10 June	
Cumberland (sch.)	Crooks	St. Petersburg	Lancaster	Off Peia Light	21 Sept.	Two lost.
Dingwall	S. John's N.	St. Andrews	St. Andrews	C. Spear	19 Aug.	Crew saved.
Don Juan (St. V.)	Tarifa	Calix		Tarifa	15 Sept.	
325 Eliza and Anna	Eaglehue	Hand	Quebec	Cap West	25 Aug.	
Equity	Key	Belfast	Quebec	Long Island	31 Aug.	Crew saved.
Estrella	Taylor	Para	Bristol	Arch Bay	23 June	
Fox	Of Liverpool		Maranhon	Para R.	June	
330 Gen. Gascoigne	Kendall	Montreal	Liverpool	Oil Malaga	14 Sept.	One lost.
George	Hendry	London	Liverpool	Liverpool	1 Sept.	
Germ. (schooner)	Lawson	St. John's N.B.	St. Johns	Off C. Batteras	25 Sept.	Crew saved by Virginia.
Germ. Douglas	Landry	Of Montreal	Philadelphia	Dunbar S.	28 July	
Grasshopper (sch.)	Collins	St. Petersburg	London	C. Henlopen	21 Sept.	Crew saved.
Groat Harwood	Newry	London	Quebec	Bombay	15 June	
335 Haddow House	Of Newcastle	London	Quebec	Quebec	9 Oct.	Crew saved.
Hannibal	College	London	London	St. Lawrence	2 May	Crew, &c., saved.
Henry	Tilley	London	London	Off North, C.B.	1 June	Crew saved.
Ida	Lockhart	Inverkeithing	London	Crew saved and	30 Aug.	carried to Philadelphia.
Industry	Hart	Launceston	London	Off the Bay	4 Oct.	Crew saved.
Isabella	Lennox	Quebec	Pangaroo I.	Portland Tay	23 June	Australia.
Isabella	Comocher	London	Maranhon	Para R.	7 Aug.	
340 Jane	Of London	London	London	Lasador	7 Oct.	Crew saved.
Jane	Of London	London	London	Off Port	11 Sept.	35 N. 74 W.
Janet	Of London	London	London	Found aban.	11 Sept.	
345 Janus	Of London	London	London	logged and	1 Aug.	Crew saved.
Jean	Cleet	Newcastle	London	Off at sight	1 Aug.	Uncertain.
Jessie	Elphinstone	Newcastle	London	Sizewell	11 Sept.	All lost.
John George	Noye	Newcastle	London	Daily cotton Bay	27 Oct.	All lost.
Killgrew	Herbert	Liverpool	Gutierrez	Maurice Bay	1 Oct.	
350 Loudain	Pugh	London	Yarmouth	Land's End	1 July	
Little Penny	Muller	London	Yarmouth	Alcraenes	21 Aug.	Crew saved.
Malind	Gardner	London	Yarmouth	Off Hastings	12 Aug.	
Margaret	Skead	London	Yarmouth	Nestor at sea	26 Aug.	Crew saved.
355 Mary	Arbutnot	London	Yarmouth	Egg I., St. Lawr.	27 Aug.	
Mary	Of Hull	London	Yarmouth	Loggie H.	27 Aug.	
Mary Ann (sch.)	Hentley	London	Yarmouth	Pentland Frith	28 Aug.	
Mary Ann	Jones	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Michael	Shook	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
360 Montrose	Gatenby	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Nimble	McCluer	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Norfolk	Narva	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
365 Northumberland	Bermuda	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Norval	Run foul of	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Palladium	John's N.B.	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Pandora	Cockle	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Proof	Alexander	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
370 Queen Anne of S.	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Ranger	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Reliance	Cockle	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Roadind	Alexander	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
375 Roncud	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
R. Walker	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Scipio	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
380 Speed	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Splendid	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Sprightly	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Superb (sch.)	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Swallow	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
385 Thomas (sloop)	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Thomas Gray	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Union	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Vivid	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
Wexford	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.
385 Willian	Whaler	London	Yarmouth	Off Turk's Island	23 Oct.	Crew saved.

To the Editor of the Shipping Gazette.

SIR,—Some strictures in the *Shipping Gazette* of the 19th instant, on an article in the *Liverpool Albion*, on the subject of marine insurances, tempts me, once more, to notice this important point; my observations, however, will be brief, and I will deal in facts rather than arguments. I shall not for a moment attempt to enter upon that delicate question, whether underwriters are, or are not, interested in the occasional occurrence of shipwrecks; that subject I formerly entertained very fully, and I have nothing to add to my previous comments on it. But I cannot but reiterate what I then urged, that ship owners should be compelled to have a share in the risk of their vessels; and the more I see, the more I am confirmed in the correctness of my opinion. This I unhesitatingly say will be the first and the most essential step towards any improvement in the system of conducting our mercantile marine, and it is impossible to over-rate the effects it would have. At the same time, the manner in which Mr. Buckingham's bill was dealt with in parliament, convinces me that no amendment in this system is to be hoped for, unless the subject is brought forward with all the weight and influence of the government. It was evident on that occasion, from the first formation of the committee, that the ship owners and underwriters in the house—no uninfluential body—were determined to resist any change whatever in, or any interference with, what they are pleased to call their private concerns. Mr. Buckingham's bill was unquestionably faulty; but there was in it a ground-work for good and practical legislation, had the house allowed it to go into committee; but this was most strenuously resisted by the legislative ship owners.

But to the point. I contend, that so long as vessels are allowed to be covered for their full value by insurance, there must be more or less of indifference on the part of the owners for the fate of the vessels; and in fact, the interests of the latter and those of the underwriters must frequently come in collision in a way injurious to both: and now for one or two facts illustrative of my argument. Very recently a vessel came into this port by stress of weather, bound on a foreign voyage; it was blowing strong, and the master found that, independently of the gale, his vessel was not sufficiently ballasted to carry canvass. He reported his arrival to his owners, and by return of post he had a very angry letter for attempting to take a harbour, and for not having taken sufficient ballast previously to sailing. (She had fifty tons; which, for a vessel of 117 tons, register, ought to have been sufficient, had she been properly constructed.) He was ordered to sea forthwith, and accordingly proceeded, though the wind was still against him. It is now nine days since she sailed, and I will venture to affirm, from the winds and weather we have since had, that she is still beating about in this narrow channel, or perhaps anchored in Lochindale, or some of the other exposed anchorages among those islands. See, then, the consequences of this: here is a vessel sent to sea, bound on a foreign voyage, with a foul wind; she has to encounter all the dangers of beating about in a narrow navigation during the long dark nights of the present season,—a danger which is considerably increased by the number of large steam vessels which are constantly navigating the channel; and worst of all, her limited crew are worn out by fatigue, and utterly dispirited at the

commencement of a winter passage to the dangerous coast of North America. This vessel was fully insured at Lloyd's; but is it reasonable to suppose that if the owners had themselves part of the risk of her they would have been so utterly reckless of her safety? I know it is said by ship owners that, the vessels being their own, they have a right to order them as they please; but this I deny; a vessel which is insured for her full value is not, so far as sea risk is concerned, the property of the owner, for he has no interest whatever in her if she is lost.

One other fact and I have done. Not very long since, a new ship of 700 or 800 tons was ordered to sea from Liverpool, by the owners, in defiance of the remonstrances of the pilot and the commander: what was apprehended occurred; twenty-four hours after, she was on shore on the Lancashire coast and had to be discharged of a full cargo, docked, and extensively repaired,—of course at the expense of the underwriters: nor was this all; the commander, when called upon by the latter to state the circumstances of the accident, did so, truly and conscientiously, and for doing so was dismissed from his command. These I have brought forward, not as solitary, but because they are recent instances, of which I could urge some hundreds, to show that either through ignorance of the dangers of navigation, or through indifference, or from some other motive, ship owners have not that due regard for the safety of their vessels which a pecuniary interest in them, in the case of loss would probably instil.

Your obedient servant,

Stranraer, Oct. 23th.

R. N. KELLY, Lt. R.N.

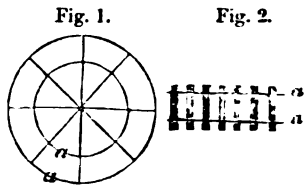
Portsmouth, July 6.—The *Edward*, with emigrants, for Quebec, has been brought into the harbour, the crew having refused to proceed; the vessel being in such an unsound state as to make eight inches water an hour.—*Correspondent of the Morning Post.*

A gross instance of want of attention to the sea-worthiness of ships—particularly those crowded with emigrants—has just been brought to light in the case of the ship *Edward*, Metcalfe, master, now discharging her cargo in this harbour in order to enable her to be docked. This ship left London with 160 German emigrants, and was bound to New York, but made such an alarming quantity of water that the crew refused to proceed in her, although the master withheld provisions from them, on account of their refusal, for three days. The German emigrants had also protested against her condition, and the Secretary of State has sent down an officer to investigate the circumstances. Not only is her hull defective, but the official authorities here pronounce her masts and rigging to be in a most shameful condition, and the only wonder is that she ever succeeded in reaching this port without their tumbling overboard. On examination, it was found that there was no oakum in some of the butts, and it is very doubtful whether she can undergo such a repair as to make her sea-worthy.—*Hants Telegraph.*

PADDLE WHEELS PROPOSED BY MR. ANDREW CARRICK OF
GLASGOW.

MR. EDITOR,—I beg to submit for your consideration, the following mode of constructing a paddle-wheel for steam vessels, which, I am fully persuaded, will propel with greater power and regularity than any

paddle that has yet been adopted. Fig. 1. is intended to represent the common paddle wheel; and Fig. 2. shows one tier of floats according to my plan, each float consisting of a piece of plank, or sheet iron, about two feet long and six inches broad. Fix the two horizontal bars *a a* fig. 2. to the paddle rings *a a* fig. 1. To these bars, screw the floats, six inches asunder, as represented by the black and white space, fig. 2; this constitutes the first tier. Fix two horizontal bars to the paddle rings, at a distance of twelve or fifteen inches from the former bars, and distribute the floats as before, with their faces opposite to the open spaces of the first tier, and so on till the wheel be completed.



A paddle-wheel of this description has a beautiful appearance, runs almost in back water, and produces no shaking by its motion through the water. Should my proposal be considered worthy of a place in your valuable Magazine, I shall feel much obliged.

I am, Sir, your obedient Servant,

ANDREW CARRICK.

Calton, Glasgow, October 14, 1837.

BANK OF SEVENTY FATHOMS OFF STATEN ISLAND.

THE following account of a bank off Staten Island, discovered by H. M. S. Stag, Commodore Sullivan, has been transmitted to the Admiralty, by Sir Graham Hammond, the commander-in-chief on the South American station.

“ On the morning of the 28th the colour of the water was observed to be much changed, resembling a whitish green. We tacked, had a cast of the lead, and found bottom in seventy fathoms, two small blue stones and a shell (Rissoa) came up on the awning, impressions of several other stones being made. We got a sight for the chronometers, which, with the dead reckoning, corrected from good observations of the 29th, placed us in lat. $54^{\circ} 35' S.$, and long. $61^{\circ} 06' W.$ After running W. by N. true eighteen miles, at noon we got another cast in eighty fathoms, which brought up a stone two inches long, and nearly one inch thick, which must have been the edge of the bank, as shortly after, the water became a deep blue colour, and we had no bottom with one hundred fathoms.

Query? Is not this bank connected with the rock seen by Lieut. Burdwood in 1828; as upon repeated soundings afterwards, whilst standing for the Cape, and across the parallel of it, we had no bottom with one hundred fathoms.

SHOAL OFF PUNTA ARENAS, PACIFIC.

WE are indebted to Commodore Mason of the Blonde, for the following extract of a letter from acting Commander Hammond, of H. M. S. Rover, dated Libertad, 10th Dec., 1836, giving an account of a dangerous shoal off Punta Arenas.

“ In standing in for the anchorage off St. Lucas Island, (for the convenience of watering) when passing Bird Island, at the distance of a mile, we suddenly shoaled our water from nine to five fathoms, then $2\frac{3}{4}$ in both chains; nearly at the same moment we felt the ship slightly touch the ground. We had fresh way on; the next cast was five fathoms, then seven, in which we anchored about ten minutes afterwards.

The shoal extends from Bird Island, in an easterly direction, to the distance of a mile and a quarter, with a passage between the shoal-water and the island, of twelve and sixteen fathoms.

INNISHOWEN LIGHT-HOUSES.

IN our October number we inserted a notice issued from the Ballast Office at Dublin, concerning these lights, since which we have received the following *corrected* one:—

“ The Corporation for preserving and improving the port of Dublin, &c., give notice, that two light-houses have been built on Donagree Point, from which lights will be exhibited on the evening of the 1st of December, 1837, and which will thenceforth be lighted from sun-set to sun-rise.

“ Specification given of the position and appearance of the towers, by Mr. Halpin, inspector of the light-houses of Ireland.

“ The two light-house towers, erected on the northern side of the entrance to Lough Foyle, bear from each other east and west, distant 460 feet; kept in line they lead clear of the “Tuns Bank.” The lights will be fixed bright lights, open seaward, from N.E. $\frac{1}{2}$ N. to W. by S. The eastern tower, in lat. $55^{\circ} 13' 46''$ N. and long. $6^{\circ} 56'$ W. bears by compass,

From Bengore head	-	-	W.N.W.	distant $15\frac{1}{2}$	sea miles.
— North buoy of Tuns Bank	-		W.N.W.	..	$1\frac{1}{4}$..
— South west end of Tuns Bank			N.E. $\frac{3}{4}$ E.	..	2 ..
— Tower on Magilligan Point			N.E. b. E.	..	$2\frac{1}{2}$..
— North pt. of M'Kenny's Bank			E.N.E.	..	$2\frac{1}{2}$..

(Var. $28^{\circ} 20'$ W.)

The towers are circular, coloured white; the lanterns elevated seventy three feet over mean level of the sea, and in clear weather may be seen at the distance of thirteen miles.

*Ballast Office, Dublin,
24th August, 1837.*

By order,
H. VEREKER, Sec.

It will be seen that the bearings of the lights from different points are given by compass, and the distance in geographical miles. Are the bearings of the lights from each other, and the points between which they are open, also magnetic? The compass being specified afterwards raises a doubt on this.—Ed. N. M.

NOTICE TO MARINERS.—(*Received from the French Government.*)

Hydrographic Office, Admiralty, 16th Oct., 1837.

NEW TIDE LIGHT AT THE PORT OF DIEPPE.—Mariners are hereby informed, that from the first of November next, the intermit-

ting light, now on the western jetty of the port of Dieppe, will be discontinued; and that it will be succeeded by a fixed light on the small tower recently erected on the said jetty, thirty-five yards from the jetty head.

The new light being thirteen yards above the level of high water at the equinoctial tides, will be seen in fine weather at the distance of three leagues.

This light is intended to answer the same purpose as the present one, that is to say, it will be lighted only when there is a depth of at least ten and a half feet (English) in the entrance of the port.

V.—ON THE PROTECTION OF SHIPS FROM LIGHTNING. *By William Snow Harris, F.R.S., &c., &c.*

(Continued from p. 744.)

No. V.

Objections to the Employment of fixed Conductors of Lightning to Ships—considered.

68. The objections to the use of the fixed conductors of lightning on ship board, described in the last paper, (No. IV.,) may be divided into three classes:—

1st. Theoretical objections, including those which discourage the use of lightning conductors generally, under whatever form applied.

2nd. Practical objections to the application of lightning conductors to the masts of ships.

3rd. Economical objections to the expense incurred by the employment of such conductors.

The many objections which have been advanced under these different heads, are, for the most part, extremely fair, and merit a candid examination.

69. The arguments against the use of lightning rods, under whatever form applied, have been fully considered in a preceding paper, (No. III.,) and therefore do not require to be again stated. It has been, however, further insisted on, that since we can never know the actual quantity of electricity which may be evolved at the time of a thunderstorm, the conductors may not afford the required protection; that, in consequence of their fusion, very extensive damage may ensue. That, in fixing conductors of lightning in the masts, we can only have surface, whereas a dense mass of metal is requisite, if we would avoid the fusion of the conductor, and effectually guard against danger. That superficial conductors fixed in the masts are the more objectionable, inasmuch as the masts pass immediately through the hull of the vessel, and near the magazines, which is considered to be very objectionable.

70. The notion that a ship can possibly be in a worse condition as concerns lightning, *with* than *without* the system of defence above mentioned, (No. IV.,) has been already shown, upon general principles, to be erroneous. (47.) Indeed, the reverse of such an opinion seems, on an appeal to experience, to be much nearer the truth; for although it should be admitted, that we can never estimate the actual quantity

of electricity discharged in a stroke of lightning, we have, nevertheless, by completing the conducting power of the masts and hull, greatly multiplied the chances of escape. Mr. Cavendish has proved that the conducting power of sea water is a million of times less than that of iron wire; and it appears from a notice of some experiments given by that distinguished philosopher, that iron wire conducts about four hundred millions of times better than distilled water; the chances of escape, by perfecting the conducting power of the masts, must therefore be very greatly increased indeed.

(λ) This was clearly shown on board his Majesty's frigate, *Dryad*, one of the few ships in the British navy fitted with the fixed lightning conductors above mentioned. (No. IV.) This ship, during a tornado, on the coast of Africa, was assailed by severe lightning at different times. The electric matter fell on the conductors on the fore and mizen masts so freely, that, in passing down the masts, it produced a sort of luminous atmosphere, attended by a whizzing noise, resembling the violent boiling of water.*

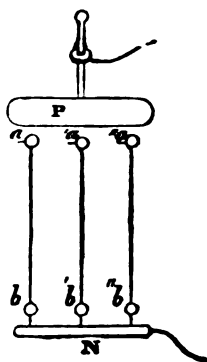
(μ) Now it is worthy of remark, that his Majesty's ship *Owen Glendower*, on the same coast, not furnished with conductors of this kind, was severely damaged by lightning in a similar storm.

71. With respect to the absolute fusion of the masses of metal incorporated with the masts and hull, it may be laid down as an axiom, that a given quantity of metal can always transmit an accumulation of natural electricity equal to its fusion; this is evident, since the fusion of the metal is the result of the electricity actually transmitted. But on a review of all the known cases of damage by lightning, it cannot be inferred that a conductor, equal in mass to that of a copper rod 1.05 inches in diameter, and 210 feet in length, which may be taken as the mean value of the conductor on one mast of the frigate of fifty guns, (651,) is at all likely to become fused. In short, the evidence we possess from experience is conclusive on this point, (45,) and sufficiently proves, that nothing short of an atmospheric convulsion from electrical action, calculated to involve the ship and everything on board, in one common ruin, would be likely to dissipate so great a quantity of metal. Such unknown convulsions, existing for the most part only in imagination, we pretend not to have the power of withstanding: we may, however, still observe, that even in very severe discharges of atmospheric electricity, a ship is safe from the immediate operation of the particular shock which destroys a conductor. (22.) (t) (u.)

72. In these observations we have only considered the action of the conductors on one mast; but it is consistent with the results of experiment to suppose, that the conductors on each mast would be called into action, before *either would undergo fusion*. The following experiments are strikingly illustrative of this point.

* Commander Turner, R.N.

Exp. 4. Let an extremely fine wire of iron, $a b$, about 14 inches in length, be secured between the insulated brass ball a , and the ball b , attached to the conductor N , the latter being connected with the negative side of a charged jar or battery. Let a large insulated conductor P , be placed immediately over a ; continue to charge the battery, until an accumulation is obtained, which discharged from P to N , and over the wire $a b$, is just sufficient to ignite that wire: the quantity of electricity requisite may be easily ascertained by any of the methods of measurement in ordinary use;* the discharge may be effected by connecting P with the positive side of the charged battery.



Let two wires similar to the former, $a b, a' b'$, be now placed under the conductor P , and let the same quantity of electricity be again discharged from P as before, the explosion will break on both the wires, but neither will be fused. If a charge be now accumulated just equivalent to the fusion of the two wires $a b, a' b'$, then if three such wires, $a b, a' b', a'' b''$, be placed under P , the same explosion will divide upon the three, and not melt either. The discharge is supposed here to pass on spheres, but if a pointed termination be given to the wires, then a much greater quantity of electricity will be required to fuse either of them.

We may hence infer, that previously to either of the conductors becoming fused, the other would come into action, and hence we may calculate on the fusion of the whole or none. If, therefore, we add to the great capacity of the conductors in question their conjoint action, and the very favourable conditions under which they are placed, that is, pointed terminations above, and a perfectly free action below, we have every reason to repose confidence in their efficiency; so that, instead of the disastrous consequences so frequently arising to ships from lightning, we should find the electrical action very rapidly dissipated, and transmitted, as shown, (70,) (λ) in a state of comparatively low tension to the sea.

73. It is a mistake to suppose that the conductors, although superficially applied to the masts, are without considerable powers, even though considered in relation to their thickness, as may be seen by referring to the table given in the preceding paper. (65.) But, admitting that quantity of metal be the great desideratum in a lightning conductor, it must still be equally efficient, under whatever form applied: this is evident, since the conducting power of the mass must consist of the conducting power of all the parts. Now it would be absurd to suppose that a mass of metal, expanded into any extent of surface, so as to diminish its thickness, would not still conduct in every part; indeed we know from actual experiment that it does so, and that it is quite impossible to destroy a portion of a perfectly homogeneous metallic surface of a *uniform density and thickness*, by an artificial accumulation of electricity, without destroying the whole. We do not

* "Elementary laws of Electricity." Transactions of Royal Society for 1834. Pt. 2, p. 217, sec. 13.

consider here any single point or part upon which the discharge becomes concentrated at the time of its exit or entry upon the conducting plane.

74. It would seem from the very conclusive experiments of Sir H. Davy,* that a considerable advantage is obtained by giving a mass of metal an extended surface, in consequence of its becoming exposed to a greater extent of air, by which its temperature is kept down, and therefore the heat produced by the electrical discharge diminished.

That the conducting power of metallic bodies is impaired by an increase of temperature, is a fact quite beyond dispute; the very few experiments adduced to the contrary being altogether inconclusive. A given quantity of metal therefore, formed into a hollow tube, might possibly withstand an intense discharge of lightning, whilst under the form of a solid rod it would be melted.

75. The circumstance of the conductors passing *through*, or rather *into* the hull of the ship, is not an objection of any importance, as will appear on a due consideration of all the circumstances under which a ship is exposed to strokes of lightning. We have already shown (26) that the protection of a ship from damage by natural electricity depends on a perfect completion of the conducting power of the whole mass, so as to remove as it were all impediment to the progress of electrical diffusion. It is a common observation, that in cases of damage by lightning at sea, all the danger is past when the electricity has reached the well. That the electric action may be safely transmitted through the ship, or equalized upon it and the surrounding sea, is very evident; it is, in fact, owing to the metallic fastenings, which freely admit of this operation, that so many ships, struck by lightning, are saved from very severe damage in the hull. This is peculiarly the case in her Majesty's fleets, where metallic bolts and other masses of metal, in connexion with the sea, greatly abound; and it is not a little remarkable, that the more serious cases of damage in the hull have occurred in merchant vessels, where such masses of metal are not so common. We may, in further illustration of this important fact, cite the case of her Majesty's ship London, whose foremast was shivered into the step by lightning, whilst the keelson and keel remained perfect. Now, immediately at the step of the mast, we have a great number of keelson bolts in connexion with the sea.

76. In addition to these considerations, we may further observe, as already insisted on, (36,) that the masts themselves are most commonly the points upon which the electrical action is concentrated; and that these are necessarily placed immediately in the ship. If their conducting power, therefore, be *not* efficient, they must transmit the lightning with damage to the hull, since they determine it in that direction. Hence, by defending the masts themselves, we guard against the evils arising out of their position. That the conductors pass *near* the magazines is allowed; but such is the case in all magazines on shore defended by lightning rods; they are purposely placed *near* them, in order to afford the required protection: for it is well known that the electric matter will *not* leave a good and efficient conductor, in the *line of its action*, to pass upon detached or less perfect conductors out

* Transactions of Royal Society.

of that line. (56.)* The following experiment is simple but important in its consequences, as connected with this grand principle in electricity:—

Exp. 5. Let a small mast, *a b*, of about eight or ten feet in length, be constructed in two vertical parts, having within it an interrupted line of metal *a c d b*: place at the discontinuous points at *c d*, some percussion powder and common gunpowder. Let an electrical charge be accumulated, sufficiently powerful to pass with force through these points, when discharged from *a* to *b*. If we now attach to this mast, externally, a fine continuous slip of tin or silver leaf, or otherwise an extremely fine wire, so as to be continuous from *a* to *b*, the electric matter *will not enter the substance of the mast*; whereas, without such a protecting slip of metal, the gunpowder will become ignited, and the parts of the mast forced asunder. If the distances in the points *c d* be somewhat great, about half an inch or less, then a charge will be transmitted with safety to the mast, equal to the fusion of a fine iron wire, employed for its protection. We may infer from this experiment, that a mast having a lightning conductor of a superficial kind attached to its surface, would remain perfect under a discharge of lightning equivalent to the fusion of the metal.

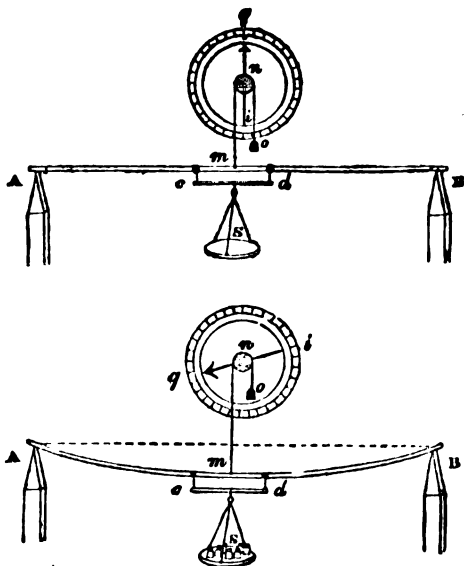


77. The objections arising out of the mechanical relations of the conductors to the masts with which they are incorporated, are of great consequence, and demand a fair and rigorous investigation. It would seem at first doubtful how far the application of a continuous line of metal to the more flexible spars, would be consistent with the conditions under which such spars were likely to be placed; since it may be inferred, that changes of temperature, pressure of sail, &c., &c., would be very likely to disjoint and displace the metallic plates of which the conductor is constructed. Such objections as these can only be met by an appeal to experiment. Now, the general results of the trials hitherto made are extremely favourable to the use of the conductors; with the exception of one or two trifling instances, in some of the ships first fitted, little or no defect has occurred. As an example, we may cite the case of H. M. frigate, *Dryad*, fitted with the conducting plates, in midwinter, at Plymouth. This ship passed subsequently into a burning climate, and returned, after an absence of two years, with the conductors perfect. The masts were frequently submitted to a heavy press of sail in chase,† but “this had no effect whatever detrimental to the position of the line of metal in the masts.” Indeed, from the circumstances of the construction in many parts, (57,) there appears great reason for believing, that, when perfectly applied, the conductor is of great advantage to the mast; and will accommodate itself to, or resist, any action to which it may be subject, consistent with the safety of the mast itself.

78. The following experiments with a very flexible spar, carried on in H.M. dock yard at Portsmouth, are not undeserving of consideration:—

* See the experimental illustration of the oxidated gold.

† Commander Turner, R.N.



A B represents the flying jib boom of a sloop of war, sustained on the props A B immediately at its extremities. Length between the props 34 feet; diameter of the spar in the middle point *m*, 7 inches; diameter at the extremities, 5 inches. *cd* is a small stretcher of about a foot in length, secured about the centre of the spar: *s* a scale pan affixed to the stretcher, for the purpose of receiving the weights requisite to bend the spar to any given extent; *n* is a small pulley of about an inch in diameter, having an index, *i q*, attached to it, and moved by a fine silk line, *m n o*, attached to centre of spar at *n*; *o*, a small weight affixed to the extremity of the line, for the purpose of keeping the line tense; *i q o*, a graduated circle, placed immediately behind the pulley *n*, which by means of the pulley *n* and index *i q*, will indicate small deflections of the spar from a right line, true to the one-hundredth of an inch. The spar having been first made to coincide with a horizontal line, or nearly so, the deflections were taken due to its own weight alone, and determined by placing it successively on each of its octagonal sides, terminating the extremities A B; weights were now placed in the scale pan at *s*, and the deflections observed, independently of the weight of the spar, as far as that produced by a quarter of a ton placed in the scale, the index at the commencement of each experiment being adjusted to zero. This being determined, the spar was fitted with the copper plates, according to the method already described, (58,) and the same experiments repeated.

In the following tables are given the results of the experiments; first, *without*, secondly, *with*, the conductor applied; a weight of a quarter of a ton being placed in the scale pan *s*: A B C D, &c., represent the eight sides upon which the flexure was produced; the conductor is supposed to be inserted on the side *G*; the flexure is estimated in inches from the middle point of the spar:—

TABLE 2.

SIDES UPPERMOST.	A	B	C	D	E	F	G	H
Without the Conductor.	3,45	3,4	3,45	3,5	3,48	3,42	3,4	3,5
With the Conductor. . .	3,42	3,2	3,0	3,26	3,46	3,23	2,81	3,1

79. By this table it appears, first, that the spar was actually strengthened by the application of the conductor, in every position; second, that the greatest strength was evinced when the conductor was on the upper or concave side, as at G; next when on the lower or convex side, as at C; least, when on the edges, as at B and A; and intermediate on the oblique sides, as at D F H B. The weights requisite to be added, in order to bring the index to the same point *with* the conductor as *without* it, were as follows:—

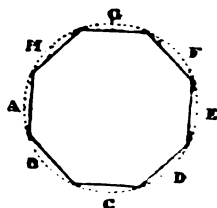


TABLE 3.

SIDES UPPERMOST.	A	B	C	D	E	F	G	H
Weight in lbs.	7	58	63	35	5	35	98	66

When, therefore, the side G, in which the conductor was inserted, became compressed, the resistance to the given point of flexure was increased by nearly one-sixth; the respective weights *with* and *without* the conductors being 560 lbs., and (560 + 98) lbs.

In all these experiments, the conductor was observed to play freely with the bending of the spar, and the elasticity of the whole appeared so perfect, that, on removing the weights in the scale-pan s, the index returned again to zero on the graduated circle, or very nearly so; the difference being very small, and no greater than those previously observed, when the conductor was not present.

The regularity of the march of the index in these experiments, as successive weights were added, from a quarter of a hundred to five hundred weight, is not altogether unworthy of notice; the reflections indicated on the graduated circle being nearly in the ratio of the weights placed in the scale-pan s, as may be seen in the following table, which contains, by way of illustration, the results obtained with the side C uppermost, and with the conducting plates attached to the spar.

TABLE 4.

Weights in cwts.	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5
Deflections of spar ...	,14	,28	,41	,54	,85	1.11	1.4	1.60	2.28	2.81

80. The objections to the use of fixed lightning conductors in ships, arising out of the expense necessarily incurred in consequence of their use, will be found, on inquiry, of much less moment than may at first be imagined, even when taken only in relation to the actual cost. If taken in relation to the amount of damage, so frequently sustained in her Majesty's navy alone, and which, as already shown, (No. 1,) involves the actual loss of the ship, the lives of the seamen, and the chance of placing the country in precarious circumstances in time of war, *almost any objection* on the ground of economy must necessarily vanish.

We will, however, proceed to the consideration of the actual cost to the country of the fixed conductors we have proposed, without relation to other circumstances.

81. The expense of the conductors in some of the ships at first fitted with them, appeared somewhat considerable: this, however, arose in consequence of the work being new, and the process of fitting not completely perfected and understood. It will, however, be immediately perceived, that the expense of the first experiments, made in almost any department of the mechanical arts, cannot be taken as a fair criterion of the *real* expense attending a new contrivance, when reduced by experience to a working system. Hence the amount of expense, as *now* likely to be incurred, is extremely reduced, the system of fitting the conductors perfectly and speedily being very complete.

82. I shall avail myself of some extracts, from a report by a gentleman who was sent from her Majesty's dockyard at Chatham, by order of the commissioners of the navy, to estimate and inspect the work, and who, being a naval engineer, and otherwise a person of great intelligence, was considered by them equal to the task.

(COPY.)

His Majesty's Dockyard, Chatham, July 9, 1834.

Sir,—In obedience to instructions received from the principal officers of this yard, in conformity with your official communication of the 1st instant, I herewith enclose a statement (in a condensed form) of what would be the expense in labour and materials of applying Mr. Harris's lightning conductors to each class of ships, supposing them fitted at the most eligible time. I have likewise ventured to append a few cursory remarks, which seemed necessary, in order to afford a criterion of what may probably be the *ultimate expense* to the public, in the event of the plan being generally adopted in the service. With this view, I beg further to transmit schemes of prices for labour, for different artificers employed on the work, upon which, it should be added, the accompanying estimate has been made.

I have the honour to be, &c., &c.,
W. M. RICE.

To G. J. Smith, Esq., Secretary of H.M. Navy, &c.

Mr. Rice then proceeds to give a complete table of particulars in the fitting each part of a ship according to the plan above-mentioned, (57,) (58,) &c., the whole of which it is not necessary to detail here. It will be sufficient to state the general results as they appear in the last column of his table.

TABLE 5.

Class of Ships.	Total for Masts and Hull.					
	Labour, &c.			Reconvertible Copper Materials.		
	£.	s.	d.	£.	s.	d.
120 guns ...	60	18	0	305	12	2
84	56	18	0	292	19	11
74	54	17	0	263	2	3
50	50	16	0	235	17	3
46	45	15	0	190	16	4
28	38	14	0	123	13	3
18	29	12	6	89	14	8
10	24	10	0	77	16	9

83. Upon this report Mr. Rice offers the following remarks :—

“ This estimate is grounded on the supposition that Mr. Harris's plan be applied to ships at the most eligible time, namely, during the progress of building or repairing, when the essential or original fastenings of the hull may be made to subserve as conductors ; much delay will be thus prevented, and many contingent expenses saved.

“ As the prompt execution of work much depends upon the facilities afforded to the workmen, I beg, without further recapitulation, to refer particularly to the arrangements proposed in the letters and drawings which I had the honour, on a former occasion, to submit for the consideration of the Commissioners of his Majesty's navy, humbly conceiving that they will greatly assist the desirable object contemplated by Mr. Harris, inasmuch as, by adopting them, the practical process will be greatly simplified, and the general introduction of the plan much facilitated.

“ It may be proper to make a few observations on the subject of expense. Referring to the accompanying condensed statement, the last column *but one* denotes the *money absolutely sunk* upon the first ship of each class fitted with lightning conductors, and the *last* column,* the outlay upon *reconvertible materials*, which must be viewed as other articles of a ship's furniture for the protection of lives and property, such as *life buoys, &c., &c.*, with due allowance for wear and tear. In taking, therefore, a prospective view of the expense, very considerable abatement will be made upon the first cost by the return of copper into store, which it is presumed will have suffered very little deterioration after many years' service; moreover, the straps over the heads and heels of masts, nuts, and screws, vanes, and vane-spindles, and the branch conductors under the beams, when removed from any ship, may all be placed in store, to be again replaced in other ships of the same class; the plates taken out of masts may probably be made serviceable by redressing, or, at most, will only suffer a loss at the rate of one penny per pound for re-manufacturing; the plates removed from ships' hulls may certainly serve for many ships successively. Hence, should the plan be generally adopted, the amount of labour will be much reduced by the appropriation of serviceable articles to several ships, so that the loss alone upon the material must not be charged again upon a second or third ship.

“ The absolute expense to the public is really the aggregate of the amount of labour, &c., as money sunk, with interest, together with the interest upon the first cost for copper for a given time. It would be difficult to assign any scale of per centage for the protection of ships by lightning conductors; but, in order to form some notion, within certain limitations, let the value of a first rate when fully equipped, be assumed in round numbers as worth £110,000, the value of property simply considered, neglecting the consideration of lives, and the dangers and disasters arising from a disabled ship, and taking the average of five years' run only upon the principal and interest, the annual premium would be less than £30, making the per centage under *sixpence halfpenny*.

* These columns are given in table 5.

"If we extend the term of years, the aliquot part of the money sunk will of course be less, and therefore the per centage will be reduced in like proportion. But if this view of the expense be carried forward to a second or a third ship, the *money sunk* will be very considerably less, on account of the diminution of labour, &c., whilst the term of years is still further increased; and therefore the premium, or per centage, would be ultimately trifling."

"Chatham-yard, July 9, 1831."

"Signed,

W. M. RICE."

83. The above report seems sufficiently explicit, and appears to include a very fair estimate of the expense, taken without reference to other circumstances; but we must not altogether neglect the saving to the country likely to be effected at various times, on the supposition that ships can, by the method above detailed, be effectually secured against damage by lightning, and which may really, on inquiry, be found of great consequence.

Let us take, by way of illustration, the damage sustained by her Majesty's ships in the Mediterranean only, in the years 1829 and 1830, and which occurred within the space of fifteen months or thereabouts. In these years the following ships suffered from lightning:—

Madagascar	50 guns.
Mosquito	10 guns.
Ocean,	} Line of battle ships.
Melville,	
Gloucester,	

I am not aware what the loss to the country really amounted to in these few cases, and therefore omit any statement not grounded on an actual knowledge of the facts. I believe it, however, to have been considerable. The Madagascar was obliged to have a new foremast, topmast, &c., and her mizen-mast was also damaged; the Ocean suffered in her main-topmast; and the Gloucester and Melville, I am informed, were obliged to return to Malta Harbour to repair damage, having been struck by lightning whilst going to sea, after a complete refit at Malta. Now, the value of a frigate's lower mast is not less than £200, and a line of battle ship's from £300 to £450; topmasts and other spars in proportion. If we add to this the expense incidental to the repairs, the detention of the ships, &c., it furnishes a most important feature, in our consideration, of the objections to the new conductors on the grounds of economy.

84. In this and the preceding papers on the protection of ships from lightning, which have appeared successively in the Nautical Magazine, it has been my endeavour to *adhere carefully to facts*, and by never deviating from the direct and safe path of the inductive philosophy, to arrive at useful conclusions on a subject of immense importance to the national interests. Few would hesitate, on due reflection, to admit the great advantages which must arise, not only to her Majesty's ships, but also to our mercantile marine, could we provide them with an efficient protection against one of the most fearful operations of nature; and although the subject has not been duly appreciated by some persons, under an impression that the chances of damage from lightning are too few and inconsiderable to warrant even the little trouble and expense requisite to avoid them, yet I trust to have made it appear that such opinions are not founded on an adequate induction, and that a judicious

application of lightning protectors on ship board is not only extremely desirable for shipping generally, but is, in a great variety of instances, quite essential to their preservation.

Plymouth, September 29, 1834.

LOCAL ATTRACTION.—*Barlow's Plate.*

WE have already taken a brief view of the subject of local attraction, and have laid before our nautical readers some concise rules for determining the amount of it in ships. We have also alluded to the invention of an iron plate or disc, by Professor Barlow, for the purpose of being so applied to the compass that it might act in a contrary manner on the needle to the attractive power of the masses of iron in the vessel, and thereby compensate for, or neutralize its effects. We will now describe the mode, recommended by the professor, of applying this important acquisition to ships navigating high northern or southern latitudes, where the effect of the deviating power on the needle is so much increased by the great distance from the magnetic equator. From a small code of instructions which accompany the plate we extract the following examples of finding the local attraction. They are similar to those which we have already explained; but as they are referred to in the directions for fixing the plate, we take them accordingly.

“ Observations on the bearing of a distant object in H.M.S. Isabella, with a view of ascertaining the amount of her Local Attraction.

Direction of Ship's Head.	Bearing of Object.	Local Attraction.	Direction of Ship's Head.	Bearing of Object.	Local Attraction.
North	N. 51° 26' W.	−1° 36'	South	N. 47° 56' W.	+1° 54'
N. by E.	50 26	−0 36	S. by W.	48 26	+1 24
N.N.E.	49 41	+0 9	S.S.W.	50 0	−0 13
N.E. by N.	48 41	+1 9	S.W. by S.	50 26	−0 36
N.É.	47 51	+1 59	S.W.	51 11	−1 21
N.E. by E.	46 56	+2 54	S.W. by W.	52 56	−3 6
E.N.E.	46 26	+3 24	W.S.W.	53 56	−3 6
E. by N.	45 56	+3 54	W. by S.	54 11	−4 21
East	45 26	+4 24	West	55 11	−5 21
E. by S.	44 26	+5 24	W. by N.	55 41	−5 51
E.S.E.	44 26	+5 24	W.N.W.	55 46	−5 56
S.E. by E.	44 26	+5 24	N.W. by W.	55 46	−5 56
S.É.	45 1	+4 49	N.W.	55 11	−5 21
S.E. by S.	45 36	+4 14	N.W. by N.	54 26	−4 36
S.S.E.	46 26	+3 24	N.N.W.	53 26	−3 36
S. by E.	41 56	+2 54	N. by W.	52 26	−2 36

“The following is an example of observations made according to the second method, on board H.M.S. Hecla, Captain Parry, May 8th, 1824:—

“ Local Attraction of H M.S. Hecla.

Direction of Ship's Head.	Bearing of Ship's Station from Ship.		Bearing from Ship, Station of Ship.		Local Attraction.	Direction of Ship's Head.	Bearing of Ship, Station from Ship.		Bearing from Ship, Station of Ship.		Local Attraction.
	S.	E.	N.	W.			S.	E.	N.	W.	
North	41°	0'	40°	50'	+ 0° 10'	South.	37°	0'	36°	58'	+ 0° 2'
N. by E.	42	20	43	51	- 1 34	S. by W.					
N.N.E.	42	0	45	51	- 3 51	S.S.W.	38	30	34	53	+ 3 32
N.E. by N.						S.W. by S.					
N.E.	46	0	50	38	- 4 38	S.W.	42	20	36	30	+ 5 50
N.E. by E.	44	10	50	36	- 6 26	S.W. b.W.	44	0	38	30	+ 5 30
E.N.E.	43	10	49	33	- 6 23	W.S.W.	46	10	39	46	+ 6 24
E. by N.	40	50	47	29	- 6 39	W. by S.	47	20	40	48	+ 6 32
East.	30	56	43	28	- 6 38	West.	47	0	41	29	+ 6 11
E. by S.	34	0	40	59	- 6 59	W. by N.	49	0	41	10	+ 7 50
E.S.E.	30	20	37	23	- 7 3	W.N.W.	49	50	42	49	+ 6 51
S.E. by E.	28	0	33	39	- 5 39	N.W. b.W.	49	40	42	58	+ 5 42
S.E.	25	40	30	21	- 4 44	N.W.	49	0	43	52	+ 5 8
S.E. by S.	27	50	31	1	- 3 11	N.W. b.N.	47	0	43	24	+ 3 38
S.S.E.	29	40	32	0	- 2 20	N.N.W.	45	30	42	44	+ 2 46
S. by E.	30	0	31	30	- 1 30	N. by W.	43	10	41	36	+ 1 34

“ Method of fixing the plate.

“ The local attraction being determined by either of the above methods, take the mean of the two deviations when the line of no attraction is N.E. and N.W. the mean of the two at east and west, and the mean of the two at S.E. and S.W.* In the present case these would be, mean at N.E. and N.W. 4° 53'; mean at E. and W. 6° 24'; mean at S.E. and S.W. 5° 17'.

“ Look for three corresponding or nearest local attractions in any one line in the following table, filled up with written figures sent with the plate, and opposite to them, in the first two columns, stand the proper depth and distance that the plate is to have with respect to the compass, that is, the first column shows the depth in inches the centre of the plate is to be fixed below the pivot of the needle; and the second, the distance it is to be placed from a plumb-line falling from the centre of the needle,—observing always to place it in the line of no attraction, which in the last example, and in the generality of cases, is fore and aft; but in the first example of the *Isabella*, it is in a line passing from the compass, at an angle of two points, with the keel of the vessel over the larboard bow.

“ In this line of no attraction, and at the depth and distance as above described, the plate may be fixed either fore or aft of the compass; but the latter is best, particularly in northern voyages, because, when thus situated, it gives considerable freedom to the needle, and causes it to traverse where it would otherwise be useless for want of directive power; and the action of the iron being neutralized by the

* In the first example, as the line of no attraction is oblique to the keel or fore and aft line, the mean of the points with the line of no attraction at N.E. N.W., E. and W., and at S.E. and S.W. will be, when the ship's head is E.N.E. and N.N.W. 3° 30'; E.S.E. and W.N.W. 5° 40'; S.S.E. and W.S.W. 3° 15'.

plate, the bearing of the needle is always correct while the latter is in its place. When it is placed before the compass, the plate is only used occasionally, its attraction is the same as the ship's, but it is in the same direction; by applying it, therefore, at any time, the amount of the attraction may be ascertained; but it is not neutralized as in the former case. It will of course be understood that the brass conical part, sent with the plate, is to be screwed upon the pedestal or compass-stand, to serve as a socket for the brass pin which carries the plate; and that when the place for the plate is determined, a hole is to be drilled through the brass pin, to correspond with the hole in the socket, in which a smaller pin is inserted to keep the plate to its place."

Attractions, determined experimentally, of Plate No.

Depth of Centre of Plate below Compass.	Dist. of Plate from Plumb Line through centre of Compass.	Mean Attraction of Plate at N.E. and N.W.	Mean Attraction of Plate at E. and W.	Mean attraction of Plate at S.E. and S.W.	Depth of Centre of Plate below Compass.	Dist. of Plate from Plumb Line through centre of Compass.	Mean Attraction of Plate at N.E. and N.W.	Mean Attraction of Plate at East and West.	Mean Attraction of Plate at S.E. and S.W.
11	10				15	13			
11	11				15	14			
11	12				15	15			
11	13				15	16			
11	14				15	17			
11	15								
12	11				16	13			
12	12				16	14			
12	13				16	15			
12	14				16	16			
12	15				16	17			
13	12				17	13			
13	13				17	14			
13	14				17	15			
13	15				17	16			
13	16				17	17			
14	13				18	14			
14	14				18	15			
14	15				18	16			
14	16				18	17			

Having now laid these instructions before our readers, it is no less our duty to lay also before them the objections which have been advanced against the use of the plate.

It is held that the method proposed for the correction of the local attraction is not founded on sound principles, though possibly, in a practical point of view, where the local attraction is of small amount, no great errors might arise from the application of the plate, so long as the vessel is on an even keel, that position in which it was originally fitted. But even in this case, if a small mass of iron, placed so near to the compass as is here required, neutralize the effect of the distant large masses in some positions of the ship, in others of necessity it must fail

to do so. In some cases it must leave part of the local attraction uncorrected ; in others it must over-correct that force, producing a deviation of the needle in a direction contrary to that which the local attraction would produce. This effect would arise from the length of the needle being extremely small, as compared with the distance of the large masses ; but great, relatively to the distance of the correcting plate. Professor Christie has pointed out in the Philosophical Transactions, that in a deviation of 13° or 14° by iron, at the distance of twenty-four inches, there was a difference of two, in the deviation of a needle six inches long, and that of one, one and a half inch long ; and the deviation of this again differed from the deviation of a needle of three inches long. If the vessel heels much, the resultant of the ship's attraction and that of the plate on the needle will be considerably inclined ; and cases may therefore occur where the correcting plate might increase the effect which it was intended to counteract.

BAR OF LIEBAU.—*Depth of Water.*

HER Majesty's consul at Liebau, Mr. F. Kienitz, has addressed a letter to government respecting the depth of water on the bar of Liebau, which has been placed in our hands for publication by the Admiralty.

The consul has added his own testimony to that of Captain Dale, (of the *Thomas* of Newcastle,) to the erroneous depth stated in Norie's *Baltic Directions*. The following vessels are mentioned by Mr. Kienitz to have been built in the course of this year at Liebau, which, as they can leave and enter the harbour laden, afford further testimony of the sufficiency of water over the bar, namely, two of 120 tons, one of 150, one of 180, one of 225, and one of 375.

The following is the affidavit of Captain Dale :—

*British Consulate in and for the Duchy of Courland,
Empire of Russia.*

On the { 28 day of July,
9 day of August, } 1837, appeared before this British consulate office, Mr. W. V. Dale, master of the British vessel called the "*Thomas*," of Newcastle, and deposed, that although by the piloting directions for the Cattegat and Baltic or East Sea, &c., compiled from the latest surveys by J. W. Norie, hydrographer, &c., which were printed in London in the year 1826, and were, in original, produced by the said deponent, informations are given that "the bar of Liebau has nine feet over it, and is calculated only for small craft;" he, the above deponent, considers it as a duty of his to contradict the said statement of the piloting directions, and to declare the same to be wrong and erroneous, and to be prejudicial to the said port ; having fully and impartially convinced himself that the depth of water over the bar is fourteen feet English measure, which has been the prevailing standard ever since the spring. In testimony of the truth of this declaration the said deponent has signed his name hereunto.

Liebau, the day and year above written,

Signed, W. V. DALE.

True copy signed, FRANCIS KIENITZ, *Consul.*

Naval Chronicle.

LAUNCH OF THE MODESTE.—This interesting event took place at Woolwich. The novelty of the scene attracted a vast concourse of spectators from town and the country on both sides of the river. The sheet of water in front of the dock was covered with craft of every description. Several steamers had come down from town, full of passengers, to witness the spectacle; and those vessels, as well as the ships anchored near, had their flags hoisted.

Around the stocks of the vessel was placed an amphitheatre of seats, covered with the Union Jack, for the accommodation of those ladies and gentlemen who had been invited within the enclosure. There were also galleries by the sides of the vessel which were covered with another crowd. As the preparations for the launch advanced the spectacle became exceedingly gay and animated.

Amongst the officers in our vicinity were, Admiral Elliot, Admiral Sir Charles Adam, Sir Joseph Maclean, Sir John Louis, Captain Eyre, and many other veterans. Mr. Wood, M.P., secretary to the Admiralty, was also present.

An amateur band, composed of young men attached to the dockyard, played a series of lively airs in very good style.

At the moment high water approached, the workmen redoubled their exertions in striking away all impediments, and in lubricating the cradle, that the descent of the vessel might be as smooth as possible. All being ready, an intrepid few, including half a dozen ladies, remained in the vessel. The signal was given; the band struck up, "God save the Queen;" a lady poured an orthodox bottle of wine on the timbers, and called her "the Modeste;" the trigger was struck away, and the new ship, bearing the Royal Standard and the Union Jack, gracefully swept into the waters, and was turned round amidst the cheers of the spectators.

The Modeste is a corvette, pierced for 18 guns, and built upon the suggestion of Admiral Elliot, nearly similar to the plan, but upon reduced lines, of the French frigate La Modeste; a ship of 36 guns, which that officer commanded when captain off the East India coast, in the years 1808, 1809, and 1810. The peculiarity of the original Modeste was that, for a considerable breadth parallel to the keel on both sides, the planking rose into a concavity, like the section of a large tube, and so allowed the keel to cut its way through the water with less resistance. The rest of the bottom flattened upon the water in a great degree. So far as the diminished size of the imitation would admit, these are the characteristics of the new corvette. Her draught will be one-tenth less than other vessels of the same size, and the great question to be tried by her is, how she will sail on a wind. The corvette has also chain plates along the sides, instead of the link chains generally used; from which a series of ropes, in closer lines than hitherto, will ascend to the shrouds, thus presenting a narrower front to the enemy's fire, and lessening the danger of the rigging.

The dimensions of the *Modeste* are, in length, 107 feet on the keel, and on deck 120 feet. She is 30 feet in the beam, and 32 feet from one outside to the other. The depth of the hold from the main hatchway is 14 feet 4 inches. Her frame and gunwale are of English oak, and the planking of the bottom of east country (Dantzic) timber. Mr. Laing is the builder. She is to be commanded by Captain Eyre; and her company, including the marines, will be about ninety men. It is not more than four months since she was placed on the stocks. The copping of her bottom will proceed forthwith, and she will be got ready for sea with expedition.

Before the concourse of spectators dispersed, they were permitted to amuse themselves in inspecting the stupendous machinery of the smithy and other departments of the dockyard.—*Times*.

Admiralty, July 24th, 1837.

MEMORANDUM.—Her Majesty has been graciously pleased by her order in council of the 19th instant to establish the following regulations, in regard to the rank, pay, and superannuation of engineers in Her Majesty's steam vessels, viz. :—

Appointment.—Engineers to be appointed by warrant from the Lords Commissioners of the Admiralty, or by commanders-in-chief on foreign stations in vacancies occasioned by death, in the same manner as other warrant officers of the navy are now appointed.

Rank.—Engineers to be distributed into three classes, and to rank next below carpenters, and with each other according to their standing on the official list.

Pay and Allowances.—First class engineers £9 12s. a month, and 6d. a day for each apprentice or engine boy that may be placed under his instruction. Second class engineers £6 16s. a month. Third class engineers £4 18s. a month. When serving within the tropics, engineers are to be allowed half the amount of the pay of their respective classes in addition, during the time the steam is up, or while they are employed on repairs. They will also be entitled to extra pay as warrant officers, according to the scale established in the regulations for her Majesty's service at sea, when employed to repair the defects of other steam vessels than those in which they are serving.

When employed by order of their lordships in steam vessels or in dockyards, the foregoing is to be considered as their full pay; but when borne on the books of the guard ships of the ordinary of the different ports for harbour service, and not so employed, engineers are to be paid as follows :—

First class engineers	£6	6	0	a month.
Second class engineers	4	4	0	„
Third class engineers	3	3	0	„

Superannuation.—To be upon the scale established for warrant officers of the Royal Navy by order in council of the 25th Nov., 1816.

No person to be deemed eligible for an appointment as engineer until he shall have passed such examination as the Lords Commissioners of the Admiralty may from time to time think proper to require, before

the chief engineer and inspector of steam machinery, or such other officer as they may appoint for that purpose.

Four classes of apprentices or engineers' boys are also to be established in the service of her Majesty's steam vessels at the following rates of pay:—

First Class.....	£1 14 0	a month
Second do.	1 6 0	„
Third do.	1 3 0	„
Fourth do.	0 14 6	„

By command of their Lordships,

C. WOOD.

REGULATIONS AS TO THE QUALIFICATIONS AND EXAMINATION OF ENGINEERS IN HER MAJESTY'S SERVICE.

Admiralty, August 14, 1857.

First engineer.—No person will be considered qualified to hold the warrant of a first class engineer, who is not able to keep accounts and to make notes in the log of every particular of the working of engines and boilers.

He must be thoroughly acquainted with the principles on which the machine works in all its parts, and capable of setting right any defects which may arise in the engine or boilers; and also to adjust the length of the various rods and motions, slide valves and eccentrics.

He must have been at sea as an engineer, and be capable of working, starting, and stopping the engines, &c., and able to make rough sketches, correct in proportions, of any part of the machinery; and willing to take charge of and teach the apprentices.

Second engineers must not be inferior in education to the first engineers, and but little behind in mechanical acquirements, with the exception of the nice points of adjustment of slides, parallels, motions, &c.

Third engineers should be equal in education to the second and first engineers, and will be selected either from the senior class of apprentices, or appointed direct from a factory. They must be accustomed to engine work, and acquainted with the principles of the engine, with the names of all its parts, their uses, and effect in producing motion.

Examination.—No person will be deemed eligible for an appointment as engineer, or for promotion to the second or first classes, until he shall have passed an examination on the points above stated, or on such further points as the Lords Commissioners of the Admiralty may from time to time think proper to require, before the chief engineer and inspector of steam machinery, or such other officers as they may appoint for that purpose.

REGULATIONS AS TO THE INSTRUCTIONS AND QUALIFICATIONS OF ENGINEER'S APPRENTICES.

Fourth Class.—Boys on entering the service as fourth class apprentices must not be less than fourteen years of age. They must be of good moral character and sound bodily constitution, able to write and to work a question in the Rule of Three.

They will be kept one year in the dock-yard at Woolwich, where they will receive the necessary instruction, and their capabilities will be ascertained.

Third class.—At the expiration of their third year of service the boys will be considered eligible for removal to the *third class*, if on examination they appear to have made themselves acquainted with the names and uses of every part of the engine, gauges, barometers, &c., and the reasons for blowing off the boilers.

Second class.—If boys, on the fourth year from their entrance into the service, being then eighteen years of age, be acquainted, through the instruction of the chief engineer, with the whole principle of the engine and boilers, with the use of all the various tools, and with the mode of effecting repairs, as far as they are performed on board; if they be able to take off and replace any of the working parts; pack the slide-valves, pistons, piston-rods, and stuffing-boxes; if they understand the action and condensation of steam, the return of the water into the boilers, the construction of all the pumps, and of the feeding and blowing off apparatus, safety valves, &c., and can chalk out roughly the outlines of the engines and wheels, and have become generally useful, they will be considered fit for removal to the *second class*.

Boys of the second class having attained the fifth and last year of their apprenticeship, will be again transferred to the dock-yard cheque, there to be solely under the direction of the resident engineer of the establishment, where a more extended practical knowledge, &c., can be acquired. A portion of their time is to be passed at the forge, the brazier's shop, the lathe, and the foundry, under proper instruction; a general acquaintance with each being necessary for an engineer. They are also to improve themselves in arithmetic.

First class.—At the expiration of the fifth year, having then reached the age of nineteen, if, on a strict examination, the apprentices be found qualified for the appointment of third class engineers, they will be removed to the list of the *first class*, and be considered candidates for promotion, and will take precedence according to conduct and abilities.

By command of their lordships,

C. WOOD.

Admiralty, September 14, 1837.

MEMORANDUM.—With reference to the memorandum of the 24th July last, which directs that the first class engineers shall receive an addition of sixpence a day to their pay for each apprentice or engine boy that may be placed under their instruction, the Lords Commissioners of the Admiralty hereby give notice, that this allowance is to be granted only on the production of a certificate from the commanding officer, under whose orders the engineers may be actually serving, that the boys have been duly instructed in conformity with the regulations established by their lordships' order of the 14th August, 1837. And their lordships are further pleased to direct that such certificate be never granted, unless the superintendent of the dock-yard, or the officer in command of the vessel be thoroughly satisfied, from personal observation, that their lordships' intentions have been strictly carried into effect.

The new scale of pay for engineers and apprentices is to take place from the 19th July, 1837, the date of the order in council, and all

engineers must produce a certificate from the commander of the vessel in which they are serving, that their store accounts are clear, before they can be paid, in the same manner as gunners, boatswains, and carpenters.

By command of their lordships,

C. WOOD.

PROPOSED LIGHT ON THE MOUSE SAND.

MR. EDITOR,—Public and private prejudice against steam navigation, if not entirely, is, we are happy to say, now almost, removed; and, although it had in this country many difficulties to contend against, no improvement we know of has been more beneficial towards the general prosperity of the kingdom. The markets of Liverpool, Manchester, Bristol, and other towns and villages in the neighbourhood, are every morning supplied with the surplus produce of Ireland. The different London markets are ever open to Scotland, and the quantity of beef, mutton, game, eggs, &c., every morning received in Leadenhall and Newgate markets, from Inverness, Aberdeen, Montrose, Dundee, Edinburgh, and Berwick, is altogether inconceivable. In fact, the power of steam has produced the most extraordinary and astonishing effects towards enhancing the value of agricultural produce in the sister kingdoms; for by the facility given by it to navigation, and the certainty of dispatch, farms in Ireland and the north of Scotland, formerly of little value from their distance from market towns, are now enabled, by an easy, safe, and cheap conveyance of their produce, to compete with farms in England, situated thirty or forty miles from London. Our cotton and silk trade, too, of late years, has been much benefited by the regularity and dispatch given to it by steam navigation; and we have many occasions of knowing Paisley and Glasgow goods exposed for sale in the London warehouses on Monday that only left the manufacturer's premises on the morning of the previous Saturday.

Since steam navigation, then, has become so highly advantageous to the nation in general, it surely is the duty of all public authorities entrusted by charter, or otherwise, whose business it is to watch over the safety of navigation, to render it every possible facility in the prosecution of its lawful employment.

These remarks have been called forth by reading, in your last number, an article by Pharos, on lighthouses, which, if correct, shows the absolute necessity of another light being immediately placed in the situation there pointed out. I would also suggest, if expense be an item of importance, to remove the Stamford light-vessel; or, if not, to place her on a point more beneficial to the shipping interests. At present, and for years past, the Stamford channel has been filled up; consequently rendering *the light of no use whatever*. The light-vessel recently placed in the Gat-way is likewise considered of little, if any, use; for no man in his senses will ever run for it from sea in a gale of wind; and if from the roads, where there is good anchorage with the wind, with any hold of the land, the bearings of the buoys are generally ascertained before dark. I am of opinion, therefore, that were the Gat-way light placed where the Sand-head buoy now is, and the Stamford light on the Holm-head, much good would result to the shipping interest. The light on the Sand-head would guide ships from the northward through the Cockle channel (which no vessel can now

take after dark) into the roads, where she may either anchor or proceed through the south channel. The light on the Holm-head would protect ships from approaching in the night too near that dangerous sand-bank, besides being a kind of guide to ships intent on running through that channel in night-time.

A SEAMAN.

THE *Victor*, 18, Commander Crozier, returned to Sydney, on the 27th December, having been three months absent, visiting various South Sea Islands, in the course of which he picked up nine seamen belonging to different whalers, some of whom had suffered much from the treatment of savages. A French brig had been captured some short time since, and the captain and part of the crew murdered by the natives of the Fejee Islands. It appeared, however, that the outrageous and unprincipled conduct of the Europeans had brought the punishment on themselves; and the same may be said of the *Active*, English vessel, two of the crew of which vessel are now restored to civilized life, their shipmates having been murdered two or three years ago. The officers of the *Victor* speak very highly of the natives they have visited on various islands during the trip, who exhibit the rapid march of improvement through the exertions of Missionaries; a considerable drawback to whose exertions exists in consequence of the too rigid discipline of the natives; the Missionaries appearing to require too much of them, and treating them as if they had been born in a civilized country. Many of the natives complained of their dances and other amusements being prohibited; and hence, the instructions of the Missionaries in many instances had been disregarded. The voyage of the *Victor* altogether has been one of peculiar interest.—*Hants Advertiser*.

THE MEDWAY STEAM-SHIP.—The wreck of this vessel, which it may be remembered took fire on a voyage to the Nore a few weeks since, and was run ashore at Northfleet, was sold at Lloyd's, by order of the directors of the Norwich Union Assurance Company. It was stated, that she was about 210 tons, builders' measurement, with two forty-horse power steam engines, of the best construction, but slightly injured; the after-part of the vessel burnt. Included in the sale was the chain cable, two anchors, masts, sails, cordage, and stores; but the auction, we understand, produced no more than £1,510 for the whole.

INDIA-RUBBER CABLES.

MR. EDITOR,—It is really wonderful to contemplate the improvements and inventions which the ingenuity and persevering efforts of the human mind have accomplished within the last thirty years: and not least among the useful products of the vegetable kingdom which have been brought into requisition is, that singular substance obtained from the *mimosa catechu* or *caoutec houé* (a term truly barbarous, and however euphonious to the ear of a South American Indian, voweled as it is, that defies the articulation of an English tongue;) why not write it by the appropriate compound *catch-yow*? We find that it is now incorporated with the materials used for various articles of domestic

use ; has it ever been applied in the construction of cables* for ships? The elasticity and spring which it gives to the materials with which it is worked up, seem to point it out as a fit ingredient in hempen cables ; as, although the strength of the cable might not be increased by it, the chances of its parting from strain would be lessened, as in those formed from *coir* and *bass*.

It is a question too, if the proportion could be nicely adjusted, whether it would not be of use in the manufacturing of rope for shrouds, stays, &c., a little spring in the standing cordage has been considered as beneficial in assisting a vessel's sailing quality, than otherwise ; at least whether agreeable to mechanical theory or not ; it was often tried by the French vessels during the late wars. Indeed in one ship this principle was carried so far as that her rigging was set up with belaying laniards ; she had also sliding steps to her masts, and her partner-chocks were moveable at pleasure, so as to give free play to the whole of the sticks ! The wonderful properties of this superior craft, the celebrated *Brave*, (afterwards the *Barbados* in our service, and lost on Sable Island—that *bank without "a shiner!"*) must be in the remembrance of many of your readers, old West India stagers.

Would it not also be of use in the manufacture of bread-bags,† considering its antipathy to water ? Of these articles, it has often been a matter of surprise that they were composed of the very worst of materials which could have been selected to contain provisions so obnoxious to damage and deterioration from moisture. The waste and consequent expense attending the transport and stowage of this paramount article of food, from wet, weevils, cockroaches, rats and mice, must have been great during the late wars. No doubt this has been remedied ; we recollect to have heard something about iron boxes. But if no improvement has taken place, India-rubber bags would be an excellent substitute for the trash formerly supplied, and prevent, in all probability, a "southerly wind" arising from the effects of the "varmints."

BEN. CABLE.

TIDES.—*On measuring the vertical rise and fall at sea.*

Gravesend, June 22, 1837.

MR. EDITOR,—In reference to Professor Whewell's queries Nos. 9, 10, 11, in your February number I beg to offer for consideration, what has for a long time appeared to me, a practicable and simple plan to accomplish the object in question, by adding further to the usefulness of all the light vessels round our coasts.

Have fitted amidships in these vessels (abaft the main or lantern-mast) from the upper deck, down through the bottom, a strong lead pipe, or other material proper for the purpose. From the bottom of the hold on the other side of the keelson, through the upper deck, fit a wood trunk. On deck between these two, or attached to the mast, have a light easy travelling wheel ; drop the sounding weight with line down the pipe to the bottom, take a round turn of the line round the wheel, and attach a small lead, of sufficient weight to keep the line quite taut from, or instantly yield to, any resistance from the sounding weight. It

* We believe it has been successfully applied in the manufacture of rope with the New Zealand flax, but we have not heard of its application in that of cables. Perhaps those enterprising commercial gentlemen the Messrs. Enderby will inform us.

† And more important still in the clothing of seamen.

would therefore rise and fall with the tide and vessel kept steady, in the wooden trunk on the other side.

The wheel should have a "tell-tale," or indicator, that the person watching it might ascertain, at the earliest moment practicable, the cessation of the tide.

The level of the water in the pipe would not, I think, be very often materially disturbed from rolling, pitching, &c., being in the centre of the vessel; therefore the wet line would show the correct sounding, or "ebb and flow."

To the steady and intelligent of the crews of these vessels, it would afford in each tide an hour's amusement, and a break to their general monotony, as well as useful information. The master or mate, while in charge, should keep a proper tide journal, including the sets, wind, and weather.

The sounding weight, should be similar to a weighing weight, to sit firm and concentrated upon the ground, particularly as where the stream of tide varies much during the last quarter, it would probably be necessary to raise it occasionally from the ground; the apparatus should be removable, and kept dry, &c., when not in use. This suggestion may, at least, and I hope will, lead to something better.

Your most obedient servant,

BEN. COOLEN.

[We insert the foregoing proposal of our correspondent, as we do not wish to check the ardour of his inventive genius, although we doubt his experience in *nautical* matters. He must surely see that in consequence of the varying power of the stream of tide, the occasional sheer of the vessel from various causes, and her position over the ground, changing as the tide rises, he will never succeed in measuring the vertical rise, nor, in our opinion, any tolerable approximation thereto, to make it worth while to try the experiment, and it will be moreover necessary to haul up his "sounding weight," line and all when the vessel tends to the "ebb and flood." This however might be readily done, but we leave the former observations to the consideration of our correspondent, with the motion of the vessel in a seaway, which would serve not a little to perplex the observer.—Ed. N. M.]

LIGHTNING CONDUCTORS.—Mr. EDITOR,—I have read with much interest the scientific papers of your learned correspondent, W. S. Harris, Esq., F.R.S., upon the imperfect construction of the lightning conductors at present in use on board ships, and his comments upon a more perfect application of the results of science, as a defence against danger, which were elucidated in your last number by a diagram.

You will perhaps allow me to suggest, that a perfectly-connected conductor may be obtained, according to the laws of electricity expounded by Mr. Harris, by the employment of copper wire, laid up after the manner of the wire rope lately introduced.

To fit a conductor in this way, it would be simply necessary to make one end fast at the masthead, and lead the other down into the water, by an out-rigger clear of the side. I conceive that the advantages of this plan, over that already proposed, are these: its simplicity of construction; its facility of being shifted when a spar is carried away, or when it is necessary to send a mast down; and that it can also be easily coiled up, and stored in a small compass, when out of use.

I believe the power of a conductor is measured by its extent of surface; and if this be correct, the rope of many wires would, having a

greater metallic surface than a bar of the same size, be at least as effective for the purpose as the connected lamina proposed by Mr. Harris, to whose consideration I have the pleasure, as a practical seaman, of offering my suggestions.

I am, Sir,
Your obedient servant,
E. ROUTH, H.C.S.

Jerusalem Coffee House, Nov. 4th, 1837.

EXPERIMENTS.—*The step-wheel.*—Mr. Editor,—Will you allow me to inquire what has become of the experiments made on the African's wheels during the past summer?

Surely I am right in supposing, that as such being made by the *public* servant, in a *public* vessel, and at the *public* expense, they are entitled to the benefits arising from the knowledge acquired thereby.

Judge, then, my astonishment when I learn they are in the possession of one person,—aye, and apparently hermetically sealed up,—who has absolutely refused to enlighten any one with the result. Really, sir, this, to say the least, is impolitic and ungenerous. Impolitic, because it gives some colouring to the insinuations of malicious individuals, “that the results are futile;” ungenerous, because it is denying that to the public for which they have paid. I must hope that this decision of the experienced and amiable person under whose superintendence these experiments were made, may be overruled, and that your columns may be made the channel of their communication to the public, that their value may be properly estimated.

I am, Sir, &c.,
HIRAM.

London, 10th November, 1837.

REPORT ON THE LIGHTNING CONDUCTORS OF H.M.S. BEAGLE, 1831-6.—Previous to sailing from England in 1831, the Beagle was fitted with the permanent lightning conductors invented by Mr. Wm. Snow Harris, F.R.S.

During the five years occupied in her voyage she was frequently exposed to lightning, but never received the slightest damage, although supposed to have been struck on at least two occasions.

At each of these times, at the instant of a vivid flash of lightning, accompanied by a crashing peal of thunder, a hissing sound was heard distinctly on the masts, and a strange, though very slightly tremulous, motion in the ship herself, indicated that something unusual had happened.

No objection, which appeared to me valid, was ever raised against them; and were I allowed to choose between having masts so fitted and the contrary, I should decide in favour of those with Mr. Harris's conductors. Even in such small spars as the Beagle's royal masts and flying jib-boom, the plates of copper held their places firmly, and increased rather than diminished their strength.

The Beagle's masts, so fitted, answered well during the five years' voyage above mentioned, and are now fit to go on another equally long voyage.

Signed, ROBERT FITZ ROY,
Late Captain of H.M.S. Beagle.

Ship Colombo, East India Docks,
November 12, 1837.

LIEUT. RODGER'S ANCHORS.—MR. Editor,—As from the great circulation of your Magazine the following is likely to become generally known, I beg to acquaint you, for the information of the shipping interest, that I have had one of Lieut. Rodger's patent small palmed anchors, for a period of two years and a half; during which time, I have used it in Table Bay, in the winter season, for two months; and for two months in the Roads of Colombo; and I do not hesitate to say, that I think it superior to any anchor now in use. In this opinion I am the more confirmed, by a trial of it in May last, at the Sand Heads, in the S.W. monsoon; when, on bringing up, we found a link of our chain partially ruptured, and we were obliged to ride out a strong breeze, with a heavy sea, with only thirty-six fathoms of chain. Two other ships, one the *Thalia* of Liverpool, thinking it dangerous to anchor, bore up for Saugor Roads, whilst we rode out the breeze without once starting from our position. The insertion of the above account will oblige,

Your most obedient servant,
D. MACKELLAR,
Lieut. R. N., and Commander of the above ship.

Paul's Wharf, 23, Upper Thames Street,
14th November, 1837.

Sir,—The merits of my patent small palmed anchors are now so generally acknowledged, that I conceive I should neither be doing justice to myself nor to the shipping interest, were I not to avail myself of every opportunity of presenting it to the notice of the public. Indeed I have been repeatedly blamed by my nautical friends for not giving it more publicity through the periodical press, as scarcely a gale occurred, during the last three winters, without giving fresh proofs of its superiority over the anchors on the old plan. I have now therefore to request, that you will do me the favour to insert in your widely-circulated Magazine the following letter, addressed to the owner of the "*Barefoot*," Newcastle trader, from whom I have just received it. And in conclusion I beg leave to state that, at this moment, there are actually in use upwards of eleven hundred anchors and kedges on my patent principle, on board vessels of every description in the merchant service, from the "*Minerva*," Indiaman, of 987 tons burthen, down to the smallest coaster.

I am, Sir,
Your most obedient servant,
WM. RODGER.

(Copy.)

London, Nov. 6, 1837.

Sir,—This is to inform you of the safe arrival of the *Barefoot*, at the Tower, after a long and heavy passage. We were riding in the Sledway, under the Rough Sand, from Tuesday till Friday last. On Wednesday, we had a heavy gale from S.W. to W.N.W., riding with

eighty-five fathoms of chain : many ships lost anchors and cables close to us, but our anchor never started. I have therefore reason to praise Lieut. Rodger's patent small palmed anchors.

*To Edmund Graham, Esq.,
Newcastle-upon-Tyne.*

I remain, &c.,
THOMAS WATSON.

Admiralty, May 15th, 1837.

MEMORANDUM.—The Lords Commissioners of the Admiralty being anxious to extend the advantages of education to the petty officers, seamen, marines, and boys of the fleet, are pleased to authorize one additional rating of first class petty officers in every ship of her Majesty's navy, to be called "Seaman's Schoolmaster."

The person to fill this rating is to be entered or selected by the commanding officer of the ship, with the approbation of their lordships. Vacancies occurring abroad may be filled up from the ship's company, if a person properly qualified be found on board ; if not, one may be taken from any other ship, with the consent of his commanding officer, and the approbation of the senior officer present.

The Seaman's Schoolmaster is to be competent to teach reading, writing, and arithmetic ; namely, the four first rules, the Rule of Three, Vulgar and Decimal Fractions, Logarithmic Arithmetic, Plane Trigonometry, and to keep a ship's reckoning at sea.

He is to be examined, as to his fitness, by the naval instructor of the flag-ship of the port where his ship may be fitted out, or by some other competent person, to be named by the port admiral, who is to give a certificate of his fitness, which is to be transmitted to this office before the appointment is approved.

Any petty officer, seaman, or marine, who may wish to avail himself of this means of education, is to be taught by the Seamen's Schoolmaster, and all the boys are to be put under his instruction.

Arrangements are to be made by the commanding officers of her Majesty's ships so as to allow the men and boys to attend, consistently with the proper discharge of the duties of the ship.

The pay of the Seamen's Schoolmaster is to be in first rates £2 12s., second rates £2 10s., third rates £2 8s., fourth rates £2 6s., fifth rates £2 4s., sixth rates £2 2s, below sixth rates £2 1s.

By command of their lordships,

C. WOOD.

DARTMOUTH LIGHT.—A fixed light of a deep red colour has been established on the tower of the castle on St. Petrox Point, at the entrance of Dartmouth harbour, at the height of forty-nine feet above the level of the sea, (high water,) and visible when bearing between N.W. $\frac{1}{2}$ N. and N. by E. at the distance of seven miles. The light was commenced on the night of the first of September, and will always be lighted from sunset to sunrise, excepting in the months of June, July, and August. It will be found to show the most brilliant light when seen on the bearing, midway between those above given. We observe, by the *Shipping Gazette*, that the apparatus which was constructed by Messrs. Wilkings of Long Acre was presented to the port by John

Henry, Esq., the member for Dartmouth, and erected in the tower of the castle, for which purpose an enlargement has been made by permission of the board of Ordnance.

CORONER'S INQUESTS.—We have been favoured, by a correspondent, with the following remarks, which will no doubt interest our readers :

Mr. Editor,—I did not see your first notice of the collision between the Monarch and the Apollo, and have only by accident seen your subsequent remarks, and the letter of your correspondent “An Eye Witness.” I cannot agree with your expressed opinion of the necessity of a jury of nautical men. I am of opinion that the province of a jury is to judge of the value of the evidence adduced before them ; and, after duly weighing it, to return a verdict according to such evidence. Any jury, therefore, whether coroner's or other, should be formed of individuals of a state in profession, society, or business, calculated to ensure such a degree of education or habit of mind as will fit them to weigh the evidence offered on either side ; and I cannot help feeling that anything like a preponderance of professional men of any kind, in particular, would be as great an evil as that of which your correspondent, and you also, complain, which latter you will find to arise in the following way. You are no doubt acquainted with the machinery of summons of a coroner's jury ; to some of your readers, however, it may be new.

The coroner, having received notice from the parish authorities, through the “beadle of the parish,” of the necessity of holding an inquest, issues a precept into the hands of the said functionary, whose station in society is pretty well known.

Mr. Bumble, being *usually* fond of good eating, and invariably so of good drinking, of course keeps a good look-out for some treat on these occasions : there is always a jollification after an inquest. In fact it is well known that *Mr. Bumble* never summons any one to *serve* who is not somewhat of a boon companion *for him*.

Individuals fully qualified are, it is true, frequently summoned ; but the official eyes are easily closed at one shilling each ; and a message from any gentleman, so silvered, that he is out of town, or the same information given personally, is sure to procure him exemption.

I am acquainted with several gentlemen who make a practice of paying their 2s. or 2s. 6d., to avoid being thrown into the company they are almost sure to meet with on such occasions. There is a practice at coroners' inquests of allowing the jurors to call for and have jorums of hot and cold grog, and other swizzle. This was particularly the case at the inquest held on a waterman, said to have been killed by the new police at Shadwell, about four years since. This was, I am aware, calculated to clear brains, which were, to my personal knowledge, none of the clearest at any time ; but still I must object to it, and I think every one will agree with me in deprecating such conduct. Refreshment certainly is necessary ; but I do not think that a thick head will be made clearer by washing the inside of it with brandy, &c. Again, on any occasion where much interest is excited, the jury are so intermingled with spectators and interested parties, that I am greatly

inclined to doubt whether an impartial and uninfluenced verdict was ever returned on such occasions, constituted as the Juries are. I pledge myself for the following anecdote: An inquest was held on the body of a young man, who met his death by accident; the jury levied a heavy deodand. The coroner took the verdict, and left the place where the inquest had been held. Within an hour it was publicly declared by one jurymen, and confirmed by the remainder, that they had been influenced in their verdict by the hope of benefiting the family of the deceased, whose support he certainly was, in the vain expectation of getting a deodand out of the hands of government, after it had once been paid in. Need I add, that the jury was, to a man, composed of personal, and some intimate, friends of the deceased? I agree that the feeling was to be admired; but is this the province of a jury? and how much justice is comprised in this proceeding, of which, and the preceding circumstances, I was, Mr. Editor,

AN EYE AND EAR WITNESS.

[While on this subject, we take the opportunity of expressing our regret at having allowed our correspondent, "An Eye Witness," in our last number, to use an expression, wearing the appearance of an insinuation, unfavourable to the testimony of Mr. Granger, at the coroner's inquest, occasioned by the collision of the *Monarch* and *Apollo*. The expression entirely escaped our notice, and we trust that our readers, as well as Mr. Granger, to whom we have not the pleasure of being personally known, will consider it an oversight on the part of the Editor of this journal, and that it was by no means his intention to throw the smallest doubt on that gentleman's word, more particularly on so grave and important an occasion as that in question. Mr. Granger, doubtless, had his feelings on this melancholy occasion, and gave testimony which will hereafter redound to his honor and humanity.—Ed. N.M.

STEAM-BOAT COLLISIONS.—Mr. Editor,—The Peninsular Company's steamer, "*Tagus*," coming up the channel last week, came in contact, during the night, with the *Royal William*, (also a steamer,) when both ships received considerable damage, and it may be considered fortunate, that one, or both, did not go down; which no doubt would have been the case, had they not been strong ships. This accident clearly arose from want of some proper understanding as to which side steamers on meeting are to pass each other. The captain of the *Royal William*, having assumed, that the custom of the Clyde and Liverpool ships was to be followed, he attempted (so he states) to leave the *Tagus* on his starboard side. The other commander, had he happened to have followed the same rule, would also have put his helm a starboard; instead of which he (very probably following the recommendation of the Pilotage Committee) adopted the contrary course, and the consequences were very nearly fatal to both ships. Again I ask, how long are the lives of her Majesty's subjects to be put to risk by the want of some proper regulations for the guidance of steamers?

I am, Sir, your most obedient Servant,

A SKIPPER.

London, Nov. 13, 1837.

The following paragraph from the Plymouth journal alludes to this accident. The frequent occurrence of these disasters, shows in strong colours, the necessity of some law being passed for the guidance of

steamers meeting each other. If they can run foul of each other at sea, how much more are they likely to do so, and have unhappily done so, in rivers. In our last volume we printed the report of the Pilotage Committee, and in p. 307, will be found the various clauses respecting the navigation of steam vessels, in addition to our own correspondent's valuable suggestions on the subject. We hope soon to hear of some wholesome regulations passing into a law.

“ The Royal William steamer was run foul of, on Tuesday morning, off the Isle of Wight, by a large three-masted steamer, the name of which has not been ascertained. The Royal William had the usual lights hoisted, and the other vessel held on her course immediately after the collision. The bowsprit of the Royal William was carried away, as well as a part of the knee of her head, and she received some other trifling damages in the bows. None of the cargo was injured, and but one or two of the passengers were aware of the accident. She arrived safely in this port on Tuesday, and repaired the damages during the succeeding night and day, and then pursued her voyage.—*Plymouth Journal*. ”

MERCHANT SEAMEN'S ORPHAN ASYLUM.—The tenth annual report of this Institution, read at the general meeting of the governors, held at the City of London tavern, on the 31st day of August, 1837 :—

The committee of management avail themselves of the opportunity afforded by the presence of the governors of this institution, to announce that the number of the children at present on the establishment is seventy-one; namely, forty-two boys and twenty-nine girls, exclusive of this day's election.

That the charity continues to excite the attention and patronage of many of the benevolent in the commercial world, particularly among the shipping interests, although it has by no means attained that eminence its pretension to public patronage would fully justify; and to the fact of its not being better known must be attributed its present comparatively humble position in the scale of British philanthropy. The committee appeal with feelings of the deepest anxiety to the head and heart of every British subject, calling upon them to declare themselves *content* or *not content*, that England, wealthy England, the emporium of the world, should have the credit of fostering only seventy of the orphans of the most helpless, indigent, yet useful, class of the community—our merchant mariners! The committee, with all due respect for the honour of our national character, feel it to have become their imperative duty to “ cry aloud, spare not, lift up their voice like a trumpet,” and call upon England to do her duty towards the indigent of the maritime world; to remember that much of her national splendour, fame of arms, mastery of the seas, and commercial superiority, are derived from the labours of the skilful, the honest, the hardy, merchant-seaman; and will she allow this useful class of men, these caterers for our comforts, our luxuries, yea, for the very necessaries of our existence, to say, “ In taking charge of your merchandize we traverse the wide seas; in faithfully executing your commands we peril our lives and place in jeopardy our families. To discharge the important trust thus

imposed upon us, many of us are prematurely hurried into a watery grave, or anticipate an early one, in a broken constitution in your service; and when the silent receptacle for suffering mortality receives us, shall we leave our little ones, our helpless little ones, our friendless and oftentimes houseless orphans, to the keen blast of unprotected poverty, without a house, without a home or a friend, in this brilliant city—this land of charities?" "O tell it not in Gath, publish it not in the streets of Askalon," that England has charity for all but her own; that the indigent of every country, complexion, and character, on the globe, participate largely in her benevolence; but these helpless legitimate claimants—the merchant-seamen's orphans—can find room to the extent of only three score and ten babes, while their fathers' employers wade in wealth, soar in fame; are as princes on the earth, whose houses are as palaces, and whose warehouses are as cities! British merchants! a voice from your own ships must reach you; it is the voice of poverty crying for help: "O stretch your strong arm, for ye have power to save," let but a few of you unite, and the work of charity, and a great work, is done and well done—done for ever. A score of merchants meeting, and a building, a suitable mansion will soon be erected—an edifice worthy of the British character, of dimensions equal with British sympathy for her suffering members, and of accommodation equal to the wants of the orphan recipients of her favours will be erected, as a lasting monument of praise and of glory to the God of the mighty seas and dry land, who has said, "Forasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me."

The committee are led to this appeal from the circumstance of their now undertaking, to a small extent, the enlargement of the present building, that a further number of objects may be received into the asylum, there being many candidates desirous of admission; and when this enlargement is effected, still the house, convenient as it may be, will be too small—too humble a dwelling for so noble a purpose:—England should have something better than a short leasehold private residence as an asylum for her destitute sailor-orphans, after ten years' existence!

The Committee are proud to announce the continued munificent support of those noble corporations, the Trinity House, and the East India House, in the donations this year also of £50 each, and beg to tender their best thanks. To other establishments, both rich and great, the managers look with anxious expectation, as well as to private ship-owners, merchants, captains of ships, and even the sailors themselves, for such support as their means will justify.

Fellow countrymen! let this report be favourably received; let the statement of the funds be examined; let the management of the institution be inquired into; let the children and the Asylum be inspected, and then tell the miser or the sceptic to go into the purlieus of the river side—see the wretched victims of penury and disease, and compare their condition with the seventy-one little orphans now under your Society's care, and the board feel assured he will not hesitate a moment to give his best aid to double the size of the house, and the number of children in it. It is with much fear and hesitation the

Board of Management enter upon the expense of the proposed addition to the building; and they anxiously hope the step will be justified by the increased subscriptions and donations of a generous public this year.

The committee, in conclusion, beg to express their acknowledgments to the Rev. Henry Melville, A.M., for his able advocacy of the cause of the poor orphans, in the pulpit of the Rev. Dr. Kenny, at St. Olave's church, Southwark, when a collection was made, amounting to £61. To the exertions of the Rev. Doctor the committee also feel very greatly indebted, and are proud to identify that worthy clergyman with the governors of the institution.

The Managers present their thanks to the Ladies' Committee for their persevering, their untiring exertions in controlling the domestic affairs of the Asylum, by which so much good order and economy are observed; also to the honorary secretary, G. S. CLARKE, Esq., for his long and valuable services to the society.

The Committee also tender their best thanks to Mr. NEW, the gratuitous surgeon, for his able services during the past year; also to the Rev. C. HOWLETT, (on his resignation in consequence of leaving the neighbourhood,) for the services he has performed as chaplain to the institution.

Law Proceedings.

SEAMEN'S WAGES.—*Case of the Don Juan.*

THE following are the particulars on which we gave our opinion in a former number.

Mr. Pelham and Mr. Hodgson, solicitors, appeared for the seamen, and stated to the magistrates that they had been engaged at Glasgow, where the *Don Juan*, which was a new vessel, had been sent to take in her engines, and that the defendant when engaging them as able seamen, entered into some verbal arrangement with them to heave up coals from the hold for the engines, till their arrival at London, when he said he should have a machine completed which would perform the labour, and then that their work would be comparatively trifling; from some cause or other the machine failed on their voyage to Falmouth, where the seamen required to know if they were to continue to heave up coals for the rest of the voyage. Some disagreement arose, and the captain engaged other eight men, taking his clients as prisoners to Lisbon, where they were incarcerated in a prison on shore for twelve days, without cause assigned, and from thence brought back in the same vessel to London; they now sought to recover their wages for the whole voyage.

Captain Engledue said his objection to pay the men arose out of their refusal to obey his lawful commands, in consequence of which he had been obliged to engage other men in their places, to whom he had paid the amount of what would have been the complainants' wages.

Mr. Pelham contended that the heaving of coals was not the duty of

an able seaman; there were two classes of men on board the Don Juan, able seaman and coal-trimmers, engineers, &c., and the duties of each were specifically set forth.

Mr. Hodgson—It must also be observed that the coal-trimmers were to be paid a much higher rate of wages than seamen, the latter ought not then to have been expected to do their work.

Mr. Greenwood said, after looking over the articles, that he was of opinion that he had no jurisdiction, inasmuch as the terms of the act of Parliament had not been complied with; the articles altogether failing to set forth the nature of the voyage; though they clearly enough specified the capacity in which each individual was to be employed.

Mr. Pelham submitted that he might call secondary evidence to prove the nature of the voyage.

Mr. Greenwood said that would not be sufficient for him, but he had no objection to hear and decide on the case, if both parties would agree not to call his jurisdiction in question.

Captain Engledue said he did not wish to take any advantage, and would abide by the magistrate's decision.

Mr. Pelham, on the part of the seamen, said he should be happy if the magistrate would hear the case and decide, as the men would pledge themselves to abide by his judgment.

Mr. Greenwood—Well, then, call your witnesses.

Edward Smith, an able seaman, stated that on the 12th of June, he was shipped, with the other complainants, as able seaman, on board of the Don Juan steam-ship, at Glasgow. Other people were engaged as firemen, or stokers, engineers, and coal-trimmers. On going on board, the seamen were told by Captain Engledue that he should want them to heave up the coals from the hold, to supply the bunkers, (the coal-hole of the boilers,) until they arrived at London, when a machine he had constructing would do the work. He said, come, lads, work with a will, and I'll give you a glass of grog every watch, till we get to London, when you will have little or nothing to do. The vessel sailed from Glasgow to Greenock, and from thence to King's Town, in Ireland, and thence to London. Mr. Greenwood.—Rather a roving voyage. Captain Engledue.—The vessel being new we took her round to let the owners see her—to show her.—(Laughter). Smith.—We worked at the coal-heaving till we arrived in London, and there we had the machine in use; on our outward bound voyage it broke, and we were obliged to turn a winch to heave up the coals till the vessel arrived at Falmouth, when we inquired of the captain if we were to do coal work the rest of the voyage; he instantly called us d—d mutinous rascals and scoundrels; and said, "You that refuse to heave up coals go on the quarter deck." We all seven went up, and were kept there three hours; meanwhile the mate was sent on shore, as witness believed, for constables, but came on board again by himself. The captain then went on shore and returned with eight men, four being seamen and four coal-trimmers. We were then told by the agent, that if we went ashore we should receive our wages. We refused to go on shore without a note to that effect. We were then sent forward, and the vessel got under-way; we were not allowed to do anything, but were kept as prisoners at large, walking between

the galley and the fore part of the vessel. On our arrival at Lisbon, on the 28th of July, we were still kept doing nothing, and on the 30th a number of Portuguese soldiers came alongside the vessel and took us out of her, and marched us to a prison on shore, where we were kept twelve days on a pound of bread a day. Mr. Greenwood.—What offence had you committed? What were you charged with? Smith.—No charge whatever was made against us; neither can I tell why we were sent to prison—there was no disturbance in the ship. The soldiers came, with their bayonets fixed, and marched us ashore to the prison. We were taken before no tribunal or authority, and at the end of twelve days we were set at liberty, by Mr. Jenkins, the chief mate, coming for us, when we went on board the *Don Juan* again.

Mr. Greenwood said, he could not understand how it was that seven British subjects could be taken on shore in a foreign country, and imprisoned there twelve days without any charge being made against them before any competent authority.

Mr. Broderip said his brother magistrate had not heard the statement of the captain, made at that office a few days ago, when the *Don Juan* arrived in the river, and the complainants had refused to leave it until they were paid their wages. He understood then that the seamen had attempted to scuttle the ship at Lisbon, and that had led to their imprisonment in that country. He now asked Smith if he knew nothing of such a charge?

Smith said he never heard of it till his arrival in this country, when he heard some talk amongst the men that the captain intended to prefer such complaint.

By Mr. Pelham.—We had a pound of bread per day in prison, and a few callavances; we sold our clothes for food. We wrote to the consul while in prison, and he sent us word that our confinement would cool our courage. Mr. Jenkins, the chief mate, paid some money for our liberation. On our passage home we were rather roughly treated, and had to pass the first night in the open air on the quarter deck, amidst a heavy dew on the coast of Portugal; the next night it rained very hard, and we were sent below amongst the cargo, where we remained until we arrived in the river on the 18th of August. Mr. Greenwood.—Were you not allowed to go to your hammocks. Smith.—No, Sir, we were kept in the hold. Captain Engledue.—I can explain the cause of their imprisonment. The morning after our arrival at Lisbon, I found the vessel had got a tilt on one side, and on examination I found near six feet water in the hold. The vessel, which did not leak a drop, was almost in a sinking state, which poured from a pipe having been turned on connected with the engines. My suspicions, of course, fell on the prisoners who had threatened me, and I caused them to be removed for the safety of the vessel. I applied to the British consul, and also to the admiral, whom I wanted to take the men out of the ship, but he said he would not make a prison of his ship, but if the men chose to volunteer he would take them. This they refused to do, and I was obliged to have recourse to the expedient of sending them to a prison on shore. The consul, however, obliged me take them back to England.

Mr. Greenwood said it was on the face of it a most extraordinary

proceeding. It appeared from the captain's own showing that he had by his own force, and by his own will and pleasure, caused seven of his men, without any charge being made against them, and without examination before any legal authority, to be imprisoned in a foreign country for twelve days; after which he had brought them home in the same ship, and up even to the present moment no charge had been made against them. Captain Engledue.—I should have put them on shore at Falmouth, but neither constables or magistrates were to be found, they being absent at Penryn, engaged in electioneering.

Mr. Greenwood.—And not one magistrate left in the great town of Falmouth? Your conduct in this affair is astounding and unaccountable; but the only question at present before the bench is that respecting wages.

Mr. Pelham.—Yes, Sir, for the false imprisonment an action will be brought.

Captain Engledue then proceeded in his defence, and contended that the complainants had legally forfeited their wages, they having refused to do the duty of the ship. He acknowledged that he had intended to do the objectionable work with a machine, but that having failed on the voyage to Falmouth, he thought he had a right to command the services of the seamen in any way that he should find it necessary.

Mr. Greenwood.—If it was the duty of those men to heave up coals, why did you offer them an encouraging glass for each watch, and tempt them with a promise that such kind of work would soon be over.

Captain Engledue.—Merely to make things easy. Besides, it is the custom in all foreign steamers, for the seamen to heave up the coals to fill the bunkers.

Mr. Pelham.—The articles specifically set forth the capacities of the men, and it could never be argued that engineers, firemen, coal-trimmers, stewards, cooks, waiters, and seamen, were to change their duties whenever the master pleased.

Mr. Hodgson said, the fact of an arrangement having taken place at Glasgow to do this work till they came to London, proved that it was not the ordinary duty of the men. Captain Engledue.—But the machine having failed, it became a duty of necessity for some one to perform. Mr. Greenwood.—But that was only to Falmouth; the necessity had then passed away; and I think the men were perfectly right in wishing you to come to some arrangement about such work for the future. Captain Engledue.—They were not employed as coal-trimmers, but merely had to turn a winch. Two of them only were so employed once in eight hours.

Smith said he had been obliged to turn the winch for four hours together, when the other men objected to the work.

Thomas Hall, an engineer of the Dundee steam-ship, stated that there were seamen and coal-trimmers on board of the Dundee, and that the former were never called to coal work unless in cases of great emergency.

Mr. Evans, the principal Surveyor of Thames Police, was here called, and stated that he believed it was the custom for the sailors to heave up the coals in all foreign steamers. It was here stated that a similar case had once come before Mr. Ballantine for adjudication, but

there being no custom or usage proved, that gentleman had advised the owners to pay the seamen their wages.

Mr. Jenkins, mate of the *Don Juan*, was next called, and stated that he had been in a foreign steamer three voyages; in some, the custom was to employ the seamen in every thing, and in others there duties were separate.

Mr. Greenwood said he would adjourn the case to the next day, to give both parties time to get evidence as to the usage on board foreign steam-ships. He could not, however, help saying that he entertained a strong opinion that the captain was well aware when he engaged the men that it was not their duty to heave up coal for the use of the engines. The subsequent imprisonment of the men at Lisbon was a subject which would, he had no doubt, be investigated, for it ought to have been a grave offence indeed for which seven British subjects were carried on shore by a foreign armed force, and incarcerated in prison for twelve days. On the subject of the wages he would decide on hearing the testimony of persons acquainted with the usages on board foreign steamers.

The next day the parties again attended, accompanied by many captains and pilots of steam-vessels. A solicitor now attended on behalf of the captain, and was about to interfere, when he was informed by the magistrate, that an engagement having been entered into by both parties on the previous day to abide by his decision, he could not now allow of any objections being made. The solicitor after expressing some dissatisfaction, acquiesced in this arrangement.

Captain Corbin, of the *John Bull* steam-ship, said it was the custom in all the vessels belonging to the General Steam Navigation Company, for the sailors to assist in getting coals from the hold to supply the engines.

The engineer of the *Caliope* said he was in the habit of going to Hamburg and other ports, in various steam-vessels, and he never knew the seamen to be employed in getting up coals.

The master of the *Giraffe* said it was the duty of the seamen to assist the firemen if required. An engineer named Clark, also stated that he had sailed in many foreign steamers, but he had never seen seamen employed in coal-trimming.

Mr. Greenwood inquired if there was any further evidence? The solicitor for Captain Engledue said he had no other evidence; and as the Captain had given his word of honour to abide by the decision of the bench, the company would of course consider themselves bound by it.

Records of Wrecks.

THE COLONIST, No. 318, left London 19th October—arrived off St. Catherine's Point, 26th :—wind right on end, anchored off Mother Bank. Sunday Morning, 29th, a gale; top-gallant masts and yards sent down. An alarm of fire raised. Captain on quarter deck in shirt sleeves and slippers, not able to get other clothing to leave the ship in. In twenty minutes, hopes of arresting its progress given up. As soon as fire discovered vessel ordered to be cut adrift from her anchor to run ashore. Great strain on cable,—impossible to get in a shackle,—purpose defeated. Origin of fire not conjectured,—broke out amongst

general cargo,—bricks, soap, carriages, household furniture, eighteen hundred bundles of wooden hoops burnt with intensity. Eighteen passengers on board, six females, and four children of Mrs. Wooding. This lady, with much difficulty got into boat with children, by the steward, not by mate. Gig the first boat alongside,—ladies got in,—obliged to drift to Portsmouth,—rest of passengers landed at Ryde, in boats come off. Two of ship's boats lashed over main hatchway, burnt. sheep in one, a cow in the other,—jumped over board, towed ashore,—broke her leg, necessary to dispatch her. No article of property saved,—principal of crew in half clothing,—captain left pocket-book (ninety pounds) in cabin,—gold watch, chronometer, and property to a large amount lost. Passengers saved nothing,—appearance on shore at Ryde distressing, most being half naked; condition excited commiseration amongst gentry,—opened houses and supplied every necessary; subscription instantly opened for crew,—kept in food and lodging, till coach to London, and present of five shillings. These lost all sea clothes and bedding, many left destitute,—subscription for them,—owners won't pay wages. Colonist first rate vessel, well suited for passengers,—waited many hundreds across Atlantic. Mrs. Wooding (Barbados) came home in Colonist, nine months since; C. Barrow, Esq., passenger, loser to a large amount.

THE JANE, No. 343, 7th October, merchantman, bound for London, going out of Douro. Wind lulled on bar, surf running high; Jane struck by heavy sea,—grounded on the Cabedello. Signal of distress to Savage, brig of war, Hon. Capt. Curzon,—boats,—no approach to wreck,—towline,—hawser fastened to main top, hauled on board,—struck yards and topmasts. Hon. Captain Denman, of Scylla, and more men proceeded on board, with Mr. Gibbons and Mr. Herbert,— exertions to save cargo. Mr. Johnson, British consul, Lieutenant Dunlop, R.N., Lieutenant Bradley, and others, saving pipes of wine out of surf. No exertions relaxed, till evening; tide rapidly rising,—lowered down their men from brig. Lieutenant Bradley (surf rapidly rising) in his gig, to leeward of brig; another man-of-war's boat, and large pilot boat, saved all from the wreck. Master left vessel, followed by Captain Curzon, and Captain Denman; active zeal of officers, discipline of seamen, excite approbation of Englishmen, and astonishment of Portuguese on the beach:—drenched many hours in surf. British consul takes measures to protect property on beach all night. Daybreak boats return to wreck,—officers and men resume task of saving remainder of cargo. Specie brought to Falmouth by Cameleon, saved from Jane.

THE BYWELL, No. 314, left London, 31st October, wind fair, scudded on course; at six, struck on Newcomb Sand,—attempts to get off unavailing; hoisted lights, fired a tar barrel,—got out boats,—small boats swamped,—long boat launched,—violent waves, great distress. Lowestoffe life-boat arrived,—Lieutenant Carter, E. Norton, Esq., and Mr. Disney and crew kind and humane, courageous and warm-hearted, like British seamen, landed crew at Yarmouth by ten o'clock. Three hours in awful suspense,—long-boat could not have lived in heavy sea,—vessel fell on beam-ends,—not the first brave act of Lieutenant Carter.

ALBION, No. 302.—2nd November, rounding Penlea Point, Ply-

mouth, missed stays,—ran on breakwater,—coals from cabin fire set fire to vessel,—consternation,—beating heavily against huge stones,—jolly boat stove alongside,—carried off,—captain's wife and child escaped fire, getting over the side, thrown from her husband's arms, and both drowned. Crew received by Mr. Fiulaiter, master of breakwater, and treated kindly.

JANET, No. 344.—9th September, fallen in with by the Emigrant, (Smith,) in a most distressed condition. Capsized in a gale, on 21st August, two men died on wreck,—captain and ten men saved,—everything besides lost.

CEPHALONIA, No. 315.—Twenty-four thousand dollars out of fifty thousand saved. Native wreckers (Portuguese) plundered vessel and crew, and stole provisions they had saved,—fought for strips of the sails and rigging, set fire to the vessel, to get her copper, and made the most of such a chance!

NORVAL, No. 364, struck by a hurricane between Maternillo shoals,—water-logged and unmanageable,—crew saved by schooner Levant.

SPRIGHTLY, No. 367.—One of crew, named Major, swam through rough sea to shore, distant about a mile, climbed rocks and saved. Mate, finding no hope of escape, his last act was to scratch on the lid of a box with a nail, "Farewell, my poor wife and children."

CŒUR DE LION, No. 317, of Liverpool, 350 tons, general cargo, twenty-one persons on board, wrecked at night, daylight crew seen perched in rigging,—vessel a quarter of a mile from shore,—sea great, to reach her hopeless. Life boat from St. John's Point,—crew absent,—coast-guard manned her, in charge of Mr. Strain,—volunteered services in dangerous and hopeless experiment. Put off,—in an hour within a few yards of vessel,—boat upset,—crew succeeded in getting to Cœur de Lion,—Mr. Strain recovered,—found no anchor down. Two Clanmavery boats, one upset, no lives lost; one Mc. Goolaghan left widow and five children,—other boat reached the wreck, returning was upset, seven persons drowned,—five of vessel. Mr. John Hogg of Rathmullen saved crew of former boat, and put off to wreck with four men,—landed some of her crew, returned and landed another cargo,—returned again and safely landed third cargo,—oars gone. Much credit to magistrates, Messrs. A. H. Montgomery and P. R. M. Browne; admirable arrangements to protect property,—great praise to inhabitants on whole line of coast. Chests of tea, boxes of soap, and casks of rum and brandy washed ashore; property of Messrs. Fisher and Son of Liverpool,—nephew among the drowned: subscription for widow and children of Mc. Goolaghan.

NEW BOOKS.

THE NAVAL KEEPSAKE, containing the life of Nelson, revised and illustrated with original anecdotes, notes, &c. by the Old Sailor. H. Colburn, 13, Great Marlborough-street, 1838.

We have no objection to the life of Nelson in any shape or under any name; and a naval keepsake containing it, from our old acquaintance the Old Sailor, is as acceptable now as it was nearly a year ago. As we have already given our opinion of this book in another part of our present volume, we will merely recommend the author to look to his dedication.

SAILING DIRECTIONS FOR THE GULF AND RIVER OF ST. LAWRENCE. *By Henry Wolsey Bayfield, Captain Royal Navy, F. R. A. S. &c. &c. Hydrographic Office, Admiralty.* R. B. Bate, 21, Poultry.

We shall content ourselves in our notice of these directions, by quoting the introduction which accompanies them, and congratulate our St. Lawrence navigators in obtaining the valuable acquisition which this volume forms: "Full and clear directions are given in the following pages, for entering the Gulf of St. Lawrence; for passing the Magdalen Islands; for approaching the river either on the north or on the south side of Anticosti; and for navigating the estuary of the St. Lawrence, under every change of circumstance, as far as Bic and Green Islands. Beyond these islands no stranger should venture to proceed without the assistance of a pilot." They have been drawn up by that skilful officer, Captain Bayfield, and we may briefly add, they bear the stamp of being the production of a seaman and a gentleman.

THE NEW SAILING DIRECTORY, for the Ethiopic, or Southern Atlantic Ocean. *By John Purdy, Hydrographer.* Laurie, 53, Fleetstreet, London.

This is an excellent book, and is both creditable to author and publisher. Mr. Purdy has evidently done all in his power by seizing every piece of new information that has appeared, to render his work perfect; and he has succeeded in producing the best connected description of the eastern and western shores of the Southern Atlantic that we have met with. No ship should be without it, and both captain and owner will find it the cheapest ten shillings' worth they have ever had.

OUTLINES OF NAVAL ROUTINE. *By Lieutenant A. D. Fordyce, R.N.* London, Smith and Elder, Cornhill, 1837.

When we tell our naval readers that this work contains the whole routine of fitting a ship from stem to stern, and the entire management of her from the time of commissioning to paying off, all of which they well know not only requires the art of the seaman, but that of methodically arranging her crew for all necessary duties with the best possible effect, we shall have given them some idea of the valuable professional labours of Lieut. Fordyce, now before us. He has produced in fact a complete manual for all classes of executive naval officers, giving to the most minute as well as to the most important duties a proper share of his attention. The classification of offences is new and worthy the notice of the veteran officer, while the arrangement of the station, watch, and quarter bills, claim the attention of the whole naval service, being founded on the Admiralty instructions. We should like to have seen a copper plate devoted to each of these, and the publisher would have done *his part better* had the drawings of the boats been *better* executed. These blemishes however, do not affect the value of the author's production, and do not deter us from claiming for it the good opinion of our readers, to whose attention we cordially recommend it.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Commander, F. Symonds. *Lieutenants*, T. Baillie, Rd. Bryan, George Collier, A. Curtis, H. Hayes, A. Mellersh, W. S. Miller. *Surgeons*, Dr. W. H. B. Jones, A. Saunderson. *Flag-Lieutenant*, C. W. De Courcy Ross. *Secretary's Clerk*, J. Miller. *Assistant's Clerk*, W. Colman, appointed to Rear-Admiral Ross. *Agents of contract steam vessels*, Lieut. W. Parker, Lieut. John Hall. *Out Pensioners of Greenwich*, Lieut. J. Tindale, Lieut. Rouse. *Convict ship*, *Emma Eugenia*, Surgeon A. Wylie. *Flag Lieutenant* to Rear-Admiral Hon. G. Elliott, Lieut. T. J. Clarke, office of Sir J. Ommanney. *Secretary's Clerk*, E. Waller.

Packets between Holyhead and Dublin:—

ZEPHYR.—*Lieutenant* DUDCAN. OTTER.—*Lieutenant* JONES. CUCKOO. ——— Wadling, R.N. GLEANER.—*Lieutenant* DAVIS. DOTEREL. ——— Gray, R.N. SPRIGHTLY. ——— Moon, R.N.

Dublin to Liverpool:—

AVON.—*Lieutenant* TOWLEY. LUCIFER.—*Lieutenant* PHILIPS. URGENT. ——— Emerson, R.N. SHEARWATER. ——— Smithest, R.N., from Kingston to Liverpool.

APPOINTMENTS.

ALLIGATOR.—*Second Master*, G. B. Franklin. BASILISK.—*Clerk*, in charge, E. D. Black. BRITANNIA, 120.—*Mate*, Charles Fegan. CALLIOPE, 28.—*Captain*, T. Herbert; *Second Master*, Homersham; *Purser*, R. Green. CLEOPATRA, 26.—*Lieutenant*, F. Drew.—COAST GUARD.—*Lieutenant*, W. P. Newenham. COLUMBINE, St. V.—*Assistant Surgeon*, J. Allen. CROCODILE, 28.—*Captain*, J. Polkinghorne; *Mate*, W. T. Lower. DONEGAL, 78.—*Lieutenant*, H. M. Tylden; *Volunteers, first class*, E. G. Porcher, J. Freeland, T. Dawes. DUBLIN, 50.—*Lieutenant*, E. Smith. EDINBURGH, 74.—*Lieutenants*, C. E. Molloy; *Midshipman*, W. Anson; *Chaplain*, Rev. R. C. Wilson. ELECTRA.—*Commander*, W. Preston; *Lieutenant*, W. A. Hazeltyne; *Master's Assistant*, W. Forbes; *Purser*, E. A. Williamson; *Surgeon*, A. Sanderson; *Midshipman*, J. Strong; *Clerk*, F. Cleave. EXCELLENT.—*Lieutenant*, Arthur Lowe; *Mate*, G. Poplewell. FORESTER, 3.—*Clerk*, in charge, R. Hall. HARRIER, 18.—*Master*, J. Elliott. HERCULES, 74.—*Lieutenant*, D. Elliot. HYACINTH, 18.—*Midshipman*, P. Barclay. IMOGENE, 28.—*Mate*, E. W. Lang; *Midshipmen*, G. E. W. Hammond, N. T. Sullivan. JUPITER, 38.—*Second Master*, J. Paul. MELVILLE, 74.—*Surgeon*, John Campbell. MINDEN, 74.—*Lieutenant*, W. Mottley. PRESIDENT, 52.—*Chaplain*, Rev. R. H. Small. RACEHORSE, 18.—*Commander*, H. W. Crauford. *Lieutenant*, H. Clarke; *Second Master*, R. Salmond. REDWING, St. V., *Second Master*, W. Reid. ROVER, 18.—*Lieutenant*, W. Chambers. ROYAL SOVEREIGN, Yacht.—*Master*, W. White. SCOUT, 8.—*Mate*, H. G. Shute; *Purser*, R. Mason. SPEEDY, 8.—*Mate*, L. Maddock. TEMERAIRE, 104, *Master's Assistant*, J. King. THALIA, 46.—*College Mate*, A. Farquhar. THUNDER, 6.—*Surgeon*, R. McCormick; *Assistant Surgeon*, W. White. TYNE, 28.—*Mate*, J. J. Dornford; *Midshipmen*, Charles Cheshire, W. P. Wray; *Volunteer*, first class, J. J. Plomer; *College Volunteers*, R. Dhu, G. Oderanty, Swedish navy; *Clerk*, Martin; *Assistant Clerk*, R. G. Sillierap. VICTORY, 104.—*Second Master*, Julius Dou; *Master's Assistant*, W. Diaper; *Chaplain*, Rev. T. Baker; WASP.—*Commander*, Hon. D. Pelham; *Lieutenants*, G. Broke, W. Crozier; *Master's Assistant*, J. Aylen; *Purser*, A. Laidlaw; *Surgeons*, Dr. C. Allison, W. Martin; *Mate*, W. Mottley; *Extra Mate*, Shears; *Assistant Surgeons*, A. Slight, R. Carpenter; *Clerk*, J. Ozzard. WELLESLEY, 74, *Volunteer*, first class, J. Fortescue.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION TO 25th NOVEMBER, 1837.

AT HOME.

African, 1, St. V., Capt. W. Beechey, 3rd Nov. put into Holyhead for coals, and sd. *Alligator*, 28, Captain Sir J. G. Bremer, C.B., Plymouth, fitting. *Belvidera*, 42, Captain C. B. Strong, 2nd Nov. arrived at St. Helen's; 4th moved into Portsmouth harbour. *Blonde*, 46, Captain F. Mason, 15th Nov. paid off at Portsmouth. *Britannia*, 120, Flag Admiral Sir P. Durham. Captain J. W. D. Dundas, Portsmouth. *Cameleon*, 10, Lieut.-Com. J. Bradley, Plymouth, fitting; 18th Nov. sailed for Lisbon. *Crocodile*, 28, Captain J. Foote, 9th Nov. in Plymouth Sound; 11th Nov. sailed for West Indies. *Donegal*, 74, Captain J. Drake, 15th Nov. left Plymouth for Lisbon. *Edinburgh*, 74, Captain W. H. Henderson, 5th Nov. sailed for Plymouth, arrived 7th; 15th arrived at Cork. *Electra*, 18, commissioned 15th. Oct. at Portsmouth, by Com. W. Preston. *Excellent*, Captain F. Hastings, Portsmouth, *Favourite*, 18, Com. W. Croker, 6th Nov. left Plymouth for E. India. *Forester*, 3,

Lieut.-Com. G. Rosenberg, 6th Nov. left Plymouth for Africa. *Hyacinth*, 18, Com. W. Warren, at Spithead. *Jupiter*, 38, Mr. R. Easto, 7th Nov. left Portsmouth for Cork, on her way to Malta. *Larne*, 18, Com. P. Blake. *Lightning*, St. V., Lieut.-Com. J. Shambler, 4th Nov. arrived at Plymouth, and sailed; 7th arrived at Kingston; (Dublin;) 11th sailed for Holyhead. *Melville*, 74, Flag of Rear-Admiral G. Elliott, Captain Hon. R. S. Dundas, Portsmouth, fitting. *Messenger*, 1, St. V., Mr. J. King, 4th Nov. arr. at Plymouth, and sailed for Portsmouth; 11th arr. at Portsmouth; 15th left for Guernsey. *Minden*, 74, Captain A. R. Sharpe, 29th Oct. *Pantaloon*, 10, ———, 14th Nov. arrived at Plymouth; 17th arrived at Portsmouth. *Partridge*, 10, *Tender*, Lieut.-Com. Bisson, 3rd Nov. left Plymouth for Portsmouth. *Pique*, 36, Captain E. Boxer, 1st Nov. in the Sound. *President*, 52, Flag of Rear-Admiral Ross, Captain J. Scott, Portsmouth, fitting. *Rolla*, 10, Lieut. F. H. Glasse, 3rd Nov. arrived at Devonport from the Cape; 7th into harbour. *Rose*, 18, Lieut. G. Lowe, 12th Nov. arrived at Portsmouth from E. Indies; 14th arrived in the Downs; 17th arrived at Sheerness. *Royal Adelaide*, 104, Flag of Admiral Lord Amelious Beauclerk, Captain Sir W. Elliott, K.C.B., Plymouth. *San Josef*, 110, Captain J. Hancock, C.B., Plymouth. *Spiffire*, 6, St. V., Lieut.-Com. A. Kennedy, left Plymouth 4th Nov. for St. Sebastian and Malta. *Terror*, 10, Captain G. Back, 27th Oct. arrived Plymouth in tow of Columbia; 29th sailed; 3rd Nov. passed Sheerness. *Thunder*, 6, Lieut. B. Allen, Portsmouth, fitting. *Tyne*, 28, Captain J. Townsend, Portsmouth, fitting. *Victory*, 104, Captain T. Serle, C.B., Portsmouth. *Wasp*, 16, commissioned 24th Oct. at Portsmouth by Lieut. Crozier.

ABROAD.

Acteon, 26, Captain Right Hon. Lord E. Russell, 13th July, left Coquimbo. *Aëta*, S. V., Captain A. T. E. Vidal, 30th Oct. arrived at Gibraltar. *Asia*, 84, Captain W. Fisher, 18th Oct. at Malta. *Basilisk*, 6, Lieut. G. McDonnell, 10th July arrived at Valparaiso from Cobija. *Beagle*, 10, S. V., Commander J. C. Wickham, 21 Sept. arrived at Cape of Good Hope. *Bellerophon*, 80, Capt. S. Jackson, Malta, 18th Oct. *Bonetta*, 3, Lieut. H. P. Deschamps, Sept. off Bonny. *Buffalo*, Master, J. Wood, 27th June arrived at Sydney. *Buzzard*, 3, Lieut.-Com. J. Stoll, Sept. off Whyda. *Childers*, Com. Hon. H. Keppel, 14 Sept. at the Gambia. *Clio*, 16, Commander W. Richardson, 19th Oct. arrived at Barcelona; 31st sailed. *Columbine*, 16, Com. T. Henderson, Sept. left Ascension for Sierra Leone. *Comet*, St. V., Lieut.-Com. G. Gordon, 9th Nov. at St. Andero. *Comus*, 18, Com. Hon. P. P. Carey, 29th Sept. left Havana for Cay Sal. *Confiance*, 2, Lieut.-Com. W. Arlett, 4th Oct. at Malta. *Cornwallis*, 74, Captain Sir R. Grant, 28th Sept. left Halifax for Bermuda; 19 Oct. sailed for Bermuda. *Curlaw*, 10, Lieut.-Com. E. Norcott, Sept. left Ascension for Sierra Leone. *Dido*, 18, Captain L. Davies, C.B., 19th Oct. at Tarragona. *Dolphin*, 3, Lieut.-Com. J. McDougal, Sept. left Ascension for Benin. *Dubis*, 50, Captain R. Tait, 29th Aug. at Rio. *Echo*, St. V., Lieut. James, 10th Oct. arrived at Jamaica. *Fly*, 18, Com. R. Elliott, 6th Sept. arrived at Rio from Bahia. *Gannet*, 16, Com. W. G. H. Whish, 18th Sept., left Barbados for Demerara. *Harlequin*, 16, Com. J. E. Erskine, 13th Oct. at Gibraltar. *Hazard*, 18, Com. J. Wilkinson, 8th Oct. arrived at Gibraltar from Portendic, 13th Oct. remained. *Imogene*, 28, Captain H. W. Bruce, 14th July arrived at Valparaiso from Rio. *Inconstant*, 36, Capt. D. Pring, 3rd Nov. arrived at Lisbon from Cadiz. *Larne*, 18, Com. P. Blake, 26th Aug. arrived at the Cape; 31st sailed for India. *Leveret*, 10, Lieut.-Com. C. J. Bosanquet, Sept. E. coast of Africa. *Madagascar*, 46, Capt. Sir J. S. Peyton, K.C.H., 31st Aug. left Tampico for Jamaica; 27th Sept. arrived at Havana from Tapico; 31st sailed for Jamaica. *Minden*, 74, Captain A. R. Sharpe, C.B., 29th Oct. arrived at Gibraltar from Lisbon. *North Star*, 28, Captain Rt. Hon. Lord John Hay, 8th Nov. at Passages. *Orestes*, 18, Com. J. F. Newell, 13th Oct. at Malta; 19th Gibraltar. *Pearl*, 20, Captain Lord Clarence Paget, 14th Sept. left Madeira for Rio; 6th Oct. arrived at Bermuda. *Pembroke*, 74, Captain F. Moresby, 9th Oct. arrived at Gibraltar. *Phœnix*, St. V., Com. W. Henderson, 8th Nov. at Passages. *Pickle*, sch., Lieut. P. Hart, 14th Oct. left Havana. *Portland*, 52, Captain D. Price, 1st Oct. arrived at Malta; 18th remained. *Princess Charlotte*, 104, Flag-Admiral, Hon. Sir R. Stopford; Captain, A. Fanshawe, Malta 18th Oct. *Pylades*, 18, Com. W. L. Castle, Sept. eastern coast of Africa. *Racer*, 16, Com. J. Hope, 9th Sept. arrived at Jamaica from Chagres; 14th sailed for Honduras. *Rainbow*, 28, Captain T. Bennet, left St. John's, Newfoundland, for Bermuda. *Rapid*, 10, Lieut.-Com. Hon. De Ros Kinnaird, 4th Oct. at Malta; 12th sd. for Tunis. *Rhadamanthus*, St. V., Com. A. Wakefield, 15th Oct. arr. at Gibraltar. *Ringdove*, 16, Com. S. Nixon, 10th Sept. arrived at Jamaica from Halifax; 17th sailed on a cruise; 14th Oct. sailed from Havana. *Rodney*, 92, Captain H. Parker.

Malta, 18th Oct. *Romney*, R.S., Lt. Com. C. Jenkin, 25th Aug. arr. at Havana from Nassau; remains as a receiving ship. *Rose*, 18, Com. W. Barrow, 31st May arrived at Trincomalee from Bombay. *Rover*, 18, Com. C. Eden, 3rd July at Valparaiso. *Sulamunder*, St. V., Com. S. C. Dacres, 8th Nov. at Passages. *Sapphire*, 28, Capt. R. Rowley, 24th Sept. left Malta. *Sappho*, 16, Com. T. Fraser, 18th Oct. at Halifax; 19th sd, for Bermuda. *Satellite*, 18, Com. J. Robb, 1st Oct. left Jamaica for Carthagena. *Savage*, 10, Lieut.-Com. Hon. E. Curzon, 13th Oct. at Oporto. *Scorpion*, 10, Com. C. Gayton, 11th Oct. at Gibraltar; 26th Oct. left Carthagena. *Scout*, 18, Com. R. Craigie, Sept. at the Cape; 16th Sept. left St. Helena for Ascension, having arrived 13th. *Scylla*, 16, Com. Hon. J. Denman, 11th Oct. at Oporto; 28th Oct. arr. at Lisbon. *Seringapatam*, 46, Captain J. Leith, 22nd Aug. arrived at Havana from Nassau; 5th Oct. arrived at Bermuda. *Serpent*, 16, Com. R. L. Warren, 15th Sept. at P. Royal, Jamaica; arrived 14th from Barbados; 16th sailed for Chagres. *Skipjack*, 5, Lieut. J. Robinson, 30th Sept. arrived at Bermuda; 1st Oct. sailed for Jamaica. *Snake*, 16, Com. A. Milne, 10th Sept. left Jamaica for Carthagena and S. Martha; 3rd Oct. arrived at Jamaica; 13th sailed on a cruise. *Sparrow*, 10, 6th Sept. spoken on her way to the Falkland Islands. *Sparrowhawk*, 16, Com. J. Shepherd, (b) 16th Aug. left Rio for Falkland Islands. *Spider*, 6, Lieut.-Com. J. P. Reilly, 6th Sept. arrived at Rio from R. Plata. *Spitfire*, 6, St. V., Lieut. A. Kennedy, 7th Nov. arrived at Passages. *Stag*, 46, Commodore T. B. Sullivan, 3rd July at Valparaiso. *Talavera*, 7½, Captain W. B. Mends, 30th Oct. left Barcelona. *Tweed*, 20, Com. Hon. F. T. Pelham, 9th Nov. at St. Andero. *Vanguard*, 80, Captain Sir. T. Fellowes, Malta, 18th Oct. *Victor*, 16, Com. R. Crozier, 16th April arrived at S. Australia from Swan River; 25th sailed for Sydney. *Viper*, 6, Lieut.-Com. W. Winniett, Sept. Benin. *Wanderer*, 16, Com. T. Bushby, 24th Sept. left Havana for Quebec; 11th Oct. arrived at Halifax; 23rd arrived at Quebec. *Waterwitch*, 10, Lieut.-Com. W. Dickey, Sept. off Lagos. *Wellesley*, 74, Flag Rear-Admiral Sir Fred. Maitland, Capt. F. Maitland, Oct. arrived at Madeira; to sail 22nd. *Winchester*, 52, Captain E. Sparshott, 5th July arrived at Calcutta from Trincomalee. *Wizard*, 10, Lieut.-Com. E. L. Harvey, 19th Aug. left Rio for Bahia; 12th Sept. arrived at Pernambuco from Bahia. *Wolverine*, 16, Com. Hon. E. Howard, 5th Oct. at Malta; 6th sailed for Athens.

Births.

Lately, the lady of Lieut. St. Leger Aldworth, H.M.S. Edinburgh, of a daughter.

At All Saints' Villa, Mile End, the lady of Lieut. T. B. Brown, R.N., of a daughter.

On the 6th Nov., at Southwick, the lady of Captain Brace, R.N., of a son.

Marriages.

At Stoke church, Plymouth, Lieut. A. T. C. Dickson, Flag-Lieutenant to Rear-Admiral Warren, to Miss Amelia Wimper. The bride was given away by Admiral Lord Amelius Beauclerk.

At St. Andrew's church, Plymouth, John Toll, Esq., of Hallowell Beerferris, to Ann Mosley, eldest daughter of John Mosley, Esq., Merchant, Purser, R.N., of Tavistock Place, Stoke.

On the 31st Oct., at St. Mary Abbot's, Kensington, Captain George Tupman, R.N., to Elizabeth, eldest daughter of the late A. L. Emetson, M.D., of Ulvescroft Priory, Leicestershire.

On the 9th Nov., at St. George-the-Martyr, Queen Square, by the Rev. William Short, Rector, Captain Greenaway,

R.N., to Doro Catherine, youngest daughter of the late John Cookson, of Clapham, Esq.

On the 4th Nov., at St. Annes, Limehouse, by the Rev. J. Williams, M.A., Mr. William S. Forsaith, to Clara, eldest daughter of the late W. H. Twynam, R.N.

At Falmouth, Lieut. George Pooley, R.N., of Truro, to Frances Ann, second daughter of John Vigers, Esq., Surgeon, of Falmouth.

Deaths.

On the 1st Nov., at Boulogne-sur-mer, Elizabeth Watson, upwards of 90 years of age. She was the widow of Mr. Watson, Assistant Surgeon and Dispenser of the Royal Naval Hospital, at Plymouth; who was upwards of 33 years in her Majesty's service. She was the mother of Captain Watson, of the marines, who died of fever on board the Polyphemus, at Jamaica, in 1805; of Lieutenant Watson, who was drowned at the Nore while on duty in 1797; of — Watson, surgeon of her Majesty's ship Horatio, who died at Heligoland in 1811; and of a daughter, who died suddenly, also the widow of a naval officer. Mrs. Watson having lost

her husband about six weeks before the King's Order in Council appeared, granting annuities to the widows of that class of officers, was denied a pension. In 1834 her case became known to William IV., who immediately commanded her a pension of £30 per annum from his private purse. On the death of his Majesty this pension ceased, and Mrs. Watson's granddaughter (the child of her daughter before mentioned) is left totally unprovided for.

At Teignmouth, Devon, in her 82nd year, Susan, Dowager Viscountess Exmouth, relict of the Rt. Hon. Edward Viscount Exmouth, G.C.B., Vice-Admiral of England, &c.

On the 27th Oct., at the Royal Hospi-

tal, Greenwich, Lieut. Joseph Dewsnap, R.N., (1799,) upwards of 34 years one of the officers of that establishment.

At Walmer, Kent, Commander Dowers, late Governor of the Royal Naval Hospital there, aged 55.

At Cork, retired Commander John Brumhall, R.N.

Lately, at her residence, Thornhill, Muttley, Maynard, the beloved wife of Capt. Wilkinson, R.N.

Lately, at Gibraltar, on board of H.M.S. Asia, Lieut. Charles Dimock, of that ship.

At Malta, on the 4th Nov., Lieut. Thomas Mackeson, of H.M.S. Portland.

At Bristol, D. Henderson, Esq., Surgeon, R.N.

METEOROLOGICAL REGISTER,

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

OCTOBER, 1837.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	Su.	In. Dec. 29.91	In. Dec. 29.93	59	63	53	65	S.	S.	3	3	Odr. (2)	Bc.
2	M.	30.14	30.18	59	64	55	65	S.W.	S.W.	3	3	Od (2)	Bc.
3	Tu.	30.16	30.11	58	64	51	65	S.W.	S.W.	2	3	Bcm.	Bc.
4	W.	30.03	30.07	64	66	60	66	S.W.	S.W.	3	3	Bcp (1)	Bc.
5	Th.	30.26	30.24	57	61	50	62	W.	W.	4	4	Bc.	Bc.
6	F.	30.09	30.08	58	60	54	61	S.W.	S.W.	4	2	Or. (2)	Bc.
7	S.	30.22	30.24	53	62	46	63	W.	W.	2	2	B.	Bc.
8	Su.	30.20	30.16	56	60	50	62	S.W.	S.W.	2	2	O.	Bcp (2)
9	M.	30.29	30.31	48	56	42	57	S.W.	N.W.	1	2	Bc.	B.
10	Tu.	30.36	30.36	54	62	45	62	S.W.	S.W.	1	1	Bc.	Bc.
11	W.	30.42	30.42	55	63	50	64	S.W.	S.W.	1	2	Bc.	Bc.
12	Th.	30.46	30.48	52	59	47	61	S.W.	N.	1	3	Fbc.	B.
13	F.	30.60	30.59	45	55	39	57	N.E.	N.E.	3	4	Bw.	Bc.
14	S.	30.69	30.70	44	53	40	54	N.E.	N.E.	2	2	B.	B.
15	Su.	30.64	30.60	42	52	34	54	S.W.	S.W.	1	1	B.	B.
16	M.	30.46	30.40	48	54	41	55	S.W.	N.W.	1	2	O.	B.
17	Tu.	30.25	30.20	46	56	39	57	S.W.	S.W.	2	3	Bcm.	O.
18	W.	30.11	30.12	51	57	43	59	S.W.	W.	3	4	Bc.	O.
19	Th.	30.39	30.41	44	56	38	58	W.	S.W.	3	4	Bc.	O.
20	F.	30.53	30.56	52	62	44	63	W.	N.W.	1	2	O.	B.
21	S.	30.63	30.61	53	55	47	57	S.W.	W.	1	1	Bc.	B.
22	Su.	30.46	30.37	52	55	45	59	W.	W.	2	2	O.	O.
23	M.	30.04	29.92	54	60	50	62	S.W.	S.W.	4	4	O.	Bcr (4)
24	Tu.	29.59	29.50	49	50	49	52	S.W.	S.W.	2	3	Or. (1)	Op. (3)
25	W.	29.67	29.80	40	47	34	48	N.	N.	5	6	Or. (2)	O.
26	Th.	30.04	29.96	43	51	32	53	S.W.	S.W.	3	4	Bc.	Bc.
27	F.	29.50	29.51	52	50	38	52	S.W.	W.	6	5	Qor. (1)	Qbc
28	S.	29.60	29.46	46	51	39	51	S.W.	S.	3	5	Bc.	Qop. (5) (4)
29	Su.	29.44	29.44	37	45	35	47	S.W.	S.W.	2	2	B	Bcp 31
30	M.	29.35	29.28	49	58	36	59	S.	S.W.	3	4	Qor. (2)	Qbcp (4)
31	T.	29.36	29.40	43	48	41	49	S.W.	W.	5	5	Qb.	Qb.

OCTOBER.—Mean height of the Barometer=30.116 inches; Mean Temperature=51.0 degrees
Depth of Rain fallen=2.30 inches.

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

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ERRATA.

- Page 37, line 2, for "of," read "at."
... 49, line 11, for "the sea," read "by the sea."
... 50, line 17, dele the words "then and in that case, such copy of the said specification."
- Page 51, line 2, for "Thames," read "Thomas."
... 60. For "Pirates," read "Pilots," line 9 from bottom.
... 101, line 25, for "cause," read "course."
... 158, current No., 3d line from bottom, for "the gentlemen present," read "the first-named gentleman present."
- Page 167, line 7, for "fine," read "fura."
... 301, and the 4th line from top, instead of "that a piston with a 3ft. 6in. stroke is calculated to travel at the rate of 192½ perches per minute," it ought to have been "192½ FEET per minute."
- Page 311, line 34, after "thirteen," insert "feet."
... 322, line 16 from bottom, for "beach," read "sea beyond."
... 326, line 11, for "by," read "to."
... 350, line 2 from bottom, for "Ringdon," read "Ringdove."
... 471, line 27, for "Wolverine," read "Rhadamanthus" St. V.
... 477, line 27 from bottom, for "increase the safety valve," read, "increase the load on the safety valve."
- Page 530, line 10, for "phenomenon," read "phenomena."
... .. line 26, for "off," read "of."
... 555, line 17 from bottom, for "amalous," read "anomalous."
... 570, line 12, for "land," read "island."
... .. line 13 from bottom, for "Treeless," read "Zeeclip."
... 571, line 14, for "three finger," read "three fathom."
... .. bottom line, for "N. by W.," read "N. by E."
... 577, last line, for "passage," read "flues."
... 578, last line, for "engine," read "engines."
... 580, line 21, for "expanded," read "expended."
... .. line 23, 24, dele the words, "from its powerful expansion."
... .. line 25, for "power of arising," read "power of its elasticity arising."
... 611, line 13 from bottom, for "hammock," read "hummock."
... 744, line 13 from bottom, for "observe," read "observer."
... 771, line 13, for "inaccessible," read "accessible."
- In our last volume, page 752, for "suggestion for strengthening steam vessels," read "suggestion for preventing steam vessels from foundering."

